EUROIMMUN
a PerkinElmer company

Medizinische
Labordiagnostika
AG

Automation

Autoimmune diagnostics

Infection diagnostics

Allergy diagnostics

Antigen detection

Molecular genetic diagnostics

Product Catalogue 2022

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About us

EUROIMMUN AG

The company · Global business

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The company

As one of the leading manufacturers of medical laboratory diagnostics worldwide, EUROIMMUN stands for innovation. More than 3,200 employees in 17 countries develop, produce and sell test systems to support the diagnosis of diseases, as well as software and automation solutions for the performance and evaluation of these tests. Laboratories in over 140 countries use EUROIMMUN products for the diagnosis of autoimmune and infectious diseases as well as allergies, and to perform genetic analyses.

The company was founded in 1987 from the University of Lübeck (Schleswig-Holstein, Germany). Since 2018, the US American company PerkinElmer, Inc. has been the sole shareholder of EUROIMMUN. PerkinElmer is an international leader in medical and biotechnology. The company, which has its headquarters in Waltham (Massachusetts), has 14,000 employees worldwide. With its innovative test systems, imaging and IT systems, it offers an extensive expertise in diagnostics, medical research and environmental and food analysis. PerkinElmer, Inc. is listed on the S&P-500 Index.

Among the initial pioneering achievements of EUROIMMUN was the development of BIOCHIPs in 1983. Today, the company uses virtually fully automated BIOCHIP fragmentation and production machines which are designed and produced in-house and are in use worldwide. Furthermore, the company commands a broad technology base, which it has drawn on to stimulate and promote fundamental new developments in medical laboratory diagnostics. Examples are the molecular biological synthesis of designer antigens, the computer-based immunofluorescence microscopy (CAIFM) and the development of multiparameter microarrays for the identification of gene polymorphisms and pathogens.

High professional competence and continuing education are essential in the use and distribution of EUROIMMUN products. The EUROIMMUN Academy receives more than 1000 customers from over 100 countries for scientific trainings every year. Moreover, there are training laboratories in several countries. Furthermore, the accredited Institute for Quality Assessment affiliated to EUROIMMUN offers quality assessment schemes to help to maintain a high quality standard in external laboratories.

The Institute for Experimental Immunology, another EUROIMMUN institution, is dedicated to basic research. The institute maintains cooperations with universities, clinics and renowned research institutions from all over the world, which have also resulted in numerous diploma and doctoral theses. EUROIMMUN is ISO-certified (EN ISO 13485:2016, ISO 9001:2015, MDSAP) and has successfully passed various international inspections (FDA, ANVISA, KGMP, UMCC, etc.). The Clinical Immunological Laboratory of Prof. Dr. med Winfried Stöcker, cooperating with EUROIMMUN, offers a special service by providing fast and differential diagnostics to customers and clarifying difficult result constellations in several hundreds of patient samples per day.

EUROIMMUN meets its needs for qualified personnel not only through its presence at recruitment or trade fairs and via advertisements, but also through its own training and dual degree programs. In addition to vocational school, the trainees undergo a comprehensive practical and theoretical program and receive intensive support in their everyday work life. At present, the company has more than 3200 employees, of which 112 are apprentices and students. 1685 employees have an academic qualification and 217 a doctoral degree. The percentage of female employees is around 60 percent.

The atmosphere at the company is productive and characterised by openness and respect. New employees at EUROIMMUN are given permanent contracts. All employees receive company pension benefits and premium payments for outstanding achievements. They also have the possibility of regular further training. The excellent company restaurant offers a variety of freshlycooked meals every day. The children are lovingly looked after in the company-owned crêche, kindergarten and after-school care, while their parents are working in the vicinity.

EUROIMMUN in figures

1987	founded in Lübeck, Germany	**7**	offices in Germany
USD 465 M	annual group turnover in 2020	**16**	subsidiaries in other countries
3233	employees worldwide	**543**	own/in-licensed IP rights
1685	university graduates	**3rd**	in the ranking of the most innovative small and medium-sized enterprises in Germany *(WirtschaftsWoche, April 2014)*
217	employees with doctoral degree		
112	apprentices		

EUROIMMUN AG

The company · Global business

The EUROIMMUN Academy

At the EUROIMMUN Academy qualified experts in medical laboratory diagnostics provide intensive theoretical and practical training at a high scientific level. The trainings comprise all topics from clinical pictures to diagnostic strategies, reagents, automation solutions and workflow generation based on laboratory software. The training content is optimally matched to meet the requirements and knowledge of the participants. Moreover, the courses are offered in different languages, e.g. German, English, French, Arabic, Swedish and Hungarian.

Every year, more than 1000 guests from over 100 countries, including customers, technicians, field staff and employees from all EUROIMMUN subsidiaries and distributors benefit from the trainings provided by the EUROIMMUN Academy. The trainings are certified according to ISO 9001:2008.

The Institute for Quality Assurance

The Institute for Quality Assessment (IfQ) was founded in 2005 as an institution of EUROIMMUN Medizinische Labordiagnostika AG. It received accreditation in December 2008. The IfQ is responsible for organising, managing and evaluating quality assessment schemes. These are used to assess the capabilities of participating laboratories and provide an objective means to determine the reliability of measured data. After successful completion, participants are awarded a certificate. The assessment is performed using reference values, which are determined based on the consensus of the qualitative evaluations from external reference laboratories. These laboratories use reagents from different manufacturers for their analyses and share their test results.

Since recently, registered participants also have the possibility to carry out an evaluation of electronically provided immunofluorescence pictures or answer special exercise questions. At completion, they receive a certificate of participation. Together with the new literature area, the IfQ offers a complete package to enable participants to master their daily laboratory challenges in a competent, safe and reliable way. Moreover, the IfQ Lübeck is always happy to support laboratories with expert scientific advice.

The Institute for Experimental Immunology

The Institute for Experimental Immunology was founded in 2005 to combine the scientific activities of researching new antigens and developing innovative methods. Highly qualified scientists work hand in hand on various projects. The institute creates the basis for the development of new test systems using state-of-the-art laboratory equipment, such as a mass spectrometer. The most outstanding achievements of the institute include the following:

- the cloning and expression of numerous recombinant antigens used in EUROIMMUN test systems, e.g. VlsE from Borrelia or glycolprotein G from HSV-2

- the development of so-called designer antigens, which consist of natural molecules that have been genetically optimised for antibody detection, e.g. PR3-hn-hr, GAF-3X, BP180-NC16A-4X or OspCadv

- RC-IFT (recombinant cell IFT) – cells transfected with diagnostically relevant antigens, which are used particularly in neurology and dermatology, e.g. NDMAR, aquaporin 4 and desmoglein 1 and 3

- the identification of previously unknown neuronal autoantigens using histo-immunoprecipitation, e.g. neuronal Na+/K+-ATPase (ATP1A3), inositol-1,4,5-trisphosphate receptor type 1 (ITPR1) and neurochondrin (NCDN)

The Clinical Immunological Laboratory

EUROIMMUN and the Clinical Immunological Laboratory of Prof. Dr. med. Winfried Stöcker have a close research cooperation. The diagnostic spectrum of the clinical immunological laboratory encompasses the areas of autoimmune, infection and allergy diagnostics as well as molecular diagnostics.

Techniques used by the laboratory are mainly indirect immunofluorescence, enzyme immunoassays, chemiluminescence immunoassays, radioimmunoassays (RIA) and microarrays. Each day the laboratory receives several hundreds of patient samples from different countries for clarification of unusual or difficult result constellations. Here, EUROIMMUN customers can also obtain confirmation of their test results as a special service.

EUROIMMUN AG

The company · Global business

1979 – Invention of TITERPLANE technique optimises incubation conditions for IIFT

1983 – BIOCHIP technology revolutionises IIFT

1987 – Founding of EUROIMMUN

1993 – First ELISA: Anti-M2 ELISA (anti-mitochondrial antibodies)

1995 – First infectious diseases ELISA: Anti-Borrelia ELISA

1996 – EUROPLUS technology: Multiplex IIFT by combining tissue and antigen spots

2002 – Anti-CCP ELISA: Breakthrough in rheuma arthritis diagnostics

2010 – EUROPattern Microscope: First automated microscope

2011 – IIFT automation: Sprinter XL and IF Sprinter

2012 – EUROBlotOne: Fully automated blot device

2012 – Milestone in diagnostics of membranous nephropathy: Exclusive anti-phospholipase A2 receptor (PLA2R) assays

2013 – Identification of allergy-inducing components using defined partial allergen diagnostics (DPA-Dx)

2013 – EUROArrayScanner

2016 – Anti-Zika Virus ELISA: Worldwide first CE-marked IVD test

toid

2003
Anti-Borrelia plus VlsE ELISA (IgG): First assay based on a recombinant antigen

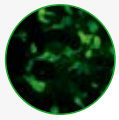
2005

Analyzer I: First laboratory device

2007
Designer antigens: Anti-Gliadin (GAF-3X) ELISA with gliadin-analogous fusion peptide

2007

EUROLabOffice: Laboratory Information System

2007
Anti-NMDAR IIFT: First recombinant cell (RC) IIFT


2009
Nucleosome-mediated coupling of nDNA to the surface of ELISA wells (dsDNA-NcX)

2010
BIOCHIP Mosaics with recombinant cell substrates

2017
EUROIMMUN becomes a member of the PerkinElmer family

2017

IIFT slide washer: MERGITE!

2017
EUROLabWorkstation ELISA: EUROIMMUN's high-throughput solution for fully automated ELISA processing

2018
EUROArray Dermatomycosis: New standard in diagnostics of fungal infections of the skin

2019
EUROLabWorkstation IFA

2019

RA Analyzer 10: First random access device based on ChLIA technology; Launch of first ChLIA products

2020
EURORealTime SARS-CoV-2 and Anti-SARS-CoV-2 ELISA Among the first CE-marked assays in Europe for COVID-19 diagnostics

EUROIMMUN AG

The company · Global business

Germany

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Global business

The main country to manufacture EUROIMMUN products is Germany. From there the products – reagents, automated analysis systems and evaluation software – are delivered to over 150 countries worldwide. Other production sites are Hangzhou/China and Singapore. Both subsidiaries produce EUROIMMUN products for their own markets.

All other subsidiaries are distribution companies, which also mostly have their own laboratories for training.

Research and development

Scientific publications · Patents

For more information on this subject scan the QR code or enter the Quick Link code q113 at www.euroimmun.com

Scientific publications

Publications 2020/2021

1. Abu-Dayyeh I, Abu-Kwaik J, Weimann A, Abdelnour A. **Prevalence of IgE-mediated sensitization in patients with suspected food allergic reactions in Jordan.** Immun Inflamm Dis. 8(3):384-392 (2020).

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Scientific presentations (abstracts/posters) 2020/2021

1. Aubreville M, Bertram CA, Jabari S, Marzahl C, Klopfleisch R, Maier A. **Inter-Species, Inter-Tissue Domain Adaptation for Mitotic Figure Assessment - Learning New Tricks from Old Dogs.** Bildverarbeitung für die Medizin, virtueller Kongress (2020).

2. Bertram CA, Aubreville M, Marzahl C, Maier A, Klopfleisch R. **How Big is Big Enough? A Large-Scale Histological Dataset of Mitotic Figures.** Bildverarbeitung für die Medizin. virtueller Kongress (2020).

3. Bertram CA, Veta M, Marzahl C, Stathonikos N, Maier A, Klopfleisch R, Aubreville M. **Are Pathologist-Defined Labels Reproducible? Comparison of the TUPAC16 Mitotic Figure Dataset with an Alternative Set of Labels.** 23. International Conference on Medical Image Computing & Computer Assisted Intervention, virtueller Kongress (2020).

4. Braasch J, Ostermann S, Mackiewicz M, Liljander A, Borchardt-Lohölter V, Lattwein E, Schlumberger W. **New approach for the detection of Trichinella spiralis in slaughtered pigs.** 6. World One Health Congress, virtuelle Konferenz (2020).

5. Ehlers AM, Rohwer S, Otten HG, Brix B, Le TM, Suer W, Knulst AC. **Vicilin-like antimicrobial peptides from macadamia nut are clinically relevant allergens.** European Academy of Allergy & Clinical Immunology (EAACI), virtueller Kongress (2020).

6. Gebhardt AK, Klemens O, Sabalza M, Stiba K, Saschenbrecker S, Steinhagen K. **Comparison of enzyme-linked immunosorbent assays for the diagnosis of dengue virus infections.** 3. International Conference on Zika Virus and Aedes Related Infections, Washington DC, USA (2020).

7. Hoffmann K, Rosenstock P, Borchardt-Lohölter V, Dichtl K, Seybold U, Ormanns S, Horns H, Wagener J, Herbst V. **Diagnostic performance of a novel Aspergillus Antigen ELISA. 30.** European Congress of Clinical Microbiology & Infectious Diseases, Paris, France (2020).

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9. Marzahl C, Aubreville M, Bertram CA, Gerlach S, Maier J, Voigt J, Hill J, Klopfleisch R, Maier A. **Is crowd-algorithm collaboration an advanced alternative to crowdsourcing on cytology slides?** International workshop on Algorithmen - Systeme - Anwendungen, virtueller Workshop (2020).

10. Marzahl C, Aubreville M, Voigt J, Maier A. **Classification of leukemic B-lymphoblast cells from blood smear microscopic images with an attention-based deep learning method and advanced augmentation techniques.** IEEE International Symposium on Biomedical Imaging (ISBI), virtueller Kongress (2020).

11. Menge B, Klemens O, Klemens JM, Sabalza M, Jittmittraphap A, Leaungwutiwong P, and Steinhagen K. **Testing for specific serum IgA in addition to IgM has an added value in acute secondary dengue virus infections.** 2. Polythematic Autoimmune Congress, virtueller Kongress (2020).

12. Miske R, Scharf M, Jäger D, Hahn S, Denno Y, Bankhadra F, Rochow N, Probst C, Teegen B, Stöcker W, Komorowski L. **Identification of DAGLA as an autoantibody target in cerebellar or hippocampal degeneration.** 2. Polythematic Autoimmune Congress, virtueller Kongress (2020).

13. Moraes Soane M, Freitas Henriques D, Abreu Lima J, Caricio Martins L, Muigg N, Sabalza M, Klemens O, Steinhagen K. **Novel screening ELISA for sensitive detection of Mayaro virus-infected patients.** 3. International Conference on Zika Virus and Aedes Related Infections, Washington DC, USA (2020).

14. Pollmann M, Borchardt-Lohölter V, Moreira-Soto A, Kaya S, Gamze Sener A, Gómez-Guzmán E, Figueroa-Hernández L, Li W, Li F, Buska K, Zakaszewska K, Ziolkowska K, Janz J, Ott A, Scheper T, Meyer W. **Seroprevalences of ten ToRCH infectious pathogens in women residing in Europe, Latin America and China.** 30. European Congress of Clinical Microbiology & Infectious Diseases, Paris, France (2020).

15. Weisser H, Steinhagen K, Höcker R, Borchardt-Lohölter V, Anvari Ö, Kern PM. **Evaluation of dried blood spots as alternative sampling material for serological detection of anti-SARS-CoV-2 antibodies using established ELISAs.** ESCMID Conference on Coronavirus Disease (ECCVID), virtuelle Konferenz (2020).

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17. Braasch J, Ostermann S, Mackiewicz M, Borchardt-Lohölter V, Lattwein E, Schlumberger W. **New approach for the detection of Trichinella spiralis in slaughtered pigs.** 29th Annual Meeting of the German Society for Parasitology, virtueller Kongress (2021).

18. Dieckmann K, Menge B, Klemens O, Klemens JM, Saschenbrecker S, Jittmittraphap A, Leaungwutiwong P, Steinhagen K. **Added value of testing for specific serum IgA additionally to IgM in acute secondary dengue virus infections.** 31st European Congress of Clinical Microbiology & Infectious Diseases (ECCMID), virtueller Kongress (2021).

19. Dilberger B, Sabalza M, Schlumberger W, Dähnrich C. **Increased sensitivity for detection of IgA autoantibodies against tissue transglutaminase using a new chemiluminescence immunoassay.** 34th Meeting of Medical Laboratory Immunologists (AMLI), Austin, USA (2021).

20. Dilberger B, Sabalza M, Schlumberger W, Dähnrich C. **Increased sensitivity for detection of IgA autoantibodies against tissue transglutaminase using a new chemiluminescence immunoassay.** AACC Annual Scientific Meeting & Clinical Lab Expo, Atlanta, USA (2021).

21. Dilberger B, Schlumberger W, Dähnrich C. **Increased sensitivity for detection of IgA autoantibodies against tissue transglutaminase using a new chemiluminescence immunoassay.** 12th International Congress on Autoimmunity (ICA), virtueller Kongress (2021).

22. Feng X, Liu Y, Karl I, Ott A, Scheper T, Meyer W, Yan HP. **Diagnostic value of autoantibodies against D-3-phosphoglycerate dehydrogenase (PGDH) among patients with liver diseases.** 12th International Congress on Autoimmunity (ICA), virtueller Kongress (2021).

23. Filippis C, Binder F, Lickfeld M, Schröder AK, Klemens JM, Saschenbrecker S, Steller U. **Novel PCR test to differentiate between infections with SARS-CoV-2, Influenza A and B.** 31st European Congress of Clinical Microbiology & Infectious Diseases (ECCMID), virtueller Kongress (2021).

24. Filippis C, Binder F, Lickfeld M, Schröder AK, Klemens JM, Saschenbrecker S, Steller U. **Novel PCR test to differentiate between infections with SARS-CoV-2, Influenza A and B.** 8th Internationsl Meeting on Emerging Diseases and Surveillance (IMED), virtueller Kongress (2021).

25. Goletz S, Karl I, Probst C, Komorowski L, Schlumberger W, Zilikens D, Stöcker W, Schmidt E. **Cell-based immunofluorescence test applying recombinant laminin 332 for the serological diagnosis of pemphigoid.** 12th International Congress on Autoimmunity (ICA), virtueller Kongress (2021).

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29. Hoffmann K, Dieckmann K, Klemens JM, Saschenbrecker S, Herbst V. **Novel antigen assay for acute diagnostics of COVID-19 in the laboratory.** 31st European Congress of Clinical Microbiology & Infectious Diseases (ECCMID), virtueller Kongress (2021).

30. Hoffmann K, Dieckmann K, Klemens JM, Saschenbrecker S, Herbst V, Sabalza M. **Novel antigen assay for acute diagnostics of COVID-19 in the laboratory.** AACC Annual Scientific Meeting & Clinical Lab Expo, Atlanta, USA (2021).

31. Honorat JA, Lopez-Chiriboga AS, Kryzer TJ, Lennaon VA, Komorowski L, Scharf M, Stöcker W, Hinson SR, Pittock SJ, Klein CJ, McKeon A. **Autoimmune gait disturbance accompanying adaptor protein 3B2-IgG.** 12th International Congress on Autoimmunity (ICA), virtueller Kongress (2021).

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34. Hoxha E, Stahl RAK, Brix SR, Venkataraman I, Witte T, Brock J, Schlumberger W, Daehnrich C. **Increased sensitivity for PR3-ANCA using a novel chemiluminescence immunoassay.** AACC Annual Scientific Meeting & Clinical Lab Expo, Atlanta, USA (2021).

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38. Hoxha E, Stahl RAK, Reinhard L, Sabalza M, Kühnl A, Burmeister Y, Saschenbrecker S, Schlumberger W, Dähnrich C. **A new chemiluminescence immunoassay for phospholipase A2 receptor 1 autoantibodies allows earlier identification of relapses in patients with membranous nephropathy.** 34th Meeting of Medical Laboratory Immunologists (AMLI), Austin, USA (2021).

39. Janz J, Ott A, Lindae A, Scheper T, Schlumberger W, Meyer W. **Multiparameter assay for the detection of IgA antibodies in autoimmune gastrointestinal disease.** 12th International Congress on Autoimmunity (ICA), virtueller Kongress (2021).

40. Janz J, Ott A, Lindae A, Scheper T, Schlumberger W, Meyer W. **Multiparameter assay for the detection of IgG antibodies in autoimmune gastrointestinal disease.** 12th International Congress on Autoimmunity (ICA), virtueller Kongress (2021).

41. Janz J, Ott A, Richter M, Scheper T, Schlumberger W, Meyer W. **Addition of cN-1A as a target for detection of autoantibodies associated with Inclusion Body Myositis to a multiparameter lineblot immunoassay for autoimmune inflammatory myopathies.** 12th International Congress on Autoimmunity (ICA), virtueller Kongress (2021).

42. Janz J, Ott A, Richter M, Scheper T, Schlumberger W, Meyer W. **Addition of cN-1A as a target for detection of autoantibodies associated with Inclusion Body Myositis to a multiparameter lineblot immunoassay for autoimmune inflammatory myopathies.** AACC Annual Scientific Meeting & Clinical Lab Expo, Atlanta, USA (2021).

43. Kühnl A, Burmeister Y, Sabalza M, Saschenbrecker S, Komorowski L, Probst C, Pesce G, Schlumberger W, Dähnrich C. **Novel Anti-ATP4B ELISA to aid the diagnosis of autoimmune gastritis.** 34th Meeting of Medical Laboratory Immunologists (AMLI), Austin, USA (2021).

44. Kühnl A, Burmeister Y, Sabalza M, Saschenbrecker S, Komorowski L, Probst C, Pesce G, Schlumberger W, Dähnrich C. **Novel Anti-ATP4B ELISA to aid the diagnosis of autoimmune gastritis.** AACC Annual Scientific Meeting & Clinical Lab Expo, Atlanta, USA (2021).

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46. Langer N, Wilken D, Klemens O, Dolscheid-Pommerich R, Renn M, Streeck H, Kümmerer BM, Schulte B, Frank K, Karl A, Klemens JM, Saschenbrecker S, Hartmann G, Steinhagen K. **Correlation between quantitative anti-SARS-CoV-2 IgG ELISA and neutralization tests.** 31st European Congress of Clinical Microbiology & Infectious Diseases (ECCMID), virtueller Kongress (2021).

47. Markewitz R, Pauli D, Dargvainiene J, Steinhagen K, Engel S, Herbst V, Zapf D, Krüger C, Sharifzadeh S, Schomburg B, Leypoldt F, Rupp J, Görg S, Junker R, Wandinger KP. **No evidence for short-term induction of antinuclear antibodies by vaccination with BNT162b2 and mRNA-1273.** 15th Dresden Symposium on Autoantibodies, Dresden, Germany (2021).

48. Menge B, Klemens JM, Mentz J, Dieckmann K, Saschenbrecker S, Tran KH, Hetherington M, Steinhagen K. **Sensitive detection of antibodies in patients with acute Coxiella burnetii infection.** World Microbe Forum, Congress of the American Society for Microbiology (ASM) and the Federation of European Microbiological Societies (FEMS), virtueller Kongress (2021).

49. Menge B, Klemens JM, Mentz J, Dieckmann K, Saschenbrecker S, Tran KH, Hetherington M, Steinhagen K. **Sensitive detection of antibodies in patients with acute Coxiella burnetii infection.** 8th International Meeting on Emerging Diseases and Surveillance (IMED), virtueller Kongress (2021).

50. Miske R, Mindorf S, Ott A, Borowski K, Jäger D, Honnorat J, McKeon A, Teegen B, Probst C, Komorowski L. **Detection of anti-AK5 autoantibodies in patients with limbic encephalitis by indirect immunofluorescence assay and line blot.** 15th Dresden Symposium on Autoantibodies, Dresden, Germany (2021).

51. Miske R, Scharf M, Hahn S, Denno Y, Benkhadra F, Rochow N, Probst C, Teegen B, Stöcker W, Komorowski L. **Identification of DAGLA as an autoantibody target in cerebellar or hippocampal degeneration.** 12th International Congress on Autoimmunity (ICA), virtueller Kongress (2021).

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54. Ott A, Scharf M, Miske R, Jäger D, Honnorat J, Komorowski L, Scheper T, Meyer W. **Parallel detection of antibodies against CDR2L and CDR2 increases the diagnostic specificity in serological diagnostics of paraneoplastic cerebellar degeneration.** 15th Dresden Symposium on Autoantibodies, Dresden, Germany (2021).

55. Pollmann M, Klemens O, Klemens JM, Saschenbrecker S, Steinhagen K. **Development of a novel NS1-based ELISA for the detection of specific IgG antibodies against Japanese encephalitis virus.** 23nd Annual Meeting of the European Society for Clinical Virology (ESCV), virtueller Kongress (2021).

56. Pollmann M, Ott A, Liefeld M, Borchardt-Lohölter V, Scheper T, Meyer W. **Novel line blot differentiates between IgG antibodies against three SARS-CoV-2 antigens and against further seasonal coronaviruses.** 23nd Annual Meeting of the European Society for Clinical Virology (ESCV), virtueller Kongress (2021).

57. Schäfer J, Menge B, Dibbern J, Borchardt-Lohölter V, Steinhagen K, Schlumberger W. **Novel ELISA based on purified and recombinant antigens from Toxocara canis exhibits a high diagnostic sensitivity.** 29th Annual Meeting of the German Society for Parasitology, virtueller Kongress (2021).

58 Schäfer J, Menge B, Stiba K, Dibbern J, Borchardt-Lohölter V, Steinhagen K, Schlumberger W. **Novel ELISA based on purified and recombinant antigens from Toxocara canis exhibits a high diagnostic sensitivity.** 8th Internationsl Meeting on Emerging Diseases and Surveillance (IMED), virtueller Kongress (2021).

59. Scharf M, Miske R, Denno Y, Probst C, Jäger D, Borowski K, Teegen B, Komoroski L. **Strategy for the detection of anti-septin antibodies by indirect immunofluorescence assay.** 15th Dresden Symposium on Autoantibodies, Dresden, Germany (2021).

60. Stiba K, Menge B, Klemens O, Klemens JM, Saschenbrecker S, Jittmittraphap A, Leaungwutiwong P, Steinhagen K. **Added value of testing for specific serum IgA additionally to IgM in acute secondary dengue virus infections.** 23nd Annual Meeting of the European Society for Clinical Virology (ESCV), virtueller Kongress (2021).

61. Stiba K, Klemens O, Pollmann M, Klemens JM, Saschenbrecker S, Steinhagen K. **Development of a novel NS1-based ELISA for the detection of specific IgG antibodies against Japanese encephalitis virus.** 31st European Congress of Clinical Microbiology & Infectious Diseases (ECCMID), virtueller Kongress (2021).

62. Van Beers J, Damoiseaux J, Jobsen M, Dähnrich C, Kühnl A, Schlumberger W. **Routine application of PR3- and MPO-ANCA chemiluminescence immunoassays demonstrates enhanced detection rates.** 15th Dresden Symposium on Autoantibodies, Dresden, Germany (2021).

63. Venkataraman I, Pollmann M, Ott A, Liefeld M, Borchardt-Lohölter V, Scheper T, Meyer W. **Novel line blot differentiates between IgG antibodies against three SARS-CoV-2 antigens and against further seasonal coronaviruses.** AACC Annual Scientific Meeting & Clinical Lab Expo, Atlanta, USA (2021).

64. Villalta D, Alessio MG, Previtali G, Infantino M, Manfredi M, Agatea L, Favaro E, Kühnl A, Dähnrich C, Schlumberger W. **Novel chemiluminescence immunoassays for serological diagnostics of coeliac disease.** 15th Dresden Symposium on Autoantibodies, Dresden, Germany (2021).

65. Vink C, van de Logt AE, Kühnl A, Dähnrich C, Schlumberger W, Wetzels J. **Relevance of anti-PLA2R levels in therapy decision and prediction of therapy outcome using cyclophosphamide and sterods treatment in patients with membranous nephropathy.** 15th Dresden Symposium on Autoantibodies, Dresden, Germany (2021).

66. Weisser H, Steinhagen K, Höcker R, Borchardt-Lohölter V, Anvari Ö, Kern PM. **Dried blood spots: a robust sample material for detection of anti-SARS-CoV-2 antibodies.** Valuable tool in the context for seroprevalence and vaccination studies. 31st European Congress of Clinical Microbiology & Infectious Diseases (ECCMID), virtueller Kongress (2021).

67. Weisser H, Steinhagen K, Höcker R, Borchardt-Lohölter V, Anvari Ö, Kern PM. **Dried blood spots are an alternative sampling material for detection of anti-SARS-CoV-2 antibodies.** 30th Annual Meeting of the Society for Virology (GfV), virtueller Kongress (2021).

68. Wolf J, Rockstroh A, Kalbitz S, Pollmann M, Rosenstock P, Steinhagen K, Borte S. **Correlation between binding and neutralising antibodies against SARS-CoV-2 with respect to the severity and phase of COVID-19.** 23nd Annual Meeting of the European Society for Clinical Virology (ESCV), virtueller Kongress (2021).

69. Zeng Z, Miske R, Scharf M, Denno Y, Probst C, Teegen B, Ott A, Komorowski L. **Identification of NVL as a novel ANA target in systemic sclerosis.** 15th Dresden Symposium on Autoantibodies, Dresden, Germany (2021).

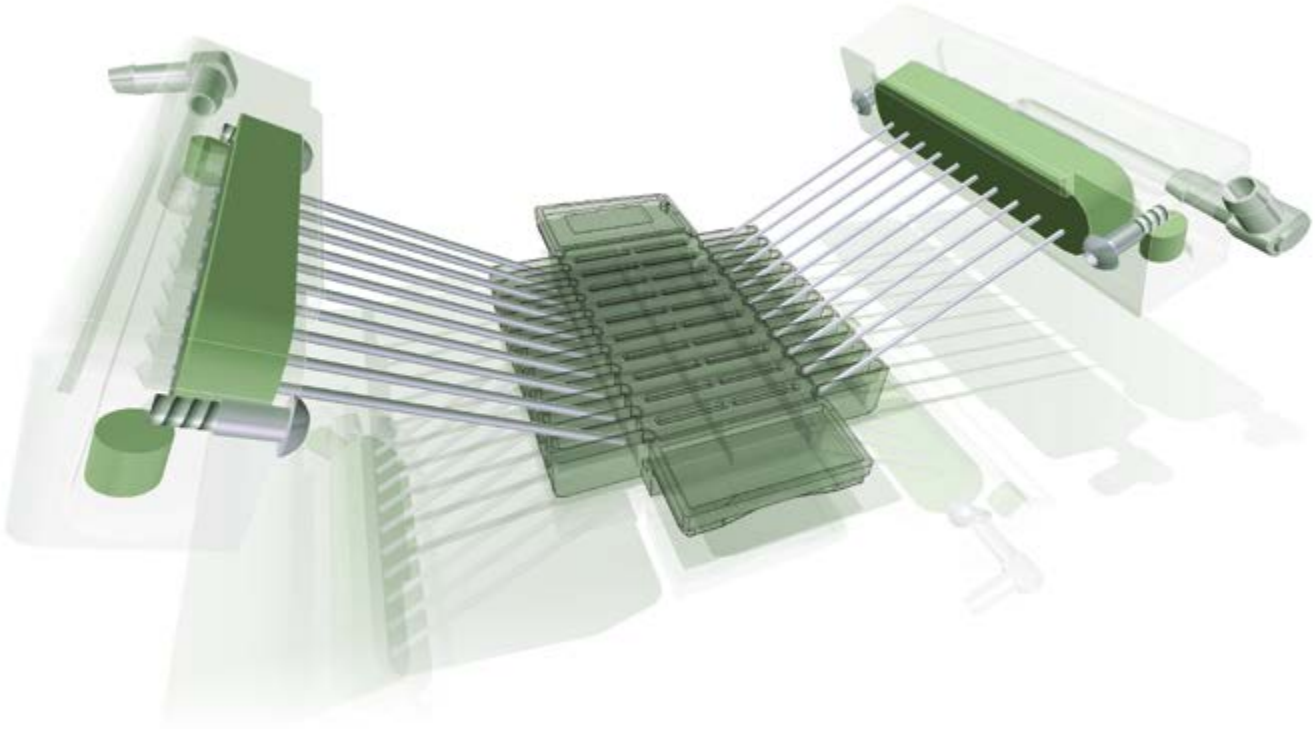
Research and development

For more information on this subject scan the QR code or enter the Quick Link code q114 at www.euroimmun.com

Patents

To ensure investments in research and development, EUROIMMUN again filed numerous patent applications for inventions by employees in 2021.

For patents from previous years, the patent protection was maintained and expanded through follow-up applications in the respective priority year. The applications concern developments in instrument and process engineering as well as new antigens for the diagnosis of autoimmune and infectious diseases. In addition, the trademark portfolio was supplemented by national and international trademark applications.



Published Patent Applications 2021

1. Becker A, Schoch McGovern S. **Detection of an autoantibody.** European and US patent applications EP3786641 (filed in 2020) and US2021/0063393A1 (filed in 2020).

2. Bernitt E, Feirer C, Rateike M, Stöcker W, Schwab S. **Device and method for identification of cover glass areas of a slide.** European and International patent applications EP3839596 (filed in 2019) and WO2021/122888 (filed in 2020).

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4. Dettmann IM, Stegelmann C, Probst C, Radzimski C, Mindorf S. **Method for the detection of autoantibody to acetylcholine receptor.** European and Singaporean patent applications EP3842802 (filed in 2020) and 10202012737T (filed in 2020).

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12. Menge B, Steinhagen K, Schaefer J, Probst C, Deerberg A, Unger M, Messing C. **A novel assay for the diagnosis of nematode infections.** European, Chinese and US patent application EP3761029 (filed in 2020), CN112180096A (filed in 2020) and US2021/0003591A1 (filed in 2020).

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17. Steinhagen K, Messing C, Lattwein E, Stiba K, Lindhorst F, Neugebauer E, Müller M, Corman V. **Methods and reagents for diagnosis of SARS-CoV-2 infection.** European, German, Spanish, International, Chinese, Japanese, Canadian and US patent applications EP3869199 (filed in 2020), EP3869200 (filed in 2020), EP3809137A1 (filed in 2021), DE21158065T1 (filed in 2021), ES21158065T1 (filed in 2021), WO2021/165448A1 (filed in 2021), CN113557431A (filed in 2021), JP2021167805A (filed in 2021), CA3109607A1 (filed in 2021) and US2021/0190797A1 (filed in 2021).

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Detection methods

Sample collection & Preanalytics

Dried blood spots (DBS)

For more information on this subject scan the QR code or enter the Quick Link code q172 at www.euroimmun.com

Dried Blood Spots (DBS): Sample collection at home – analysis in the lab

Dried blood has been used as a sample material for in vitro diagnostic analysis since the mid 1960s, especially in newborn screening and, over the past decades, has become a standard in this field. Moreover, dried blood is applied in drug screenings, doping controls and in therapeutic drug monitoring. It is also more and more used in antibody and antigen diagnostics. Therefore, EUROIMMUN developed **the first CE-labelled blood collection set**. It contains all materials that are required for collection and sending of dried capillary blood samples. Patients can collect the sample themselves from their fingertip by using the set, or the collection can be performed by medical professionals. The dried capillary blood samples are an excellent alternative to venous blood samples and can be analysed subsequently in the lab, e.g. for antibodies against SARS-CoV-2.

- **Sample collection at home by the patient possible**, no medical staff required

- **Simple handling:** Capillary blood is collected by a prick in the finger, dropped onto the EUROIMMUN blood collection card and air-dried.

- **Minimally invasive method**, a simple alternative to venous blood sampling

- **Reduction / elimination of biological risks**: According to the US Department of Transportation (DOT), the International Air Transporter Association (IATA) and the World Health Organisation (WHO), dried blood spots are released medical specimens which do not require any special protective measures.

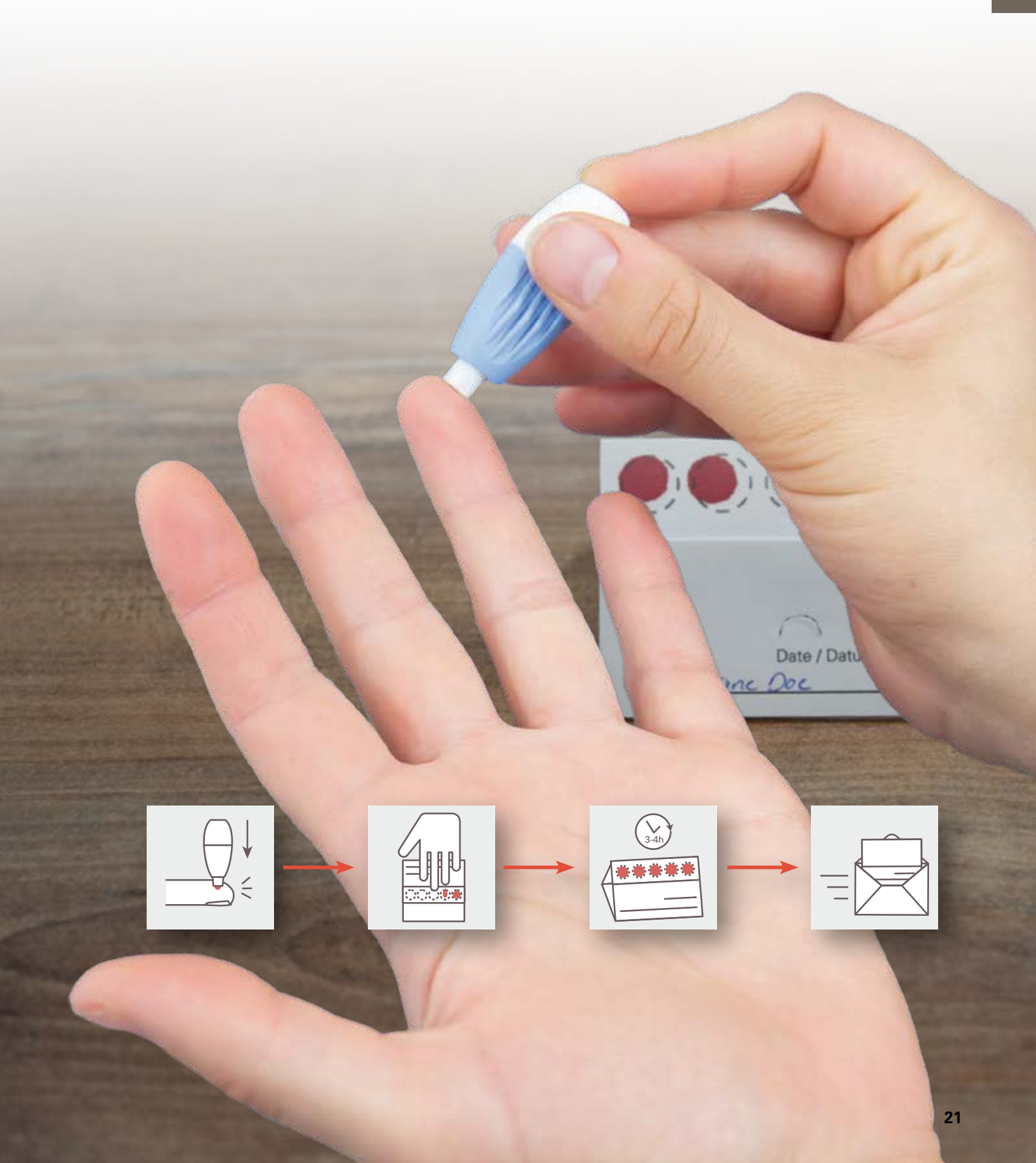
- **Samples can be shipped by post without any additional cooling. High stability** demonstrated for a large number of analytes

- **Quantification possible,** punches with a defined diameter allow exact determination of the collected blood volume

- **Complete automation of all process steps possible** (see page 60)

- **Application** of DBS samples **validated** in combination with the ELISAs for the detection of IgG antibodies against SARS-CoV-2 (see page 176)

- **Feasibility studies performed for the determination of a large number of analytes,** e.g. vitamin D, antibodies against CCP, gliadin, Borrelia, measles virus, mumps virus, Rubella virus, TBE virus and Zika virus, as well as all allergens of the Atopy screen test (allergy)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Indirect immunofluorescence

EUROIMMUN IFT: unrivalled quality and diversity

For more information on this subject scan the QR code or enter the Quick Link code q115 at www.euroimmun.com

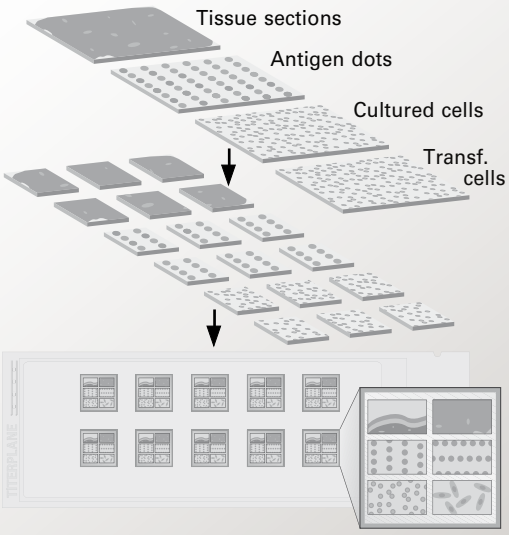
EUROIMMUN IFT: unrivalled quality and diversity

Immunofluorescence tests from EUROIMMUN: high-tech, not old-fashioned! Numerous innovations contribute to the standardisation and modernisation of indirect immunofluorescence:

■ **Activation technique:** Physically or chemically activated cover glasses are coated with cultured cells or tissue sections. Frozen tissue sections are fixed to the glass surface by covalent bonding. This increases the adhesion by more than 100 fold, preventing detachment of the sections.

■ **BIOCHIP Technology:** Cover glasses coated with biological substrates are cut mechanically into millimetre-sized fragments (BIOCHIPs). Ten or more first-class preparations of consistent quality can be obtained per tissue section, for cultured cell substrates even several thousands.

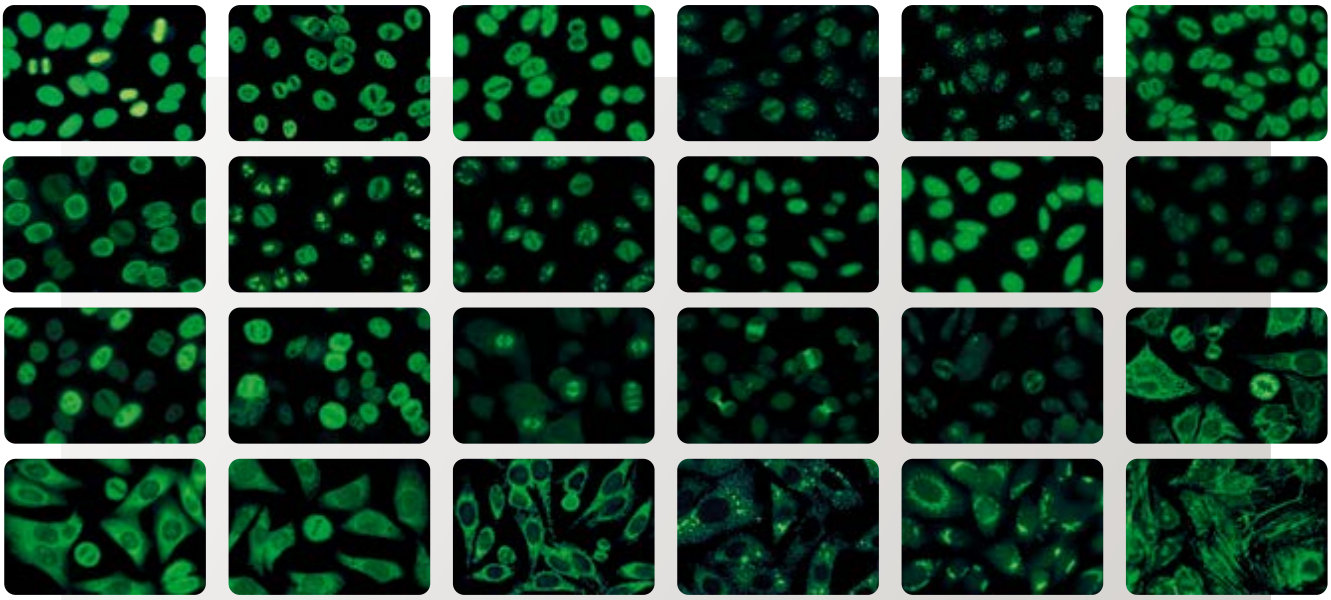
■ **BIOCHIP Mosaics:** When multiple BIOCHIPs coated with different substrates are arranged in one reaction field, antibodies against various organs or infectious agents can be investigated simultaneously. Comprehensive antibody profiles can be easily established (multiplex) and the results are verified reciprocally on different substrates.



BIOCHIP Technology and Mosaics

■ **TITERPLANE Technique:** The samples or reagents are first pipetted onto the reaction fields of a reagent tray. The slides are then placed into recesses of the reagent tray, where all BIOCHIPs come into contact with the liquids, and the individual reactions begin simultaneously. As the fluids are confined in a closed space, there is no need for a conventional humidity chamber.

■ **Automation:** EUROIMMUN offers a range of IFT automation options for both low and high throughput, from sample dilution to fully automated evaluation of fluorescence images, including archiving.



Indirect immunofluorescence: one substrate (here: HEp-2 cells) – many antibodies to investigate

Microtiter ELISA

EUROIMMUN ELISA: quantitative and precise

For more information on this subject scan the QR code or enter the Quick Link code q116 at www.euroimmun.com

EUROIMMUN ELISA: quantitative and precise

When precision is needed: Antibody detection using ELISA provides quantitative results – ideally suited for monitoring disease courses and interpreting borderline results.

- **Optimised for fully automated processing**

- **Simple handling:**
  Break-off microplate wells
  Ready-to-use reagents (no mixing or diluting necessary)
  Bar- and colour-coded reagents, largely exchangeable between different lots and between different parameters
  Standardised incubation conditions for the majority of parameters

- **RF absorbent** included in sample buffer (IgM tests) – no extra costs

- **Incubation protocols** for all tests integrated in EUROIMMUN Analyzers:
  no additional programming necessary

- **Comprehensive validation** of test systems for EUROIMMUN Analyzers

- **Detailed validation documents** available for virtually all parameters

- **Over 800 parameters** – all test systems from one manufacturer:
  >70 autoantibody parameters
  >120 infectious parameters
  >650 allergy parameters

Chemiluminescence immunoassays (ChLIA)

EUROIMMUN ChLIA: Random access with chemiluminescence immunoassays

For more information on this subject scan the QR code or enter the Quick Link code q116 at www.euroimmun.com

EUROIMMUN ChLIA: Random access with chemiluminescence immunoassays

Immunoassays for autoimmune, infection and allergy diagnostics and antigen detection

- **Bead technology:** Antigens are immobilised on the surface of magnetic particles. The detection of the immunological reaction between antigen and specific antibodies in patient serum is based on a chemical reaction which leads to a quantitative emission of light, the so-called chemiluminescence.

- **Fast analyses:** The ChLIA technology allows even shorter reaction times compared to immunoenzymatic methods, so that the total duration of the analysis amounts to less than 30 minutes.

- **Optimised for fully automated processing:** The patient samples can be processed fully automatically, from pipetting to result evaluation – also in connection with a sample line.

- **Simple and safe handling:** Ready-for-use reagent cartridges and calibrators and automated transmission of quality control data via RFID chips enable error-free and quick loading with little manual effort.

- **Efficient workflows:** Optimal processing on random access instruments, with continuous loading of samples and processing of emergency (STAT) samples. EUROIMMUN ChLIA tests enable quantification of test results based on a calibration curve which is stable over several weeks, so that capacities and reagents are saved.

- **Broad dynamic analysis range:** Owing to the high signal intensity at high sensitivity and specificity, the EUROIMMUN ChLIA tests allow quantification of antibodies from very low to very high concentrations based on the saved calibration curve.

EUROIMMUN
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EUROASSAY

Line blots in chip format

For more information on this subject scan the QR code or enter the Quick Link code q117 at www.euroimmun.com

Line blots in chip format

Easy handling through incubation using the TITERPLANE Technique, **reliable and simple evaluation**:

- **Several patient samples** can be analysed next to each other and simultaneously **on one slide**.

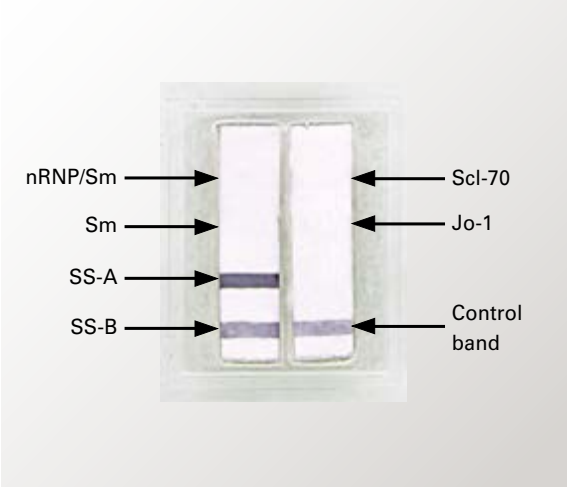
- **Quick results:** The total time for analysis is 100 minutes. During washing the reagents are pipetted onto the reagent tray for the next incubation step. All incubation steps are carried out at room temperature. Shaking of the slides and reagent tray on a rotary shaker provides optimal sensitivity.

- **Low consumption of reagents:** 50 µl of diluted serum or reagent solution per application is sufficient.

- **At a glance:** Results are evaluated visually, thus there are no investment costs for photometers or similar devices. The antigen lines are located at precisely defined positions. Correct performance of the individual incubation steps is indicated by staining of the control band. Positive and negative results can be distinguished from each other reliably and easily. The intensity of bands generally correlates with the antibody titer.

- **Monospecific:** The antigens used are purified antigens which are mostly isolated by affinity chromatography. The membrane strips do not contain any superfluous proteins that might lead to unspecific positive results.

- **Archivable:** Incubated EUROASSAY slides can be stored for long periods, with easy documentation of results.



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EUROIMMUN
ANTI-ENA PROFILPLUS,
EUROASSAY
ANTI-DSDNS

EUROLINE

Line blots for comprehensive antibody profiles

For more information on this subject scan the QR code or enter the Quick Link code q118 at www.euroimmun.com

Multiparameter line blots for comprehensive antibody profiles

Uncomplicated test performance, reliable and simple evaluation:

- **Quick:** The total time for analysis is 105 minutes. All incubation steps are carried out at room temperature.

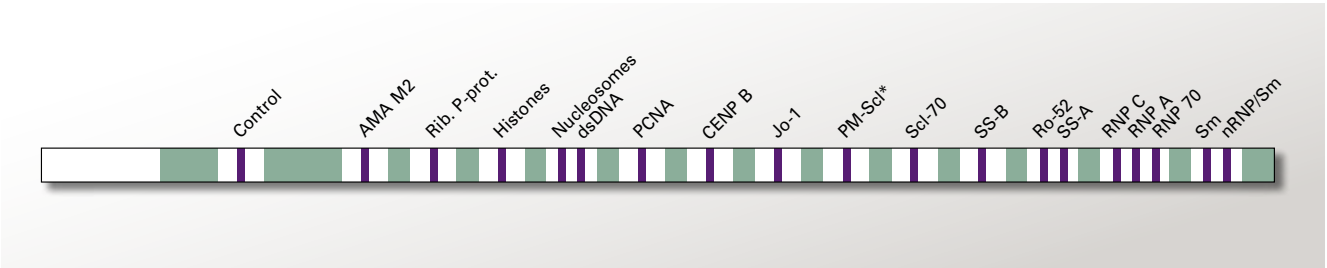
- **Automatable incubation:** with EUROBlotOne or EUROBlotMaster.

- **Secure:** The antigen lines are located at precisely defined positions. Correct performance of the individual incubation steps is indicated by staining of the control band contained on each EUROLINE test strip. Positive and negative results can be distinguished from each other reliably and easily. The intensity of bands correlates with the antibody titer.

- **Monospecific:** The antigens used are purified antigens, mostly isolated by affinity chromatography, or antigen extracts. The membrane strips do not contain superfluous proteins that may lead to unspecific positive results.

- **Multiparameter analysis:** The use of an antigen spectrum that is specifically tailored to the diagnostic requirements increases the serological detection rate.

- **Evaluation:** The EUROLineScan program developed by EUROIMMUN allows standardised evaluation of EUROLINE test strips, easy data management and detailed documentation of results. First, the incubated EUROLINE test strips are scanned by a flatbed scanner or photographed by a camera system. EUROLineScan recognises the position of the strips, even if they have been placed inexactly, identifies the bands, and measures their intensity. Finally, the results are saved together with the image data and a separate results sheet can be issued for each patient. EUROLineScan can be integrated easily into EUROLabOffice or any other LIMS for optimal data communication.



Bor-M / 97 - 25
Bor-G / 5- 40
Bor-G / 5- 38
Bor-G / 5- 37
Bor-G / 5- 36
EBV-2/ 136- 91

Westernblot/EUROLINE-WB

Reliable differentiation with Westernblots

For more information on this subject scan the QR code or enter the Quick Link code q119 at www.euroimmun.com

Reliable differentiation with Westernblots

High diagnostic value:

- **Quick:** Total time for analysis is around 115 minutes. All incubation steps are carried out at room temperature.

- **Automatable incubation:** with EUROBlotOne or EUROBlotMaster.

- **Precise evaluation:** The bands are identified by means of a lot-specific evaluation template provided with each test kit. Each electrophoresis gel has a unique lot number. Thus, mix-up between bands is prevented.

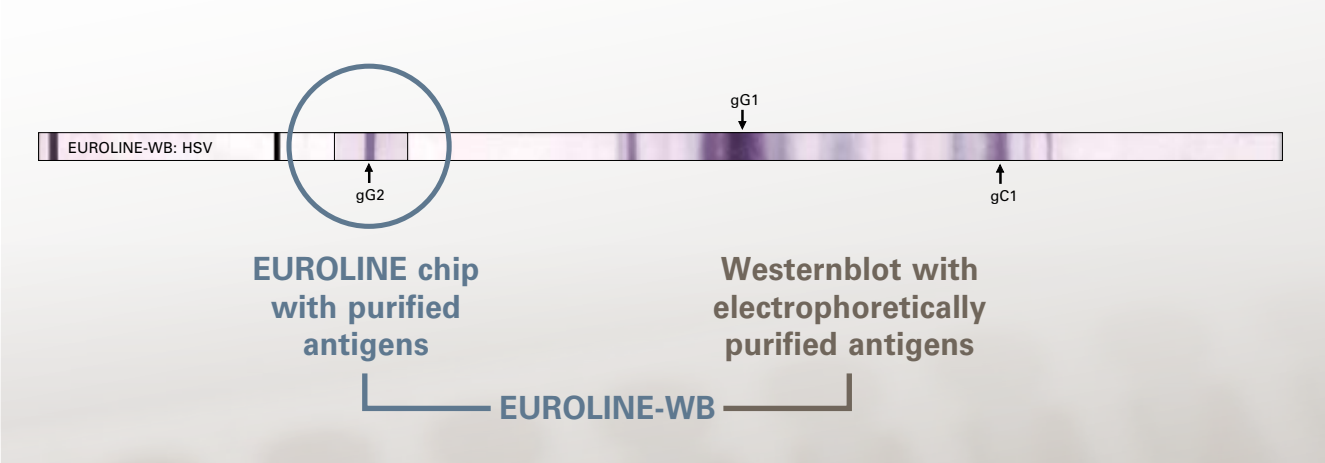
- **Secure:** Each test kit comes with a positive blot strip from the same strip lot, which has been incubated with a reference serum. The incubation of a positive control serum can thus be omitted. The blot strips are numbered to avoid mix-ups. No extra labelling is needed. Correct performance of the individual incubation steps is indicated by staining of a control band on the lower end of the strip.

- **Qualitative:** Positive und negative reactions can be distinguished from each other reliably and easily. The intensity of the bands generally correlates with the antibody titer.

- **Method of choice:** in cases in which positive results from a screening test (indirect immunofluorescence or microplate ELISA) need confirmation or differentiation.

- **EUROLINE-WB** is a **combination of Westernblot and line blot**: Proteins from a whole-antigen extract are separated by gel electrophoresis according to molecular mass and transferred onto a nitrocellulose membrane (Westernblot). Highly purified native or recombinant antigens are then applied as lines to the Westernblot strips (EUROLINE membrane chips).

- **Evaluation:** The EUROLineScan program developed by EUROIMMUN allows standardised evaluation of Westernblot-based test strips, easy data management and detailed documentation of results. First, the incubated Westernblot and EUROLINE-WB test strips are scanned by a flatbed scanner or photographed by a camera system. EUROLineScan recognises the position of the strips, even if they have been placed inexactly, identifies the bands, and measures their intensity. Finally, the results are saved together with the image data and a separate results sheet can be issued for each patient. EUROLineScan can be integrated easily in EUROLabOffice or any other LIMS for optimal data communication.


EUROLINE-WB: HSV
gG2
gG1
gC1
EUROLINE chip with purified antigens
Westernblot with electrophoretically purified antigens
EUROLINE-WB

EUROArray

Molecular diagnostics with EUROArrays

For more information on this subject scan the QR code or enter the Quick Link code q120 at www.euroimmun.com

Molecular genetic diagnostics with EUROArrays

Simple test performance, correct results:

■ **EUROArrays are based on BIOCHIP technology:** Quality-controlled batch production of EUROArrays guarantees faultless arrays for exact and reliable diagnostics.

■ **DNA isolation – quicker using the direct method:** Genomic DNA can be extracted with the direct method in a very time- and cost-saving manner. The sample is simply mixed with two extraction reagents provided in the test kit and can then be used directly in the PCR.

■ **Ready-for-use PCR components:** All required reagents are contained in the test kit. No extra components must be purchased. The minimised number of pipetting steps allows quick, efficient and error-free test performance.

■ **EUROArray hybridisation – simple and robust:** The established TITERPLANE Technique allows standardised and simple hybridisation of PCR products with the EUROArray.

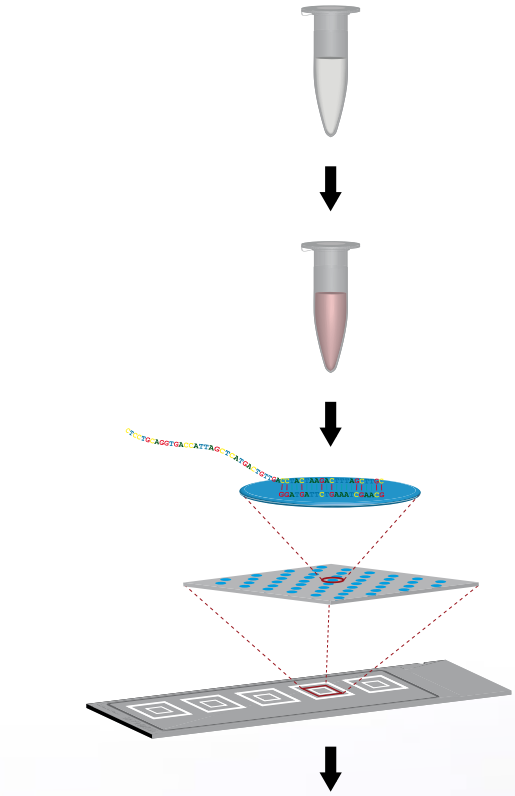
■ **Fully automated, standardised evaluation, generation of results and archiving:** Incubated EUROArrays can be automatically evaluated in a very short time using the EUROArrayScan evaluation system. Only around 5 seconds are required per sample. The evaluation is standardised and correct – results are not dependent on subjective interpretation.

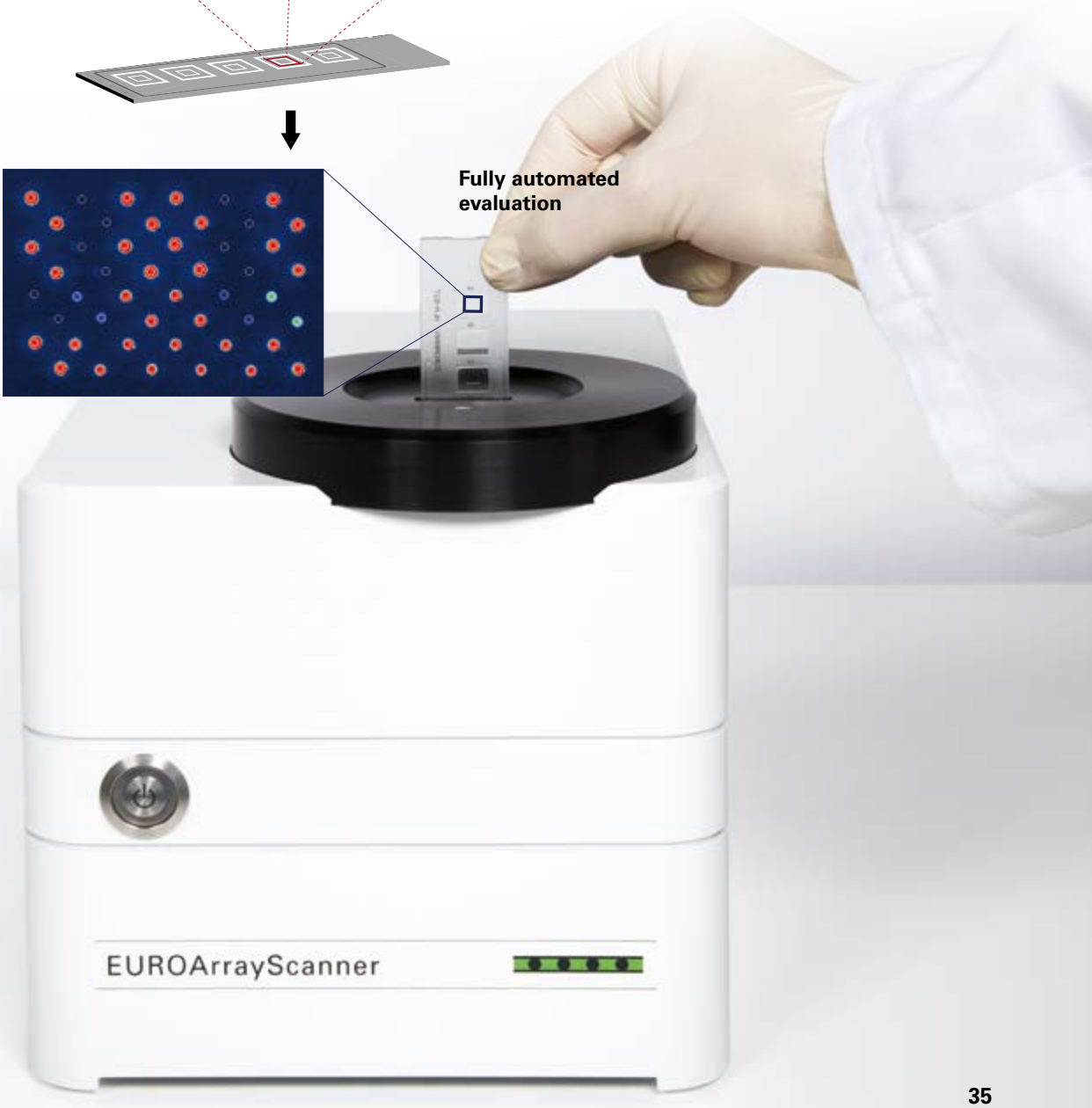
■ **Integrated controls ensure correct test performance:** Many integrated controls ensure the correct test performance for each individual analysis and help to monitor e.g. the sample quality, the rigour of the hybridisation reaction and the absence of cross contamination.

■ **Complete process validated in accordance with IVD directive and CE label:** From sample preparation to issueing of results – DNA extraction, test reagents, EUROArrays, EUROArrayScan evaluation system – the complete process, including evaluation, is validated.

■ **One platform for all applications:** Single-parameter, low-multiplex and high-multiplex analyses are reliable and precise with the EUROArray system.

■ **LIMS connection available:** The EUROArrayScan software is equipped for simple import and export of data and test results.


DNA sample
PCR (polymerase chain reaction)
DNA microarray hybridisation
Fully automated evaluation


EUROArrayScanner

EURORealTime

EUROIMMUN's expert solution for real-time PCR diagnostics

For more information on this subject scan the QR code or enter the Quick Link code q154 at www.euroimmun.com

EUROIMMUN's expert solution for real-time PCR diagnostics

Simple performance and evaluation with highest result reliability

■ **Fully automated, standardised evaluation, reporting and documentation:** The EURORealTime Analysis Software provides fast, fully automated and objective evaluation of all raw data, including all internal and external controls. Subjective definitions of cut-offs or calculations for the quantification of pathogens are not required.

■ **Convenient guidance through the entire procedure:** Pipetting schemes which are automatically generated by the EURORealTime Analysis Software help to prevent mistakes.

■ **Specific detection of infectious pathogens by Real-Time PCR:** Pathogen-specific primers and probes guarantee exact and reliable direct detection of infectious pathogens based on their gene sequence (DNA/RNA). In addition to the purely qualitative determination, also pathogen quantification in the raw material is possible in selected parameters.

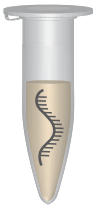
■ **Complete determination in one reaction vessel also for RNA viruses:** With viruses with RNA genome, the required reverse transcription and the real-time PCR detection take place in the same preparation.

■ **Minimised number of pipetting steps owing to ready-for-use PCR components:** All required reagents are included, no extra components must be purchased.

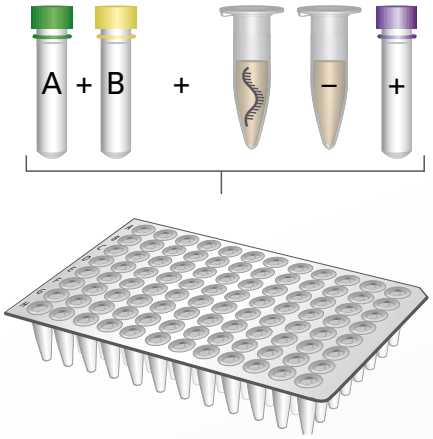
■ **Integrated controls ensure the reliability of the results:** Inhibition and extraction controls to check the efficiency of the nucleic acid isolation and PCR in every preparation and external positive and negative controls to confirm the validity of the entire run.

■ **Complete procedure validated according to IVD directive, CE-labelled:** All steps of the procedure and evaluation are validated (test reagents, EURORealTime Analysis Software).

■ **Prepared LIMS connectivity:** The EURORealTime Analysis Software is set up for simple import and export of data and test results.



RNA/DNA sample



Real-time PCR

Fully automated evaluation and documentation

RIA

EUROIMMUN RIA: high-performance classic

For more information on this subject scan the QR code or enter the Quick Link code q121 at www.euroimmun.com

EUROIMMUN RIA: high-performance classic

Radioimmunoassays (RIA/IRMA) from EUROIMMUN are robust and reliable:

- **Fast, simplified test performance** with short incubation times, few wash steps and mostly ready-for-use reagents.
- **Highly specific** through use of optimal antigens and highly suited, established antibodies.
- **Secure quality management** through supplied controls (including kit-specific reference range) for evaluation of the test.
- **Large measurement ranges** with very good calibration reduces the need for repeat measurements with other sample dilutions and increases result retrieval.
- **Comprehensive range of separation methods:** coated tubes (CT), precipitation (P), magnetic separation (MS), polyethylene glycol precipitation (PEG).
- **Excellent correlation** with comparable test systems using the same analytical specifications.

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Automation

EUROIMMUN
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Indirect immunofluorescence

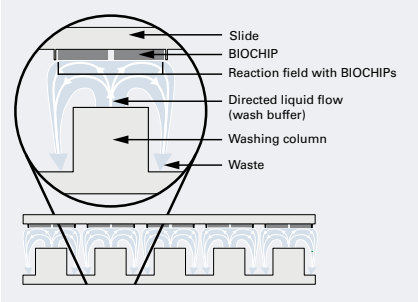
MERGITE! · Sprinter · ELW IFA · UNIQO 160 · EUROStar · EUROPattern Microscope Live · EUROPattern

For more information on this subject scan the QR code or enter the Quick Link code q144 at www.euroimmun.com

MERGITE!

MERGITE! enables fully automated, standardised washing of IIFT slides. The compact table-top device utilises a directed but gentle liquid flow, which washes up to 50 substrate fields with consistent quality and without damage to the substrates. The use of carriers allows convenient switching between incubation and wash stations with just one hand maneuver and without the slides drying out. MERGITE! is equipped with an integrated touch screen and does not require an additional PC.

- **No risk of cross contamination** between substrate fields due to field-by-field washing with directed and controlled liquid flows
- **High reproducibility** due to the standardised, gentle MERGITE! washing procedure with defined wash programs



- **Easy and efficient handling** of slides, reagent racks and cover glasses through use of carriers
- **Reduction of required working steps** – no beakers, cuvettes and drying of slides required

- **Compact tabletop device** with integrated touch screen
- **Convenient operation** and minimal familiarisation time due to intuitive and user-friendly interface

Product overview

Device	Description	Order number
MERGITE! 10	For up to 5 slides each with 10 reaction fields	YG 0064-0101-1
MERGITE! 50	For 1 slide with 50 reaction fields	YG 0064-0101-2

Indirect immunofluorescence

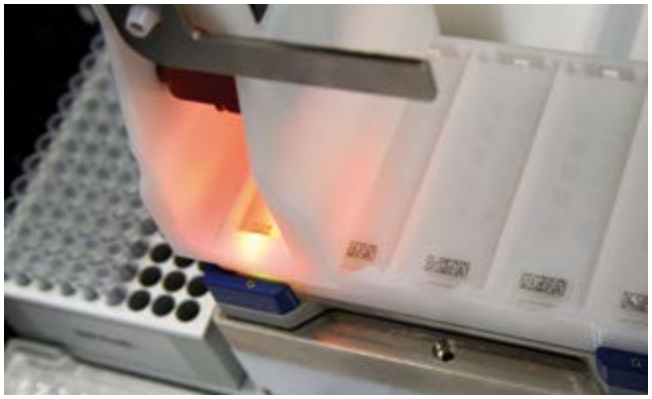
For more information on this subject scan the QR code or enter the Quick Link code q040 at www.euroimmun.com

Sprinter

With the IF Sprinter and the Sprinter XL, EUROIMMUN offers flexible solutions for fully automated processing of immunofluorescence tests. The devices perform identification, dilution and transfer of samples, as well as all washing and incubation steps.

Both instruments are available in different configurations depending on the requirements of the laboratory. They can also be used as combination devices for processing of ELISAs.

- **Flexible systems** for fully automated processing of ELISA and immunofluorescence tests on one device
- **Reliability and traceability** due to standard integrated barcode reader for sample identification and the fully automated identification of slides via matrix codes (optional)
- **Efficient pipetting without carryover** using one (IF Sprinter) or four (Sprinter XL) washable pipetting needles
- **Simplification of work processes** in routine laboratories due to user-friendly data communication with an LIS or EUROLabOffice 4.0
- **Variable instrument configuration** for different laboratory requirements with up to 96, 160 or 240 samples and up to 30 slides or six microplates (Sprinter XL), or 15 slides or two microplates (IF Sprinter) in one run



Product overview

Device	Description	Order number
IF Sprinter IIFT	IIFT automation for up to 96 samples, up to 15 slides	YG 0032-0101
IF Sprinter IIFT/ELISA	IIFT/ELISA automation for up to 96 samples, up to 15 slides/2 microplates	YG 0032-0101-3
Sprinter XL 160 IIFT	IIFT automation for up to 160 samples, up to 30 slides, 4 washable needles	YG 0033-0101-5
Sprinter XL 160 IIFT/ELISA	IIFT/ELISA automation for up to 160 samples, up to 30 slides/6 microplates, 4 washable needles, with incubator	YG 0033-0101-3
Sprinter XL 240 IIFT	IIFT automation for up to 240 samples, up to 30 slides, 4 washable needles	YG 0033-0101-25
Sprinter XL 240 IIFT/ELISA	IIFT/ELISA automation for up to 240 samples, up to 30 slides/6 microplates, 4 washable needles, with incubator	YG 0033-0101-23

Indirect immunofluorescence

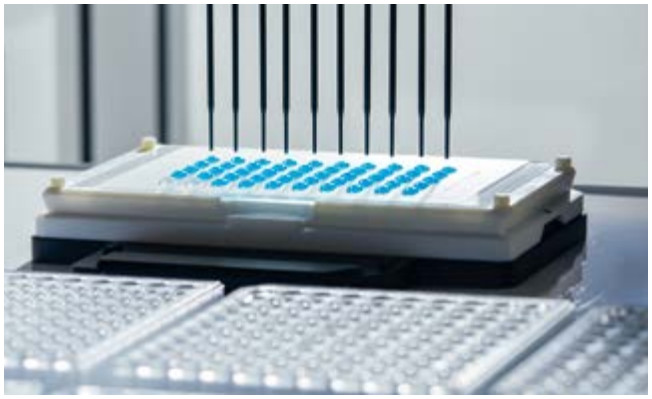
MERGITE! · Sprinter · ELW IFA · UNIQO 160 · EUROStar · EUROPattern Microscope Live · EUROPattern

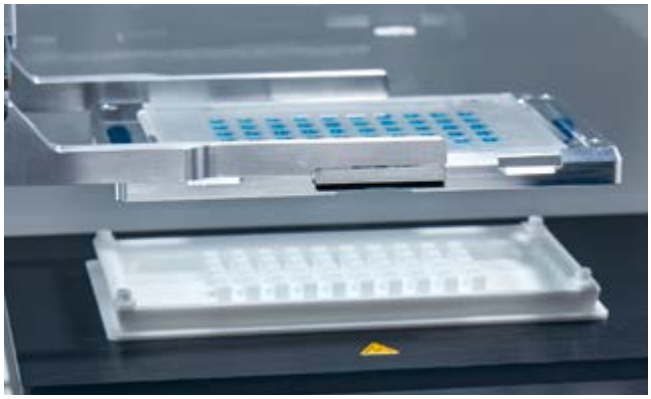
For more information on this subject scan the QR code or enter the Quick Link code q151 at www.euroimmun.com

EUROLabWorkstation IFA

The EUROLabWorkstation IFA provides fully automated and standardised processing of EUROIMMUN immunofluorescence tests with the highest capacity and efficiency for laboratories with a high sample throughput. Up to 750 substrate fields and more than 700 samples can be analysed at high throughput with just one worklist. In the slide washing process, the established TITERPLANE Technique is complemented by the MERGITE! washing technology. This ensures brilliant fluorescence signals without background for the automatically mounted slides. The software can be operated conveniently and intuitively via touch screen and guides the user through the entire process. Complete traceability is guaranteed at all times, since the matrix codes of the slides and the barcodes of samples, reagents and accessories are automatically detected in each step of the process.

- **Fully automated processing** of EUROIMMUN immunofluorescence tests from primary sample to mounted slide
- **Highest capacity** of up to 750 substrate fields and more than 700 samples in a single worklist
- **Highest efficiency** due to 10 washable pipetting needles and complementary accessories, as well as separation of pipetting and transport steps for flexible time management
- **Flexible workflows** owing to freely selectable loading of the 45 tracks with samples, reagents and dilution plates
- **Brilliant fluorescence signals** with the unique MERGITE! washing technology – each substrate field is washed without the risk of cross contamination using directed liquid flow in a standardised and gentle procedure





Product overview

Device	Description	Order number
EUROLabWorkstation IFA	Fully automated IIFT processing from primary sample to mounted slide for up to 750 substrate fields and more than 700 samples	YG 0852-0101

Indirect immunofluorescence

MERGITE! · Sprinter · ELW IFA · UNIQO 160 · EUROStar · EUROPattern Microscope Live · EUROPattern

For more information on this subject scan the QR code or enter the Quick Link code q175 at www.euroimmun.com

UNIQO 160

The UNIQO 160 provides full IIFT automation of the next generation – from the primary sample to the microscopy result with only one instrument. This all-in-one solution maximises the efficiency of the entire IIFT process, encompassing sample preparation, incubation, washing and mounting of slides as well as image acquisition and analysis. Via the interface to the EUROLabOffice 4.0 middleware, the indirect immunofluorescence with the UNIQO 160 can integrate seamlessly into the efficient workflows of diagnostic laboratories.

Up to 160 primary samples and 18 slides can be processed in one run on the compact benchtop device. During loading, samples, reagents and slides are automatically identified and assigned by their barcodes. As the slides are protected from drying out by automated mounting after incubation, brilliant fluorescence images are produced from the first to the last sample, even with large worklists. The integrated high-quality microscope with automatically changing objectives (4x, 10x, 20x) ensures optimal recording parameters for each product. This enables reliable result and titer proposals from the automated evaluation based on artificial intelligence.

- **Fully automated processing system** from primary sample to evaluated fluorescence image for up to 160 samples and 18 slides
- **Flexible loading** as well as complete traceability of samples, reagents and slides through automated barcode registration
- **Brilliant fluorescence images** due to automatically mounted slides and the integrated high-quality microscope unit with automatically changing objectives (4x, 10x, 20x)
- **Automatically generated result proposals** based on state-of-the-art artificial intelligence methods and convenient evaluation in EUROLabOffice 4.0

Product overview

Device	Description	Order number
UNIQO 160	Fully automated IIFT processing from primary sample to evaluated fluorescence image for up to 160 samples and 18 slides per run	YG 2900-0101

Indirect immunofluorescence

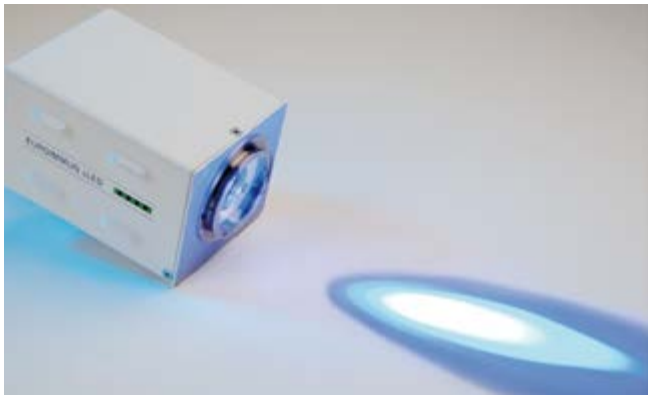
MERGITE! · Sprinter · ELW IFA · UNIQO 160 · EUROStar · EUROPattern Microscope Live · EUROPattern

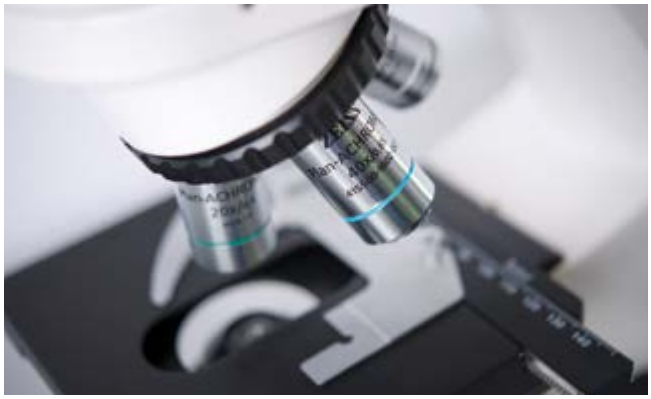
For more information on this subject scan the QR code or enter the Quick Link code q025 at www.euroimmun.com

EUROStar III Plus

The LED fluorescence microscope EUROStar III Plus has been precisely tailored to the requirements of indirect immunofluorescence – superfluous, and in some cases expensive components have been intentionally dispensed with. A camera can be attached directly to the integrated photo tube for capturing digital images. Switching between the ocular and the camera is no longer necessary owing to the convenient 50/50 beam splitter. EUROIMMUN also offers the highly functional EUROPicture software for the displaying and handling of the digital images. The EUROStar III Plus includes a halogen lamp as standard equipment for normal transmitted light microscopy in bright and dark field and can be upgraded for phase contrast work.

- **Constant fluorescence excitation** due to regulated LED for reliable and reproducible results
- **Long life span** of over 50,000 hours, low current consumption and full light intensity immediately after being switched on
- **Environmentally friendly** without mercury
- **cLED available as separate module** for equipping various other microscopes
- **Screen diagnostics and digital image acquisition** using optional camera with EUROPicture software
- **50/50 beam splitter** for microscopy without switching between the oculars and the optional camera





Product overview

Device	Description	Order number
EUROStar III Plus	Fluorescence LED microscope with constant, controlled light intensity, convenient 50/50 beam splitter, transmitted light microscopy, optional camera and image recording software EUROPicture, optional dark field and phase contrast	YG 0306-0101-3
EUROIMMUN cLED	Fluorescence LED light source with constant, controlled light intensity, suitable for most Zeiss microscopes with an HBO fixture	YG 0331-0101

Indirect immunofluorescence

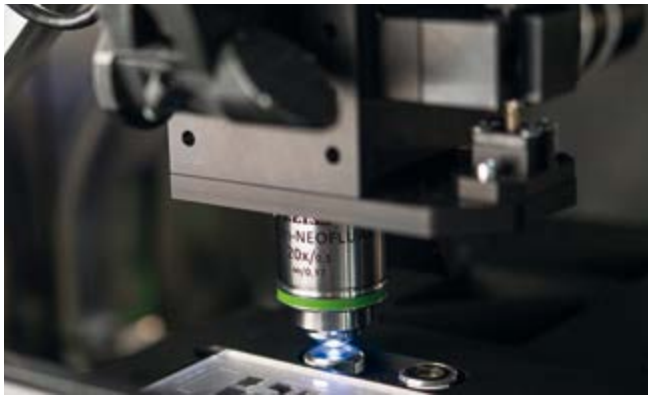
MERGITE! · Sprinter · ELW IFA · UNIQO 160 · EUROStar · EUROPattern Microscope Live · EUROPattern

For more information on this subject scan the QR code or enter the Quick Link code q159 at www.euroimmun.com

EUROPattern Microscope Live

The EUROPattern Microscope Live is a fully automated immunofluorescence system which only needs two seconds to process an image. This enormous speed is supplemented by greatest convenience in the operation of EUROLabOffice 4.0 for the evaluation of immunofluorescence images directly at the computer screen. The intuitive touch screen user interface allows the user to directly zoom in on the image or to change the position during live microscopy. Moreover, it is possible for several users to view the images simultaneously at the screen – no discussion bridge is required. Up to 50 reaction fields are loaded into the microscope at once. Using the 20x objective, a high-resolution camera and high-quality optic components, a large number of substrates can be automatically viewed at the microscope, e.g. tissues, HEp-2 cells, Crithidia, granulocytes and antigen-expressing cells. Focusing is performed fully automatically by a new laser focusing technology. A self-regulating long-life LED as excitation source and the automated microscope calibration based on an integrated fluorescence standard ensure consistent immunofluorescence signal intensity.

- **Fully automated image recording and advanced on-screen reporting** – no darkroom required
- **Ultra-fast processing in only 2 seconds per image**
- **Convenient control of the EUROPattern Microscope Live as well as efficient input of results** directly in EUROLabOffice 4.0
- **Automated result proposals** based on state-of-the-art artificial intelligence methods
- **Easy live microscopy** with on-screen multi-touch navigation and zooming
- **Reliability and traceability** owing to automatic identification of slides via matrix codes



Product overview

Device / software	Description	Order number
EUROPattern Microscope Live	Fast, automated live microscopy with LIS connection and convenient result input	YG 0371-0101

Indirect immunofluorescence

MERGITE! · Sprinter · ELW IFA · UNIQO 160 · EUROStar · EUROPattern Microscope Live · EUROPattern

For more information on this subject scan the QR code or enter the Quick Link code q023 at www.euroimmun.com

EUROPattern

The EUROPattern Suite automates immunofluorescence microscopy (slide transport, image recording and archiving and interpretation of immunofluorescence images), providing support and improvement in diagnostic result reporting. As a module of the laboratory management software EUROLabOffice 4.0, EUROPattern can be flexibly integrated into any laboratory environment. The high speed of the system and the minimisation of manual handling enable EUROPattern to be employed for standardised IIFT diagnostics even at the highest of throughput requirements. The EUROPattern Suite consists of a fully automated microscope with a slide magazine (500 reaction fields per loading) together with a sophisticated pattern recognition software, which not only provides classification in terms of "positive" and "negative" for a large variety of substrates, but also reliably recognises the different ANA and ANCA patterns.

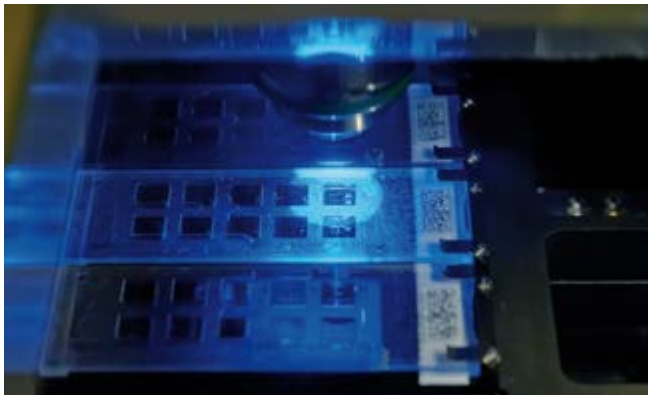
- **Automated microscopy and advanced on-screen reporting** for a multitude of EUROIMMUN IIFT products – no darkroom required

- **Automatically generated result proposals** based on state-of-the-art artificial methods for or ANA (including mixed patterns), ANCA, tissues, *Crithidia* and antigen-expressing cells

- **Long walk-away time** due to high loading capacity and automated processing of up to 500 reaction fields in one run

- **High-throughput immunofluorescence microscopy** – over 250 fluorescence images can be recorded and automatically evaluated in just one hour

- **Reliability and traceability** due to automatic identification of slides via matrix codes



Product overview

Device / software	Description	Order number
EUROPattern	Complete system for computer-aided immuno-fluorescence microscopy (CAIFM); fast automated microscopy, image acquisition and pattern recognition incl. mixed patterns and corresponding titers	YG 0075-0101-1

Microtiter ELISA

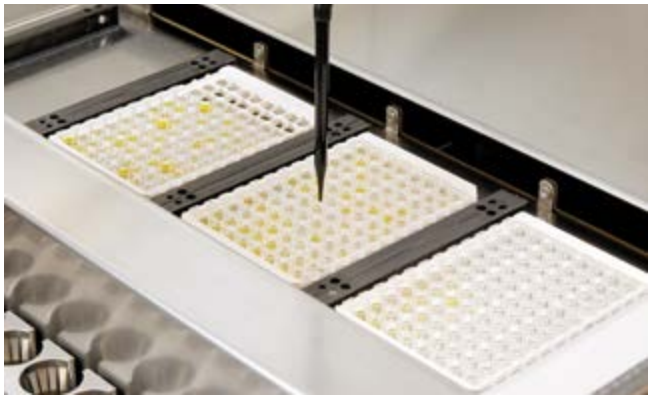
EUROIMMUN Analyzer · EUROLabWorkstation ELISA · Dried Blood Spots (DBS)

For more information on this subject scan the QR code or enter the Quick Link code q017 at www.euroimmun.com

EUROIMMUN Analyzer

The EUROIMMUN Analyzer I and EUROIMMUN Analyzer I-2P are systems for fully automated ELISA processing and ensure an optimal routine operation. The combination of EUROIMMUN ELISAs and the EUROIMMUN Analyzer I or I-2P enables a quick and simple, but also secure start of the worklist, owing to the automatic recognition and assignment of reagents. The EUROIMMUN Analyzer I-2P is designed for small to medium sample throughput and the EUROIMMUN Analyzer I for medium to high sample throughput.

- **Fully automated ELISA processing** for various sample volumes with minimal hands-on time
- **Flexible open system** also for ELISA kits from different manufacturers
- **High reliability and traceability** due to automatic identification of barcodes of patient samples and ready-to-use reagents
- **Fast processing** on the EUROIMMUN Analyzer I of up to 70 tests per hour (up to 7 plates and 180 samples per run) and on the EUROIMMUN Analyzer I-2P of up to 50 tests per hour (up to 3 plates and 144 samples per run) possible
- **Convenient operation** of the software, including scanning of QC certificates using a 2D-hand barcode scanner



Product overview

Device	Description	Order number
EUROIMMUN Analyzer I-2P	Fully automated ELISA processing for up to 3 microplates	YG 0015-0101
EUROIMMUN Analyzer I	Fully automated ELISA processing for up to 7 microplates	YG 0014-0101

Microtiter ELISA

EUROIMMUN Analyzer · EUROLabWorkstation ELISA · Dried Blood Spots (DBS)

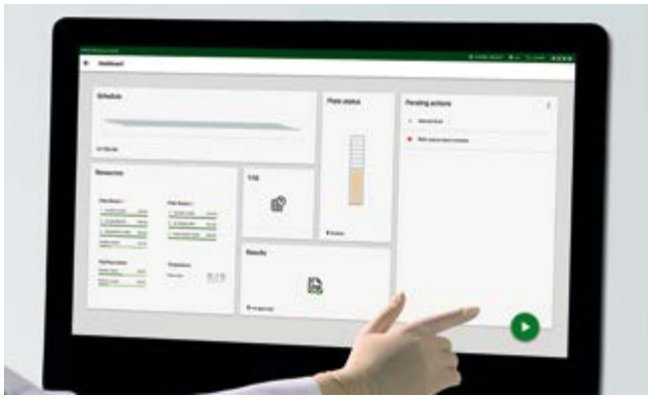
For more information on this subject scan the QR code or enter the Quick Link code q141 at www.euroimmun.com

EUROLabWorkstation ELISA

The EUROLabWorkstation ELISA is a fully automated complete solution for processing ELISA kits in laboratories with high sample throughput. The system was developed by EUROIMMUN with a focus on efficiency and flexibility, in order to accommodate the ever increasing sample numbers and changing dynamics in the routine laboratory.

Ten washable needles and complementary consumables as well as a separate robotic arm for handling of the ELISA plates enable unparalleled sample throughput. The state-of-the-art, intuitive software guides the user graphically through all work steps.

- **Fully automated processing of ELISA** from primary sample to result
- **Highest capacity** of up to 15 ELISA plates and more than 700 samples in a single worklist
- **High throughput** of more than 200 tests per hour possible
- **Flexible open system** also for ELISA kits from different manufacturers
- **Minimal hands-on time and complete traceability of results** due to recognition of barcodes and matrix codes of samples, reagents, consumables and ELISA plates



Product overview

Device	Description	Order number
EUROLabWorkstation ELISA	Fully automated high-throughput ELISA processing (over 700 samples and 15 ELISA plates possible)	YG 0851-0101

Microtiter ELISA

EUROIMMUN Analyzer · EUROLabWorkstation ELISA · Dried Blood Spots (DBS)

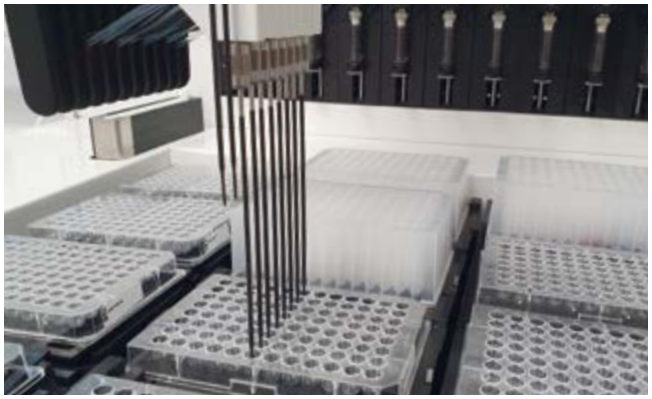
For more information on this subject scan the QR code or enter the Quick Link code q171 at www.euroimmun.com

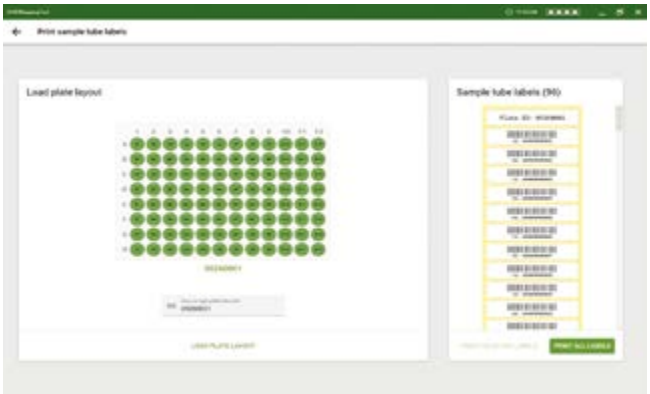
Dried Blood Spots (DBS)

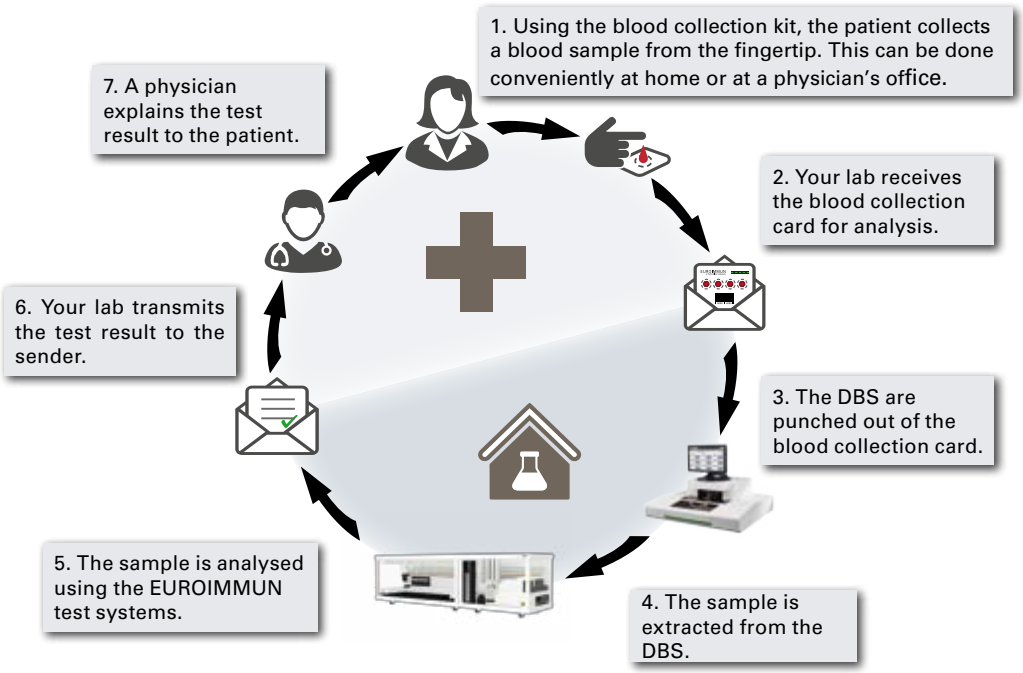
EUROIMMUN's product portfolio in combination with PerkinElmer instruments enables fully automated processing of serological tests based on dried blood spots (DBS) as sample material. Capillary blood, collected from the fingertip, is applied onto barcoded blood collection cards which allow complete traceability of the sample over the entire process. There are various automation solutions available, both for punching out the DBS (e.g. PerkinElmer DBS Puncher® or Panthera-Puncher™ 9) and automated test processing, which are suitable for every laboratory size and sample throughput.

The analysis of DBS extracts with EUROIMMUN ELISAs can be performed conveniently and safely using, for instance, the EUROLabWorkstation ELISA, the EUROIMMUN Analyzer I or I-2P or the Sprinter XL, thanks to optimised workflows and consumables. For automated processing of immunoblot strips, the EUROBlotMaster and EUROBlotOne instruments are available. The communication with the LIS is established either directly via the respective instrument software, or conveniently via the EUROLabOffice middleware, which allows optimal channelling and display of all information.

- **Complete traceability** from the sample card to the final result
- **Flexible and scalable automation solutions** for all laboratory sizes and sample throughputs
- **Clear result overview** including documentation and archiving of all relevant patient information by the optional middleware EUROLabOffice 4.0







Product overview

Device	Description	Order number
EUROLabWorkstation ELISA	Fully automated high-throughput ELISA (more than 700 samples and up to 15 ELISA plates possible)	YG 0851-0101
EUROMappingTool	Translation of plate barcodes into sample tube barcodes	YG 9730-0101
EUROIMMUN Analyzer I-2P	Fully automated ELISA processing for up to three microplates	YG 0015-0101
EUROIMMUN Analyzer I	Fully automated ELISA processing for up to seven microplates	YG 0014-0101
Sprinter XL 160 IIFT/ELISA Sprinter XL 240 IIFT/ELISA	IIFT/ELISA automation for up to 160/240 samples, up to 30 slides/six microplates, four washable needles, with incubator	YG 0033-0101-3 YG 0033-0101-23
EUROBlotMaster EUROBlotMaster 44	Blot processor for up to 30/44 EUROIMMUN blot strips	YG 0151-0101 YG 0151-0101-1
EUROBlotOne	Fully automated blot processing, up to 44 samples or strips for autoimmune, infection and allergy parameters	YG 0153-0101

Chemiluminescence

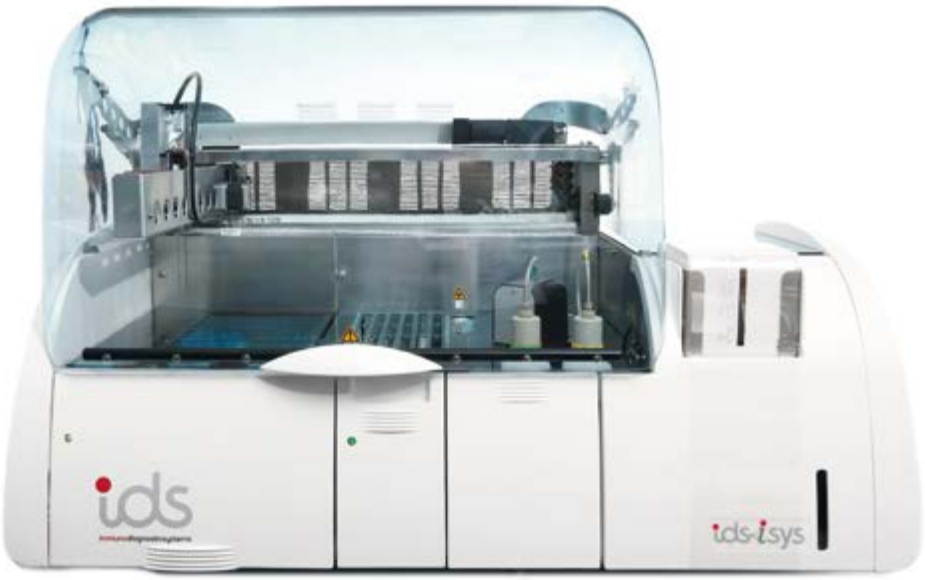
IDS-i10 and IDS-iSYS

For more information on this subject scan the QR code or enter the Quick Link code q152 at www.euroimmun.com

IDS-i10 and IDS-iSYS

The random access instruments IDS-i10 and IDS-iSYS are compact solutions for automated processing of chemiluminescence immunoassays (ChLIA) for autoimmune, allergy and infection diagnostics as well as antigen detection. The possibility of loading the samples continuously – with the IDS-i10 also via connection to a lab track system – means that each patient sample can be processed as a single determination with miminal effort and short reaction times. In addition, the preferred processing of emergency (STAT) samples gives laboratories with different requirements and sample volumes unparalleled flexibility in their laboratory routine.

- **Random access instruments** for batch, continuous and STAT loading
- **Minimal calibration effort** owing to stored master curves
- **Connection to a laboratory track system** possible for the IDS-i10
- **Autoimmune, allergy and infection parameters as well as antigen detection** on one instrument
- **Short reaction times** for fast and reliable results in just 25 minutes (depending on the test)
- **High throughput** of up to 120 samples per hour
- **Convenient and reliable operation** due to barcode recognition of samples and test and lot-specific information including stored standard curve



Product overview

Device	Description	Order number
IDS-i10	Random access instrument for chemiluminescence immunassays (ChLIA) for the analysis of up to 60 samples and 10 parameters	IS-810400
IDS-iSYS	Random access instrument for chemiluminescence immunassays (ChLIA) for the analysis of up to 120 samples and 15 parameters	IS-310400

Immunoblots

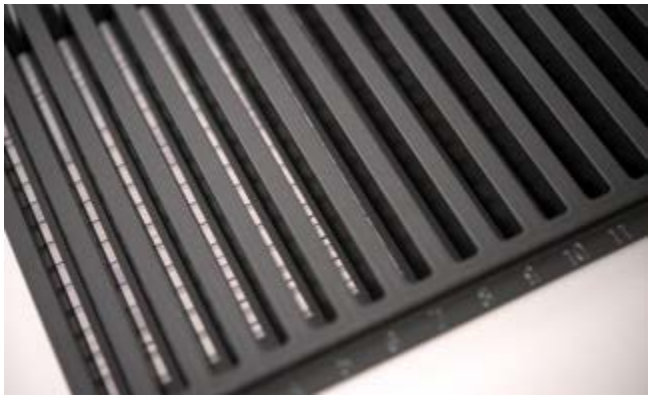
EUROBlotMaster · EUROLineScan · EUROBlotOne · Microwell Imager

For more information on this subject scan the QR code or enter the Quick Link code q015 at www.euroimmun.com

EUROBlotMaster

The EUROBlotMaster and the EUROBlotMaster 44 are compact benchtop devices for processing EUROIMMUN blot strips (EUROLINE, EUROLINE-WB, Westernblot). Following the software-guided loading of reagents, blot strips and samples, the devices perform all incubation and wash steps of the work protocol, as well as the dispensing of buffers, conjugates and substrate and stop solutions. Different conjugates and tests for autoimmune, infection and allergy diagnostics can be combined in one run. EUROBlotMaster devices have an integrated display with a membrane keyboard and do not require an additional PC. They are convenient and simple to operate using six keys and require minimal daily maintenance of five minutes at most.

- **Flexible automation for all EUROIMMUN blot strips** (EUROLINE, EUROLINE-WB, Westernblot)
- **Standardised processing** for better precision and reproducibility
- **Combination** of autoimmune, infection and allergy diagnostics on one device
- **Two models available:** up to 30 or up to 44 strips per run
- **Easy operation** using menu navigation on the integrated display
- **Combination** of different conjugates/tests in one run
- **Compact benchtop device** with low space requirement



Product overview

Device	Description	Order number
EUROBlotMaster	Blot processor for up to 30 EUROIMMUN blot strips	YG 0151-0101
EUROBlotMaster 44	Blot processor for up to 44 EUROIMMUN blot strips	YG 0151-0101-1

Immunoblots

EUROBlotMaster · EUROLineScan · EUROBlotOne · Microwell Imager

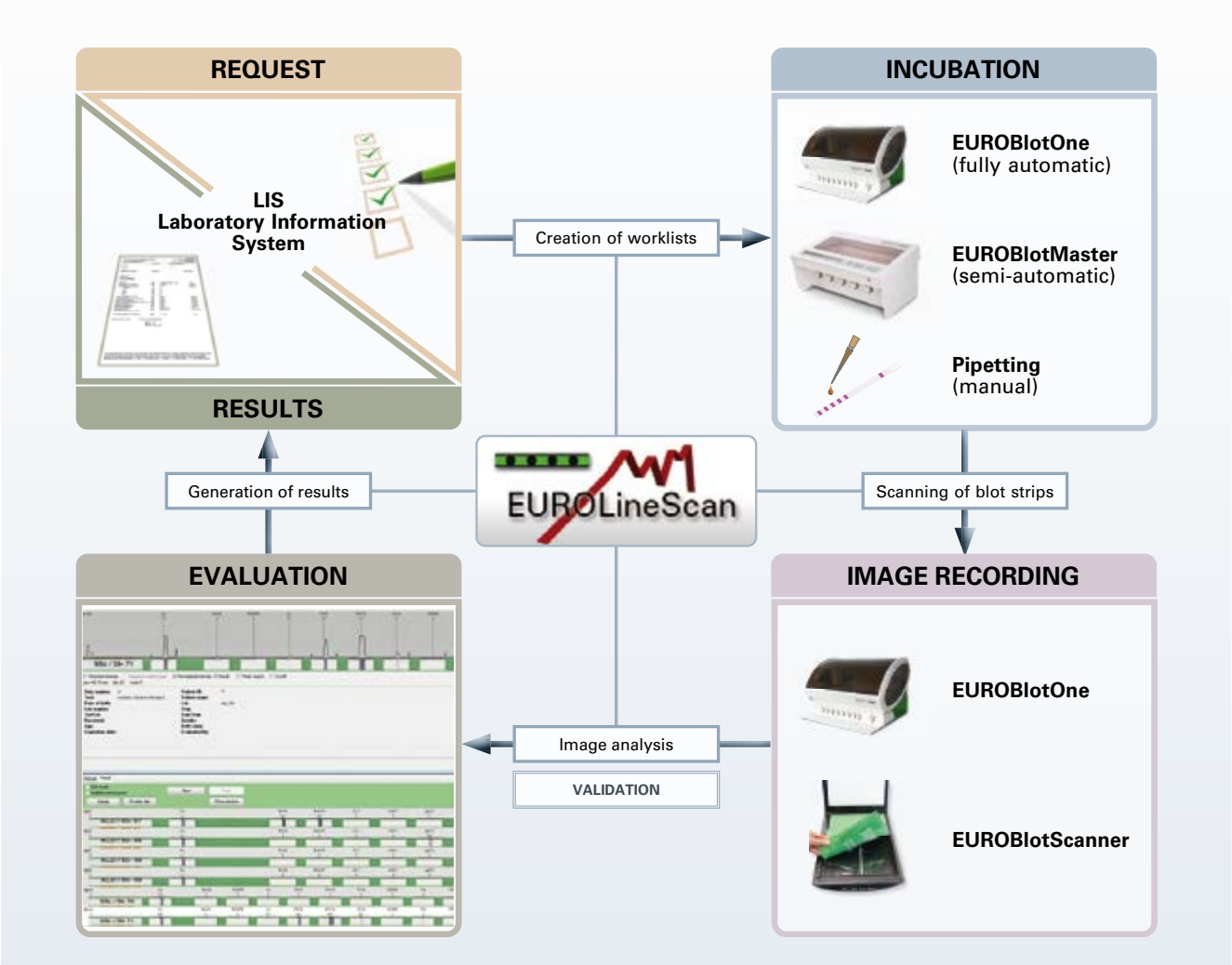
For more information on this subject scan the QR code or enter the Quick Link code q022 at www.euroimmun.com

EUROLineScan

The EUROLineScan software performs fully automated quantitative evaluation of EUROIMMUN blot strips, and administration and electronic archiving of the individual data. Moreover, EUROLineScan simplifies the incubation procedure by generating clearly laid out work protocols – also when connected to a laboratory information system (LIS) or EUROLabOffice 4.0.

The incubated strips or slides are scanned from a work protocol using a flatbed scanner (EUROBlotScanner), or by means of a camera system (EUROBLineCamera) while still in the incubation tray. EUROLineScan automatically recognises the position of the strips, identifies the bands and measures their intensity. The user can view the results and images of the strips in an overview and in a detailed individual view in order to verify the suggested results. The results are then saved automatically together with the image data. In this way, it is no longer necessary to archive the incubated (and potentially infectious) strips.

- **Automated evaluation system** for all EUROIMMUN blot strips (EUROLINE, EUROLINE-WB, Westernblot) for autoimmune, infection and allergy diagnostics – also Immunoblot-PreQ
- **Electronic archiving** of all images and data – it is no longer necessary to store the incubated blot strips
- **Secure and convenient data communication** via connection to an LIS or EUROLabOffice
- **Individual configuration options** for selection windows and print layouts
- **Data security** due to personalised user management
- **Additional quality control** through EUROLINE validation strips



Product overview

Device / software	Description	Order number
EUROLineScan	Fully automated identification, quantification, evaluation and archiving of incubated blot strips, support for protocol generation	YG 0006-0101
EUROBlotScanner	Fast digitisation using flatbed scanner	YG 0102-0101

Immunoblots

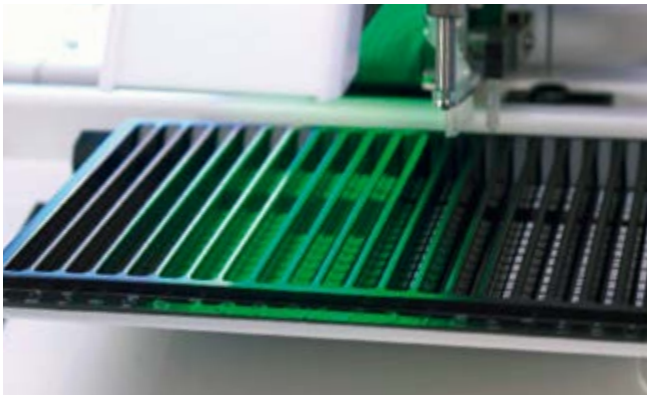
EUROBlotMaster · EUROLineScan · EUROBlotOne · Microwell Imager

For more information on this subject scan the QR code or enter the Quick Link code q016 at www.euroimmun.com

EUROBlotOne

The EUROBlotOne is a compact benchtop device for complete processing of immunoblots. Following the fast and convenient software-guided loading, the system performs the identification and dilution of samples as well as all incubation and wash steps. Eight reagent channels allow the combination of tests from autoimmune and infection diagnostics in one run. The incubated strips are then automatically dried, photographed and evaluated using the EUROLineScan software. The test requests and results can be communicated bidirectionally via LIS or EUROLabOffice 4.0.

- **Fully automated system** for the processing of up to 44 immunoblots in one run – from sample identification to the final result
- **Integrated drying unit** for fast evaluation of strips and high reproducibility of results
- **Highest security** through automatic barcode identification of samples
- **Flexible combination** of autoimmune and infection parameters in one run and autoimmune, infection and allergy diagnostics on one device
- **Intuitive software** for secure and convenient operation
- **Reliable automated evaluation** of blot strips with the EUROLineScan software



Product overview

Device	Description	Order number
EUROBlotOne	Fully automated blot processing, up to 44 samples or strips for autoimmune, infection and allergy parameters	YG 0153-0101

Immunoblots

EUROBlotMaster · EUROLineScan · EUROBlotOne · Microwell Imager

For more information on this subject scan the QR code or enter the Quick Link code q177 at www.euroimmun.com

Microwell Imager

The Microwell Imager is a compact benchtop device for automated image recording in EUROMicroblot analyses. As part of the workflow, the Microwell Imager provides acquisition of images of the wells. The EUROMicroblots, miniaturised immunoblots in microplate format, combine the advantages of blot and ELISA technologies in one product and are processed in exactly the same way as classical ELISAs. In fully automated high-throughput diagnostics, depending on the parameter tested, both screening by ELISA and confirmation by EUROMicroblot can be carried out with just one automated incubation system.

The EUROMicroblots are incubated with the patient samples using an ELISA processor, for example the EUROLab-Workstation ELISA or the EUROIMMUN Analyzer I or I-2P, depending on the sample throughput. The microplates with the incubated EUROMicroblots are then placed in the Microwell Imager. The automated recognition of microplate barcodes ensures correct assignment of results. In the subsequent image recording, the integrated camera of the Microwell Imager delivers high-quality images of each individual EUROMicroblot well in the shortest possible time. The intuitive EUROLineScan software then automatically evaluates these images and generates a result proposal.

- **Automated reading and evaluation** due to the combination of Microwell Imager and EUROLineScan
- **Compact benchtop device** for easy integration into any laboratory
- **Suitable combination** with the established automated ELISA systems EUROIMMUN Analyzer I or I-2P or EUROLabWorkstation ELISA
- **Traceability and reliable assignment** of results throughout the entire process due to harmonised products

Product overview

Device	Description	Order number
Microwell Imager	Digitisation and evaluation of EUROMicroblots in 96-well format	YG 0191-0101

DNA/RNA extraction and processing

Pre-NAT II

For more information on this subject scan the QR code or enter the Quick Link code q166 at www.euroimmun.com

Pre-NAT II

The Pre-NAT II allows fully automated high-throughput sample preparation for molecular genetic diagnostics, consisting of nucleic acid extraction and subsequent pipetting of the PCRs. In this way, up to 96 primary samples from various source materials are prepared efficiently, safely and without any manual intermediate steps for subsequent PCR-based tests.

After automated barcode identification of the sample tubes, the cell material is lysed and the nucleic acids are extracted by means of magnetic particles. These are subsequently transferred one after another into the automatically dispensed reagents by magnetisable metal rods. Afterwards, the liquid-handling module of the Pre-NAT II automatically pipettes the prompted PCRs using the extracted nucleic acids and the PCR reagents, which are stored refrigerated in the instrument.

- **Fully automated instrument for nucleic acid extraction and PCR preparation** for up to 96 primary samples and up to 288 PCRs per run
- **Further applications of the PCRs possible** for a variety of diagnostic analyses
- **Established nucleic acid extraction system** based on magnetic particles
- **Precise pipetting** with disposable filter tips, as well as an efficient and resource-saving dispensing system for extraction reagents
- **User-friendly instrument software** with clear graphic visualisation of all process and run times

Product overview

Device	Description	Order number
Pre-NAT II	Fully automated instrument for nucleic acid extraction and preparation of PCRs for up to 96 samples	YG 9102-0101

EUROArray

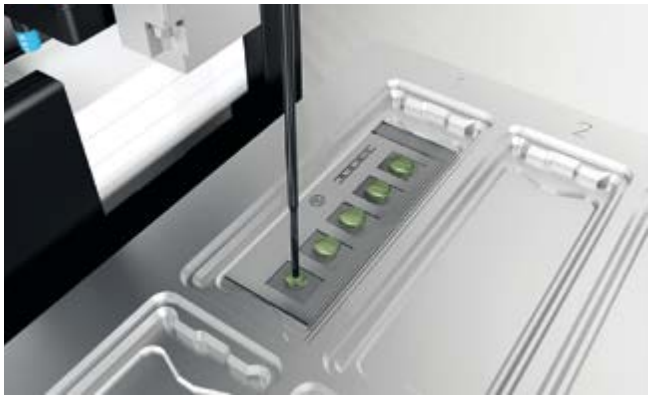
EUROArrayProcessor · EUROArrayScanner

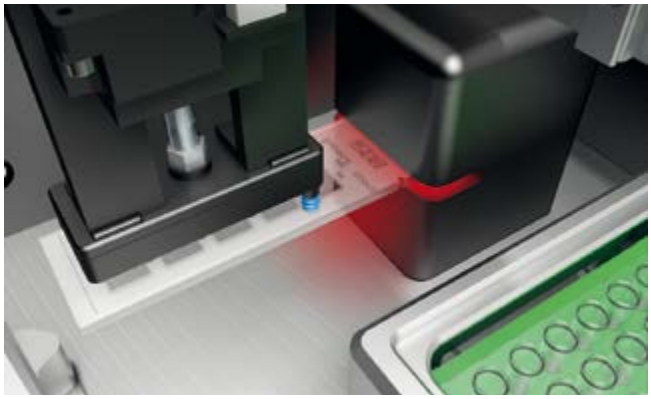
For more information on this subject scan the QR code or enter the Quick Link code q173 at www.euroimmun.com

EUROArrayProcessor

The EUROArrayProcessor enables automated processing of EUROArray slides. In the pre-PCR area, the software automatically generates a worklist based on the registered primary samples and the requested analyses and supports the user in the manual preparation of PCRs by providing information on the pipetting layout and the required reagent and sample volumes. Alternatively, for a higher degree of automation, the Pre-NAT II can be included in the workflow for automated preparation of the PCRs. In this case, run information and PCR layout are transferred from the Pre-NAT II to the EUROArrayProcessor. In the post-PCR area, the EUROArrayProcessor provides dilution of the PCRs with hybridisation buffer, the transfer of the hybridisation preparations to reagent trays and the incubation, washing and drying of the EUROArray slides. These can then be read out with the EUROArrayScanner. The integrity of the data is ensured by digital transmission between LIS, Pre-NAT II, EUROArrayProcessor and EUROArrayScan software throughout the entire process.

- **Automated post-PCR processing** of up to 192 PCR preparations and 40 EUROArray slides per run using proven TITERPLANE technology
- **Standardised and reproducible washing** of EUROArray slides based on MERGITE! washing technology and automated drying for best quality of results
- **Safety and traceability** through barcode identification of EUROArray slides, reagent tray boxes and reagents
- **Interfaces to Pre-NAT II and EUROArrayScan software** for secure data transfer throughout the process





Product overview

Device / software	Description	Order number
EUROArrayProcessor	Automated processing of EUROArray slides: pipetting, hybridisation, washing and drying on one instrument	YG 0671-0101-1

EUROArray

EUROArrayProcessor · EUROArrayScanner

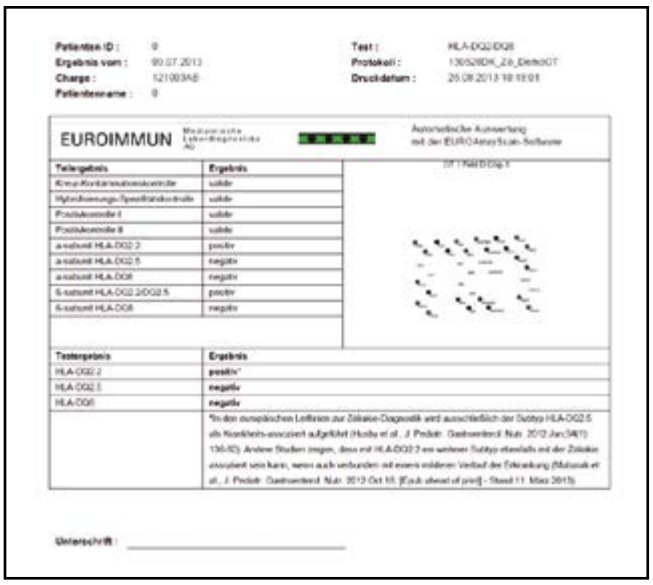
For more information on this subject scan the QR code or enter the Quick Link code q014 at www.euroimmun.com

EUROArrayScanner

After hybridisation, the EUROArrays are read by the EUROArrayScanner. The EUROArrayScan software automatically recognises the position of the arrays and quantifies the spot signals for each DNA probe. In just a few seconds, the software calculates the test results from the signal intensity for all samples and documents the findings. The extensive, integrated controls are automatically taken into account in the process. Manual evaluation and interpretation of the signals is not necessary. The EUROArrayScan software generates a clearly laid out work protocol for every run, which helps to make processing of the samples simple and secure.

With the report output, the user has the possibility to obtain an overview of the results for all samples and/or a detailed individual report with all partial results together with the associated array image in order to verify the suggested findings. Furthermore, the user can add individual comments. The results are automatically saved together with the image data, therefore archiving of the incubated EUROArray slides can be dispensed with. It is possible to connect the EUROArrayScan software to an LIS.

- **Analysis and evaluation system** for molecular genetic diagnostics by means of EUROArrays
- **Fully automatic digital evaluation, result output and data archiving**
- **Rapid evaluation** – one EUROArray slide for five samples in under 20 seconds
- **Result output** in the form of an overview or a detailed individual result
- Possibility to **add comments to the result**
- **LIS connection** and **networkability** for optimal data communication and integration



Product overview

Device / software	Description	Order number
EUROArrayScanner	EUROArrayScanner incl. EUROArrayScan software for fully automated recording, evaluation, interpretation of findings and archiving of EUROArrays	YG 0602-0101

EURORealTime

Eonis™ Q96 · EURORealTime-Analysis

For more information on this subject scan the QR code or enter the Quick Link code q176 at www.euroimmun.com

Eonis™ Q96

The Eonis™ Q96 is a quantitative real-time PCR thermal cycler for analyses in 96-well format with accurate real-time results.

The 96-well PCR plate with a sample volume between 5 and 100 µL can be conveniently inserted into the easily accessible sample drawer. The heating block made of silver with gold coating ensures fast heating and cooling cycles as well as highest temperature homogeneity over all 96 wells due to its thermal conductivity properties. The motorised heated lid with precise contact pressure prevents condensation, thus avoiding losses of sample volume. The fibre-optic system with 4 long-life LEDs and the high-performance optics enable homogeneous excitation of the fluorescent dyes in all individual samples for the best possible quantum yield. The signals are received by the detection module with 6 different colour filter modules, so that multiplex PCRs with different probes can be analysed with the Eonis™ Q96.

The Eonis™ Q96 is operated with an intuitive control software that can also be connected to the EURORealTime Analysis software for secure and convenient evaluation.

- **Convenient insertion and removal** of the 96-well PCR plate due to the freely accessible sample drawer
- **Fast heating and cooling cycles** and **ideal temperature homogeneity** over the entire heating block
- **Homogeneous excitation** without edge effects and readout of 96 samples in only 6 seconds
- **Bidirectional connection to EURORealTime Analysis software** for secure data transfer

Product overview

Device / software	Description	Order number
Eonis™ Q96	Quantitative real-time PCR cycler	YG 1092-0101

EURORealTime

Eonis™ Q96 · EURORealTime-Analysis

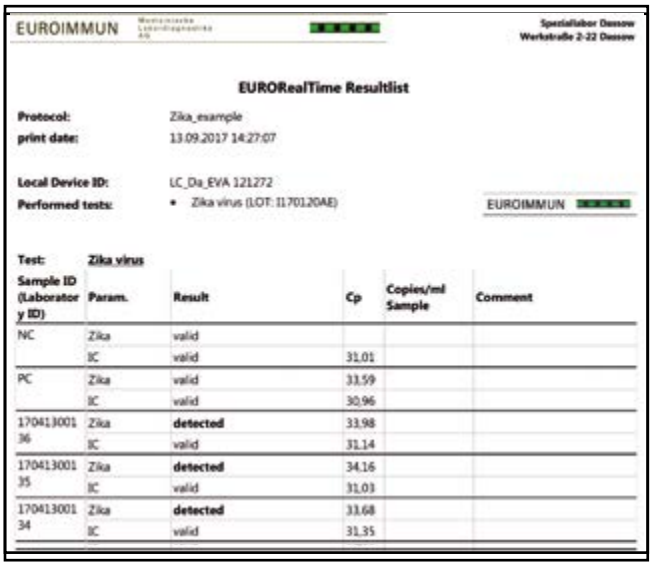
For more information on this subject scan the QR code or enter the Quick Link code q153 at www.euroimmun.com

EURORealTime Analysis

The EURORealTime Analysis software provides guided preparation and fully automated evaluation of EURORealTime tests. It automatically calculates pipetting schemes and master mix preparations to support the subsequent pippeting of PCRs and performs standardised evaluation of raw data for selected PCR cyclers, including generation of result suggestions. All internal and external controls are automatically taken into account. Manual definition of cut-offs and subjective interpretation of results are no longer required. Moreover, the software provides the possibility of printing an overview of all test results, optionally including the respective amplification curves.

An interface enables digital data transfer between the EURORealTime Analysis software and the Pre-NAT II, as well as a laboratory information system (LIS) for a convenient and secure workflow.

- Software-supported preparation and automated evaluation of EURORealTime tests
- Generation of pipetting schemes and PCR layouts, including all required controls
- Result documentation and issuing of result suggestions for patient samples as well as all internal and external controls
- Economical **reusability of standard curves** for quantification
- **Result output** in a clearly arranged list of individual results, optionally including amplification curves
- Digital data communication possible between EURORealTime Analysis software, Pre-NAT II and LIS



EUROIMMUN

Spezialfabor Dassow
Werkstraße 2-22 Dassow

EURORealTime Resultlist

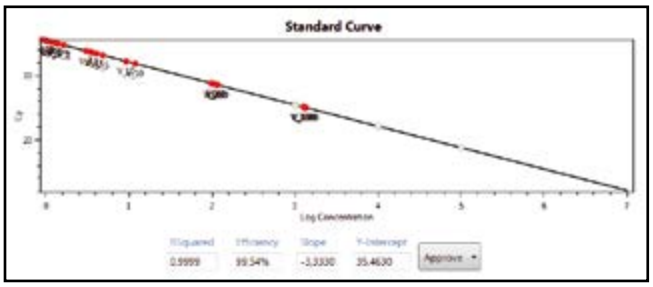
Protocol: Zika_example
print date: 13.09.2017 14:27:07

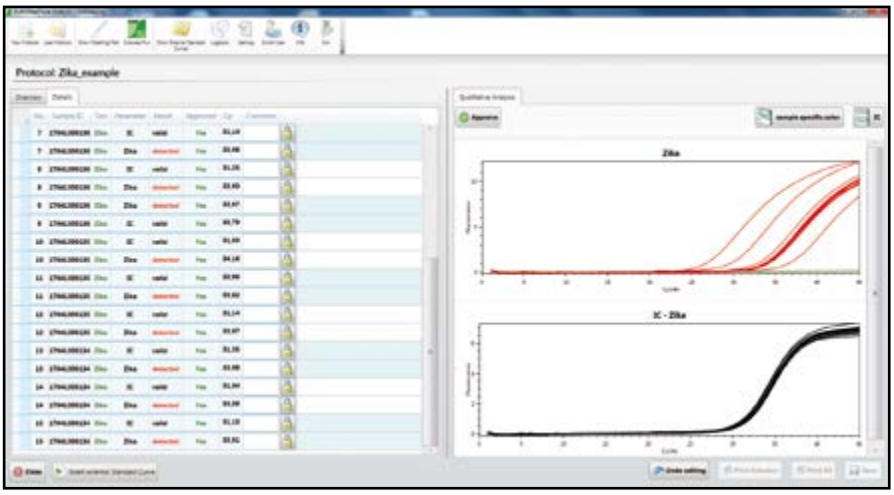
Local Device ID: LC_Da_EVA 121272
Performed tests: • Zika virus (LOT: I1701.20AE)

EUROIMMUN

Test: Zika virus

Sample ID (Laboratory ID)	Param.	Result	Cp	Copies/ml Sample	Comment
NC	Zika	valid			
	IC	valid	31,01		
PC	Zika	valid	33,59		
	IC	valid	30,96		
170413001 36	Zika	**detected**	33,98		
	IC	valid	31,14		
170413001 35	Zika	**detected**	34,16		
	IC	valid	31,03		
170413001 34	Zika	**detected**	33,68		
	IC	valid	31,35		





Product overview

Device / software	Description	Order number
EUROREALTIME Analysis	Software-supported preparation of EUROREALTIME tests as well as automated evaluation, result interpretation and archiving	YG 0661-0101

Laboratory management

EUROLabOffice 4.0 · EUROLab CSF software

For more information on this subject scan the QR code or enter the Quick Link code q021 at www.euroimmun.com

EUROLabOffice 4.0

The laboratory management system EUROLabOffice 4.0 simplifies and speeds up the daily routine in the diagnostic laboratory and increases security through organisation of the entire laboratory procedure and traceable documentation of all data and processes. EUROLabOffice 4.0 offers many advantages both for small laboratories with mainly manual workstations as well as for high-throughput laboratories with a variety of connected automated systems and workstations.

- **Efficient consolidation of laboratory results** obtained with EUROIMMUN products for autoimmune, infection and allergy diagnostics as well as antigen detection

- **Central interface** between all EUROIMMUN instruments and the LIS for maximal automation and minimisation of manual working steps

- **Increase in the efficiency and reproducibility of all working steps:** Completely paperless work procedures in accordance with automated protocols – from easy management of analysis requests, (cost-) optimised test performance, IIFT result input at the computer screen, archiving of IIFT and blot images

- **Security and comprehensive data processing** via automated and complete data communication between the LIS and all workstations

- **Flexible and open system** for individual adaptation to existing laboratory processes due to various setting options and expansion modules

Product overview

Software	Description	Order number
EUROLabOffice 4.0	Laboratory management software of the latest generation for optimisation of workflows in the diagnostic laboratory	YG 0250-0101-7
Module Quality Control Management, EUROLabOffice 4.0	Optional module for automated lot management and quality management evaluation of controls	YG 0250-0101-70
Module Sample Archive, EUROLabOffice 4.0	Optional module for efficient sample archiving	YG 0250-0101-71
Module Manual Sample Registration, EUROLabOffice 4.0	Optional module for convenient manual sample registration and assignment to different workstations	YG 0250-0101-72

Laboratory management

EUROLabOffice 4.0 · EUROLab CSF software

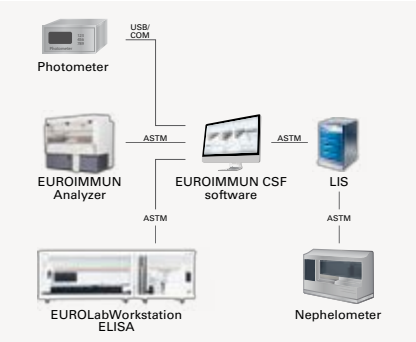
For more information on this subject scan the QR code or enter the Quick Link code q128 at www.euroimmun.com

EUROIMMUN CSF Software

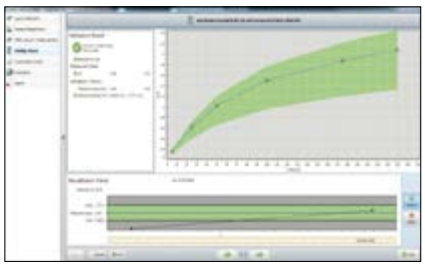
The EUROIMMUN CSF Software provides automated calculation of CSF/serum quotients ($CSQ_{alb.}$, CSQ_{total} IgA/G/M, $CSQ_{path.-spec.}$, $CSQ_{lim.}$ and $CSQ_{rel.}$ or antibody index AI). The $CSQ_{rel.}$ allows a statement to be made on the intrathecal pathogen-specific antibody synthesis.

The albumin and antibody concentrations measured by means of e.g. a nephelometer and the EUROIMMUN Analyzer or the EUROLabWorkstation ELISA can be transferred online into the EUROIMMUN CSF Software so that time-consuming and error-prone manual data transfer is no longer required. Manual input of the values or quotients into the software is also possible. For manual transfer a photometer can be connected.

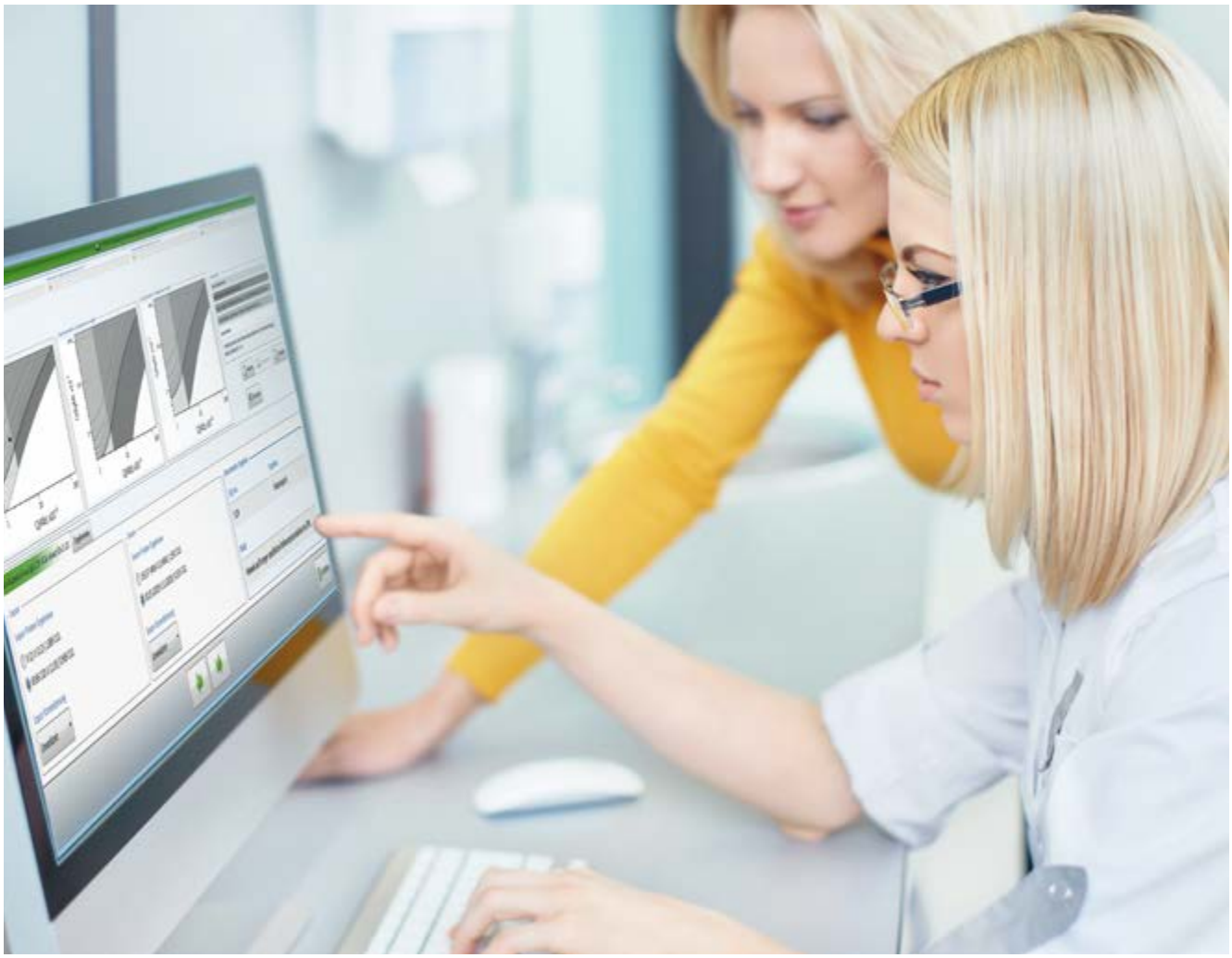
Optionally, a storable standard curve can be used so that only one recalibrator needs to be included instead of 4 to 6 calibrators per run. This saves reaction wells on the ELISA plate. The recalibration, validity check and calculation of the antibody concentration are fully automated in the EUROIMMUN CSF Software. For internal quality control, the values of the recalibrator or the serum/CSF controls from different runs for one lot are clearly presented.



In the detailed patient view, all findings and a suggested final result are shown. The CSF/serum quotients $CSQ_{alb.}$ and CSQ_{total} IgA/G/M are additionally displayed graphically in quotient diagrams according to Reiber and Lange and can be interpreted using the legend.



- **Automatic calculation of CSF/serum quotients** from pathogen-specific antibody, albumin and total IgA/G/M concentrations
- **Safe and quick data transfer due to automated, bidirectional data communication** between the EUROIMMUN Analyzer I or I-2P or EUROLab-Workstation ELISA and photometer, LIS or nephelometer
- **Clear graphic display** in quotient diagrams according to Reiber and Lange
- **Optional use of a storable standard curve** for highest economic efficiency with simultaneous result security



Product overview

Software	Description	Order number
EUROIMMUN CSF Software	Software for automated calculation of CSF/serum quotients ($CSQ_{alb.}$, CSQ_{total} IgA/G/M, $CSQ_{path.-spec.}$, $CSQ_{lim.}$ and $CSQ_{rel.}$ or antibody index AI)	YG 0259-0101-1

Special test kits and reagents for automation

Format

- 1005: 10 slides with 5 fields each
- 2005: 20 slides with 5 fields each
- 1010: 10 slides with 10 fields each
- 1050: 10 slides with 50 fields each

FC 1512 - 1010 -1

Product code

Product classification

- DL: EUROLINE autoantibodies (test system with preequipped incubation tray) ..... page 88
- DN: EUROLINE infectious serology (test system with preequipped incubation tray) ..... page 89
- Further reagents for ids chemiluminescence tests ..... page 89
- FC: Test system for indirect immunfluorescence (EUROPattern): Autoantibodies..... page 90
- FW: Single slides for indirect immunfluorescence (EUROPattern): Autoantibodies..... page 90
- FR: Test system for indirect immunfluorescence (EUROPattern): Infectious serology ..... page 94
- FS: Single slides for indirect immunfluorescence (EUROPattern): Infectious serology ..... page 94
- FA: Test system for indirect immunfluorescence (EUROLabLiquidHandler)..... page 96
- FC: Test system for indirect immunfluorescence (EUROPattern&EUROLabLiquidHandler) .. page 96

For product orders the amount, product code and test name are required. **Test kits** comprise all reagents needed to perform the serological investigation. For diagnostics in indirect immunofluorescence, for example, these include slides, FITC-labelled antibodies against human immunoglobulin, positive and negative control sera (not available for some products) as well as embedding medium, cover glasses, sachets of PBS and Tween 20.

Substrates consisting of cell cultures and tissues which do not appear in this catalogue can be made to specification. In addition, BIOCHIP mosaics can be produced according to individual requirements. Apart from the customary package sizes and slide formats, special sizes are available as well. Quotations can be provided upon request.

EUROLINE for the Determination of Autoantibodies (Test Systems with preequipped incubation trays)

Order No.	Antibodies against	Ig Class	Substrate	Format
DL 0160-5001 G	EUROLINE validation	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1111-5001-7 G	Paraneoplastic Neurologic Syndromes - 12 Ag (amphiphysin, CV2, PNMA2 (Ma-2/Ta), Ri, Yo, Hu, recoverin, SOX1, titin, Zic4, GAD65, Tr (DNER) separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1300-5001-4 G	Autoimmune Liver Diseases (AMA M2, M2-3E, Sp100, PML, gp210, LKM-1, LC-1, SLA/LP, Ro-52 separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1360-0510 A	Autoimmune Gastrointestinal Diseases IgA (tissue transglutaminase (endomysium), gliadin-analogue fusion peptide (GAF-3X), mannan (ASCA))	IgA	EUROLINE	50 strips Immunoblot-PreQ
DL 1360-5001 G	Autoimmune Gastrointestinal Diseases IgG (tissue transglutaminase (endomysium), gliadin-analogue fusion peptide (GAF-3X), parietal cell antigen (PCA) separately Intrinsic factor, mannan (ASCA))	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1530-5001-4 G	Autoimmune Inflammatory Myopathies 16 Ag (Mi-2 alpha, Mi-2 beta, TIF1g, MDA5, NXP2, SAE1, Ku, PM-Scl100, PM-Scl75, Jo-1, SRP, PL-7, PL-12, EJ, OJ, Ro-52 separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1530-5001-7 G	Autoimmune Inflammatory Myopathies 16 Ag et cN-1A (Mi-2 alpha, Mi-2 beta, TIF1g, MDA5, NXP2, SAE1, Ku, PM-Scl100, PM-Scl75, Jo-1, SRP, PL-7, PL-12, EJ, OJ, Ro-52, cN-1A separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1532-5001 G	Systemic Sclerosis Profile (Nucleoli) (Scl-70, CENP A, CENP B, RP11, RP155, fibrillarin, NOR90, Th/To, PM-Scl100, PM-Scl75, Ku, PDGFR, Ro-52 separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1590-5001-3 G	ANA Profile 3 (nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2 separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1590-5001-8 G	ANA Profile 1 (nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, Jo-1, CENP B, dsDNA, nucleosomes, histones, ribosomal P-proteins separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1590-5001-23 G	ANA Profile 23 (nucleosomes, dsDNA, histones, SS-A, Ro-52, SS-B, nRNP/Sm, Sm, Mi-2 alpha, Mi-2 beta, Ku, CENP A, CENP B, Sp100, PML, Scl-70, PM-Scl100, PM-Scl75, RP11, RP155, gp210, PCNA, DFS70 separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1590-5001-30 G	ANA Profile 3 plus DFS70 (nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2, DFS70 separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 1590-5001-32 G	dsDNA, nucleosomes, histones, DFS70	IgG	EUROLINE	50 stips Immunoblot-PreQ
DL 1590-5001-33 G	ANA Profile et Mi-2, Ku, DFS70 (Mi-2, Ku, nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, PM-Scl100, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2, DFS70 separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ

EUROLINE for the Determination of Autoantibodies (Test Systems with preequipped incubation trays)

Order No.	Antibodies against	Ig Class	Substrate	Format
DL 1590-5001-35 G	Cytoplasm profile (AMA M2, M2-3E, ribosomal P-proteins, Jo-1 SRP, PL-7, PL-12, EJ, OJ, Ro-52 separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DL 159z-5001 G	EUROLINE Anti-DFS70	IgG	EUROLINE	50 strips for Immunoblot PreQ

EUROLINE for Infectious Serology (Test Systems with preequipped incubation trays)

Order No.	Antibodies against	Ig Class	Substrate	Format
DL 0160-5001 G	EUROLINE validation	IgG	EUROLINE	50 strips Immunoblot-PreQ
DN2131-0510 G	EUROLINE Borrelia-RN-AT (p18, p19, p20, p21, p58, OspC (p25), p39, p83, LBb, LBa, VlsE Bg, VlsE Bb, VlsE Ba separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DN2131-0510 M	EUROLINE Borrelia-RN-AT (OspC Bg native, OspC Bb native, OspC Ba native, p39, VlsE Bb separately)	IgM	EUROLINE	50 strips Immunoblot-PreQ
DN2131-0510-2 M	EUROLINE Borrelia-RN-AT-adv (OspC-adv Bsp, OspC-adv Bg, OspC-adv Bb, OspC-adv Ba, p39, VlsE Bb separately)	IgM	EUROLINE	50 strips Immunoblot-PreQ
DN2525-0510 A	EUROLINE Hepatitis E Virus (separat: GT1 ORF2, GT2 ORF2, GT3 ORF2, GT4 ORF2)	IgA	EUROLINE	50 stripes Immunblot-PreQ
DN2525-0510 G	EUROLINE Hepatitis E Virus (separat: GT1 ORF2, GT2 ORF2, GT3 ORF2, GT4 ORF2)	IgG	EUROLINE	50 stripes Immunblot-PreQ
DN2525-0510 M	EUROLINE Hepatitis E Virus (separat: GT1 ORF2, GT2 ORF2, GT3 ORF2, GT4 ORF2)	IgM	EUROLINE	50 stripes Immunblot-PreQ
DN2606-0510-1 G	EUROLINE Anti-SARS-CoV-2 Profile (IgG)	IgG	EUROLINE	50 strips Immunblot-PreQ
DN2790-0510-2 G	EBV Profile 2 (VCA gp125, VCA p19, EBNA-1, p22, EA-D separately)	IgG	EUROLINE	50 strips Immunoblot-PreQ
DN2790-0510-2 M	EBV Profile 2 (VCA gp125, VCA p19, EBNA-1, p22, EA-D separately)	IgM	EUROLINE	50 strips Immunoblot-PreQ

Further Reagents for IDS Chemiluminescence Tests

IDS Order No.	Reagent	Format
IS-CAP300	IDS Top Cap Set	
IS-CT100	IDS-iSYS Trigger Set	2 x 250 ml
IS-CS100	IDS-iSYS System Liquid (Syst.I)	5 l
IS-CSC105	Sample Cups (500 µL)	1000 pieces
IS-CW100	IDS-iSYS Wash Solution (Wash S)	10 l
IS-DS200	IDS-iSYS D-SORB Solution	2 x 1 L
IS-IM100	IDS Immunocleaner	3 cartridges with 2 tanks of 27 mL each
IS-CC100	IDS-iSYS Cuvettes	960 pieces
IS-6010	IDS-iSYS Cartridge Checking System CCS	1 piece

Diagnostics for Indirect Immunofluorescence: EUROPattern, Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FC 1020-2005 FC 1020-2010	**islet cells antibodies (PM) EUROPattern** **pancreas islets**	IgG	1 BIOCHIP per field: pancreas	 monkey	20 x 05 (test system) 20 x 10 (test system)
FC 1050-1005 FC 1050-1010 FC 1050-2005 FC 1050-2010	**Endocrinology Screen (AM) EUROPattern** **adrenal cortex**	IgG	1 BIOCHIP per field: adrenal gland	 monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1111-1005-1 FC 1111-1010-1	**Neurology Mosaic 1 EUROPattern** **Yo, Hu, Ri, CV2, Ma, amphiphysin** **medullated nerves** **non-medullated nerves**	IgG	3 BIOCHIPs per field: cerebellum nerves intestinal tissue	 monkey monkey monkey	10 x 05 (test system) 10 x 10 (test system)
FC 1111-1005-8 FC 1111-1010-8	**Neurology Mosaic 8 EUROPattern** **Yo, Hu, Ri, CV2, Ma, amphiphysin** **medullated nerves** **non-medullated nerves** **pancreas islets**	IgG	4 BIOCHIPs per field: cerebellum nerves intestinal tissue pancreas	 monkey monkey monkey monkey	10 x 05 (test system) 10 x 10 (test system)
FC 1111-12010-14	**Neurology Mosaic 14 EUROPattern** **cerebellum antigens** **medullated nerves**	IgG	2 BIOCHIPs per field cerebellum intestinal tissue	 monkey monkey	120 x 10 (test system)
FC 1128-2005-1	**NMOSD Screen 1 EUROPattern** **aquaporin-4 (AQP-4)** **Myelin-oligodendrocyte glycoprotein (MOG)**	IgG PI	3 BIOCHIPs per field: transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90	20 x 05 (test system)
FC 1128-1005-50 FC 1128-1010-50 FC 1128-2005-50 FC 1128-2010-50	**aquaporin-4 EUROPattern**	IgG PI	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 112d-1005-6 FC 112d-1010-6 FC 112d-2005-6 FC 112d-2010-6	**Autoimmune Encephalitis Mosaic 6 EUROPattern** **glutamate receptor (type NMDA)** **contactin-associated protein 2 (CASPR2)** **glutamate receptors (type AMPA1/2)** **leucine-rich glioma-inactivated protein 1 (LGI1)** **dipeptidyl aminopeptidase-like protein 6 (DPPX)** **GABA B receptor**	IgG PI	6 BIOCHIPs per field: transfected cells transfected cells transfected cells transfected cells transfected cells transfected cells	 EU 90 EU 90 EU 90 EU 90 EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 112d-1005-51 FC 112d-1010-51 FC 112d-2005-51 FC 112d-2010-51 FC 112d-12010-51	**glutamate receptor (type NMDA) EUROPattern**	IgG PI	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system)
FC 112m-2005-50	**dipeptidyl aminopeptidase-like protein 6 (DPPX) EUROPattern**	IgG PI	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	20 x 05 (test system)
FC 1156-2005-50	**Myelin-Oligodendrocyte-Glycoprotein (MOG) EUROPattern**	IgG PI	transfected cells control transfection	EU 90 EU 90	20 x 05 (test system)
FC 1200-1005 FC 1200-1010 FC 1200-2005 FC 1200-2010 FC 1200-12010	**cytoplasm of granulocytes (cANCA, pANCA), nuclei of granulocytes (GS-ANA) EUROPattern**	IgG EB	granulocytes, ethanol-fixed	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system)
FC 1201-1005 FC 1201-1010 FC 1201-2005	**granulocytes (cANCA, pANCA) EUROPattern**	IgG EB	granulocytes, formaldehyde-fixed	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system)
FC 1201-1005-2 FC 1201-1010-2 FC 1201-2005-2 FC 1201-2010-2 FC 1201-12010-2	**Granulocyte Mosaic 2 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cANCA, pANCA, EUROPattern**	IgG EB	2 BIOCHIPs per field: granulocytes (EOH) granulocytes (HCHO)	 human human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system)

Diagnostics for Indirect Immunofluorescence: EUROPattern, Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FC 1201-1005-13 FC 1201-1010-13 FC 1201-2005-13 FC 1201-2010-13 FC 1201-12010-13 FC 1201-2450-13 FW1201-1005-13 FW1201-2010-13	**Granulocyte Mosaic 13 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cell nuclei (ANA), cANCA, pANCA** **cANCA, pANCA, EUROPattern**	IgG EB	3 BIOCHIPs per field: granulocytes (EOH) HEp-2+granulocytes (EOH) granulocytes (HCHO)	 human human human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system) 24 x 50 (test system) 10 x 05 (single slides) 20 x 10 (single slides)
FC 1201-1005-15 FC 1201-1010-15 FC 1201-2010-15 FC 1201-1050-15 FW1201-1005-15	**Granulocyte Mosaic 15 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cell nuclei (ANA), cANCA, pANCA**	IgG EB	2 BIOCHIPs per field: granulocytes (EOH) HEp-2+granulocytes (EOH)	 human human	10 x 05 (test system) 10 x 10 (test system) 20 x 10 (test system) 10 x 50 (test system) 10 x 05 (single slides)
FC 1201-1005-22 FC 1201-1010-22 FC 1201-2005-22 FC 1201-2010-22	**EUROPLUS Granulocyte Mosaic 22 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cANCA, pANCA, EUROPattern** **pANCA: myeloperoxidase (MPO), EUROPattern** **cANCA: proteinase 3 (PR3), EUROPattern**	IgG EB	4 BIOCHIPs per field: granulocytes (EOH) granulocytes (HCHO) MPO BIOCHIPs PR3 BIOCHIPs	 human human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1201-1005-25 FC 1201-1010-25 FC 1201-2005-25 FC 1201-2010-25 FW1201-1005-25 FW1201-2010-25	**EUROPLUS Granulocyte Mosaic 25 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cell nuclei (ANA), cANCA, pANCA** **cANCA, pANCA, EUROPattern** **glom. basement membrane (GBM), EUROPattern** **pANCA: myeloperoxidase (MPO), EUROPattern** **cANCA: proteinase 3 (PR3), EUROPattern**	IgG EB	6 BIOCHIPs per field: granulocytes (EOH) HEp-2+granulocytes (EOH) granulocytes (HCHO) GBM BIOCHIPs MPO BIOCHIPs PR3 BIOCHIPs	 human human human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 05 (single slides) 20 x 10 (single slides)
FC 1201-1005-32 FC 1201-1010-32 FC 1201-2005-32 FC 1201-2010-32 FC 1201-12010-32 FW1201-1005-32 FW1201-1010-32	**EUROPLUS Granulocyte Mosaic 32 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cANCA, pANCA, EUROPattern** **cell nuclei (ANA), cANCA, pANCA** **pANCA: myeloperoxidase (MPO), EUROPattern** **cANCA: proteinase 3 (PR3), EUROPattern**	IgG EB	5 BIOCHIPs per field: granulocytes (EOH) granulocytes (HCHO) HEp-2+granulocytes (EOH) MPO BIOCHIPs PR3 BIOCHIPs	 human human human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FC 1250-2005	**Nephrology Screen (KM) EUROPattern** **renal glomeruli (GBM)**	IgG	 kidney	 monkey	20 x 05 (test system)
FC 1250-2005-1	**EUROPLUS Nephrology Screen 1 EUROPattern** **Renal glomeruli (GBM)** **glomerular basement membrane (GBM)**	IgG	2 BIOCHIPs per field kidney GBM-EUROPLUS	 monkey	20 x 05 (test system)
FC 1254-1005-50 FC 1254-1010-50 FC 1254-2005-50 FC 1254-2010-50	**phospholipase A2 receptor (PLA2R)** **EUROPattern**	IgG PI	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1300-1005-9 FC 1300-1010-9 FC 1300-2005-9 FC 1300-2010-9	**Autoimmune liver diseases Screen 9 EUROPattern** **mitochondria (AMA), LKM** **LKM, ANA** **smooth muscles (ASMA)** **F-actin**	IgG PI	4 BIOCHIPs per field: kidney liver stomach VSM47	 rat rat rat rat	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1360-2005 FC 1360-2010	**Anti-Parietal cells (SM) IIFT EUROPattern**	IgG	stomach	monkey	20 x 05 test system 20 x 10 test system
FC 1430-2005	**Myasthenia gravis Screen (SMM) EUROPattern** **skeletal muscle**	IgG	1 BIOCHIP per field: musculus iliopsoas	 monkey	20 x 05 (test system)
FC 1439-1005-1 FC 1439-12010-1	**Anti-VGKC-Ass. Proteins Mosaic 1 EUROPattern** **leucine-rich glioma-inact. prot. 1 (LGI1)** **contactin-associated protein 2 (CASPR2)**	IgG PI	3 BIOCHIPs per field: transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90	10 x 05 (test system) 120 x 10 (test system)

Diagnostics for Indirect Immunofluorescence: EUROPattern, Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FC 1501-1005 **FC 1501-1010** **FC 1501-2005**	**Dermatology Screen (EM) EUROPattern** **epidermis:** **prickle cell desmosomes** **epidermal basement membrane**	IgG+IgG4	oesophagus	monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system)
FC 1501-1005-7 **FC 1501-1010-7** **FC 1501-2005-7** **FC 1501-2010-7**	**EUROPLUS Dermatology Mosaic 7 EUROPattern** **epidermis** **pemphigoid antigens** **BP230gC** **desmoglein 1** **desmoglein 3** **BP180-NC16A-4X**	IgG+IgG4	6 BIOCHIPs per field: oesophagus salt-split skin transfected cells transfected cells transfected cells BP180-NC16A-4X EUROPLUS	 monkey monkey EU 90 EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1501-1010-20 **FC 1501-2005-20** **FC 1501-2010-20**	**Dermatology Mosaic 20 EUROPattern** **epidermis** **pemphigoid antigens**	IgG+IgG4	2 BIOCHIPs per field: oesophagus salt-split skin	 monkey monkey	10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1510-1005-1 **FC 1510-1010-1** **FC 1510-2005-1** **FC 1510-2010-1** **FC 1510-12010-1** **FC 1510-2450-1** **FW1510-2010-1** **FW1510-1050-1**	**cell nuclei (ANA) EUROPattern** **cell nuclei (ANA)**	IgG PI	HEp-2 cells liver (2 BIOCHIPs per field)	human monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system) 24 x 50 (test system) 20 x 10 (single slides) 10 x 50 (single slides)
FC 1512-1005-1 **FC 1512-1010-1** **FC 1512-2005-1** **FC 1512-2010-1** **FC 1512-1050-1** **FC 1512-12010-1** **FC 1512-2450-1** **FW1512-1005-1** **FW1512-1010-1** **FW1512-2010-1** **FW1512-1050-1**	**cell nuclei (ANA) EUROPattern** **cell nuclei (ANA)**	IgG PI	HEp-20-10 cells liver (2 BIOCHIPs per field)	human monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 50 (test system) 120 x 10 (test system) 24 x 50 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 10 (single slides) 10 x 50 (single slides)
FC 1512-1005-2 **FC 1512-12010-2** **FC 1512-2450-2**	**cell nuclei (ANA) EUROPattern** **mitochondria (AMA)**	IgG PI	HEp-20-10 cells kidney (2 BIOCHIPs per field)	human rat	10 x 05 (test system) 120 x 10 (test system) 24 x 50
FC 1520-1005 **FC 1520-1010** **FC 1520-2005** **FC 1520-2010** **FC 1520-1050** **FC 1520-12010** **FC 1520-2450** **FW1520-1005** **FW1520-1010** **FW1520-2005** **FW1520-2010** **FW1520-1050**	**cell nuclei (ANA)** **EUROPattern**	IgG PI	HEp-2 cells	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 50 (test system) 120 x 10 (test system) 24 x 50 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides) 10 x 50 (single slides)
FC 1522-1005 **FC 1522-1010** **FC 1522-2005** **FC 1522-2010** **FC 1522-1050** **FC 1522-12010** **FW1522-1005** **FW1522-2005** **FW1522-2010**	**cell nuclei (ANA)** **EUROPattern**	IgG PI	HEp-20-10 cells	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 50 (test system) 120 x 10 (test system) 10 x 05 (single slides) 20 x 05 (single slides) 20 x 10 (single slides)

Diagnostics for Indirect Immunofluorescence: EUROPattern, Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FC 1572-1005 **FC 1572-1010** **FC 1572-2005** **FC 1572-2010**	**dsDNA EUROPattern**	IgG EB	flagellates	Crithidia luciliae	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1572-1005-1 **FC 1572-1010-1** **FC 1572-2005-1** **FC 1572-2010-1** **FC 1572-12010-1**	**dsDNA (sensitive) EUROPattern**	IgG EB	flagellates	Crithidia luciliae	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system)
FC 1620-1005-1 **FC 1620-1010-1** **FC 1620-2005-1** **FC 1620-2010-1**	**AMA/ASMA IIFT (KR/SR) EUROPattern** **mitochondria (AMA)** **smooth muscles (ASMA)**	IgG	2 BIOCHIPs per field: kidney stomach	 rat rat	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1651-1005 **FC 1651-1010**	**F-actin EUROPattern**	IgG PI	VSM47	rat	10 x 05 (test system) 10 x 10 (test system)
FC 1800-1010-2 **FC 1800-2005-2** **FC 1800-2010-2** **FC 1800-12010-2**	**Mosaic Basic Profile 2 EUROPattern** **cell nuclei (ANA), LKM** **mitochondria (AMA), LKM** **smooth muscles (ASMA)**	IgG	3 BIOCHIPs per field: liver kidney stomach	 rat rat rat	10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system)
FC 1802-1005-3 **FC 1802-1010-3** **FC 1802-2005-3** **FC 1802-2010-3**	**Mosaic Basic Profile 3A EUROPattern** **cell nuclei (ANA) EUROPattern** **cell nuclei (ANA)** **mitochondria (AMA)** **smooth muscles (ASMA)**	IgG PI	4 BIOCHIPs per field: HEp-20-10 cells liver kidney stomach	 human monkey rat rat	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1805-1010-13 **FC 1805-2005-13** **FC 1805-2010-13**	**Mosaic Basic Profile 13B EUROPattern** **cell nuclei (ANA), EUROPattern** **cell nuclei (ANA), LKM** **mitochondria (AMA), LKM** **smooth muscles (ASMA)**	IgG PI	4 BIOCHIPs per field: HEp-2 cells liver kidney stomach	 human rat rat rat	10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1812-1005-3 **FC 1812-1010-3** **FC 1812-2005-3** **FC 1812-0010-3**	**Mosaic Basic Profile 3C EUROPattern** **cell nuclei (ANA), EUROPattern** **cell nuclei (ANA), LKM** **mitochondria (AMA), LKM** **smooth muscles (ASMA)**	IgG PI	4 BIOCHIPs per field: HEp-20-10 cells liver kidney stomach	 human rat rat rat	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 100 x 10 (test system)
FC 1914-1005 A **FC 1914-1010 A** **FC 1914-2005 A** **FC 1914-2010 A** **FC 1914-1005 G** **FC 1914-1010 G** **FC 1914-2005 G** **FC 1914-2010 G**	**Coeliac Disease Screen (LM) EUROPattern** **endomysium**	IgA IgGpa	liver	monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)

Diagnostics for Indirect Immunofluorescence: EUROPattern, Infectious Serology

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FR 2191-1005-3 A	Anti-Chlamydia MIF EUROPattern	IgA EB	4 BIOCHIPs per field:		10 x 05 (test system)
FR 2191-1010-3 A	Chlamydia trachomatis		elementary bodies	EU 40	10 x 10 (test system)
FR 2191-1005-3 G	Chlamydia pneumoniae	IgG EB	and non-infected cells	EU 40	10 x 05 (test system)
FR 2191-1010-3 G	Chlamydia psittaci			EU 40	10 x 10 (test system)
FR 2191-1005-3 M		IgM EB			10 x 05 (test system)
FR 2191-1010-3 M					10 x 10 (test system)
FR 2192-1005-80 A	Chlamydia pneumoniae EUROPattern	IgA EB	elementary bodies (MIF)	EU 40	10 x 05 (test system)
FR 2192-1005-80 G		IgG EB	non-infected cells	EU 40	10 x 05 (test system)
FR 2192-1005-80 M		IgM EB	(2 BIOCHIPs per field)		10 x 05 (test system)
FR 219b-1005-1 G	Bartonella henselae EUROPattern	IgG PI	infected cells	EU 70	10 x 05 (test system)
FR 219b-1010-1 G	Bartonella quintana EUROPattern		infected cells	EU 70	10 x 10 (test system)
			(2 BIOCHIPs per field)		
FR 219b-2010-1 M		IgM EB	infected and non-	EU 70	20 x 10 (test system)
			infected cells	EU 38	
			(4 BIOCHIPs per field)		
FR 2201-1005-1 G	Mycoplasma hominis EUROPattern	IgG EB	infected cells	EU 38	10 x 05 (test system)
FR 2201-1010-1 G	Ureaplasma urealyticum EUROPattern		infected cells	EU 38	10 x 10 (test system)
			non-infected cells	EU 38	
			(3 BIOCHIPs per field)		
FR 2536-1005 G	HHV-6 EUROPattern	IgG EB	infected cells	EU 30	10 x 05 (test system)
FR 2536-1010 G					10 x 10 (test system)
FR 2536-2005 G					20 x 05 (test system)
FR 2536-2010 G					20 x 10 (test system)
FR 2536-1005 M		IgM EB			10 x 05 (test system)
FR 2536-1010 M					10 x 10 (test system)
FR 2536-2005 M					20 x 05 (test system)
FR 2536-2010 M					20 x 10 (test system)
FR 2665-1005 G	Yellow fever virus (YFV) EUROPattern	IgG PI	infected and non-	EU 14	10 x 05 (test system)
FR 2665-1005 M		IgM PI	infected cells		10 x 05 (test system)
			(2 BIOCHIPs per field)		
FR 2668-1005 G	Zika virus (ZIKV) EUROPattern	IgG PI	infected and non-	EU 14	10 x 05 (test system)
FR 2668-1010 G			infected cells		10 x 10 (test system)
FR 2668-1005 M		IgM PI	(2 BIOCHIPs per field)		10 x 05 (test system)
FR 2668-1010 M					10 x 10 (test system)
FR 2668-1005-1 G	Arbovirus Fever Mosaic 2 EUROPattern	IgG PI	6 BIOCHIPs per field:		10 x 05 (test system)
FR 2668-1010-1 G	Zika virus (ZIKV)		infected cells	EU 14	10 x 10 (test system)
FR 2668-1005-1 M	Chikungunya virus (CHIKV)	IgM PI	infected cells	EU 14	10 x 05 (test system)
FR 2668-1010-1 M	Dengue virus types 1 - 4 (DENV)		infected cells	EU 14	10 x 10 (test system)
FR 266a-1005-1 G	Mosaic Dengue virus	IgG PI	4 BIOCHIPs per field:		10 x 05 (test system)
FR 266a-1010-1 G	types 1 - 4 (DENV) EUROPattern		infected cells	EU 14	10 x 10 (test system)
FR 266a-1005-1 M		IgM PI			10 x 05 (test system)
FR 266a-1010-1 M					10 x 10 (test system)
FR 2730-2010-2 G	Coxsackie virus screen (types A) EUROPattern	IgG PI	4 BIOCHIPs per field:		20 x 10 (test system)
FR 2730-2010-2 M	types A7, A9, A16, A24	IgM PI	infected cells	EU 38	20 x 10 (test system)
FR 2730-2010-3 G	Coxsackie virus screen (types B) EUROPattern	IgG PI	6 BIOCHIPs per field:		20 x 10 (test system)
FR 2730-2010-3 M	types B1, B2, B3, B4, B5, B6	IgM PI	infected cells	EU 38	20 x 10 (test system)
FR 277a-1005-1 G	Sandfly fever virus Mosaic 1	IgG PI	4 BIOCHIPs per field:		10 x 05 (test system)
FR 277a-1005-1 M	EUROPattern	IgM PI			10 x 05 (test system)
	types Sicilian, Naples,		infected cells	EU 14	
	Toscana, Cyprus				
FR 278h-1005-1 G	Hantavirus Mosaic 1 EUROPattern	IgG PI	6 BIOCHIPs per field:		10 x 05 (test system)
FR 278h-1005-1 M	types Hantaan (HTNV), Sin Nombre (SNV),	IgM PI	infected cells	EU 14	10 x 05 (test system)
	Puumala (PUUV), Dobrava (DOBV),				
	Seoul (SEOV), Saaremaa (SAAV)				

Diagnostics for Indirect Immunofluorescence: EUROPattern, Infectious Serology

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FR 278m-1005-3 G **FR 278m-1005-3 M**	**Hantavirus Mosaic 3: America EUROPattern types Sin Nombre (SNV), Andes (ANDV)**	IgG PI IgM PI	2 BIOCHIPs per field: infected cells	EU 14	10 x 05 (test system) 10 x 05 (test system)
FR 2791-1005 G **FR 2791-1010 G** **FR 2791-2010 G** **FR 2791-1010 M**	**Epstein-Barr virus capsid antigen (EBV-CA) EUROPattern** **Anti-EBV-CA IIFT EUROPattern (IgM)**	IgG PI IgM PI	expressing cells	P3HR1	10 x 05 (test system) 10 x 10 (test system) 20 x 10 (test system) 10 x 10 (test system)
FR 2793-1010 C	**Epstein-Barr virus nuclear antigen (EBNA) EUROPattern**	C3c PI	expressing cells	Raji	10 x 10 (test system)
FR 2795-1005 G **FR 2795-1010 G**	**Epstein-Barr virus early antigen (EBV-EA) EUROPattern**	IgG PI	expressing cells	EU 33	10 x 05 (test system) 10 x 10 (test system)
FR 293a-1005 G **FR 293a-1010 G** **FR 293a-1005 M** **FR 293a-1010 M**	**Chikungunya virus (CHIKV) EUROPattern**	IgG PI IgM PI	infected and non-infected cells (2 BIOCHIPs per field)	EU 14	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system)

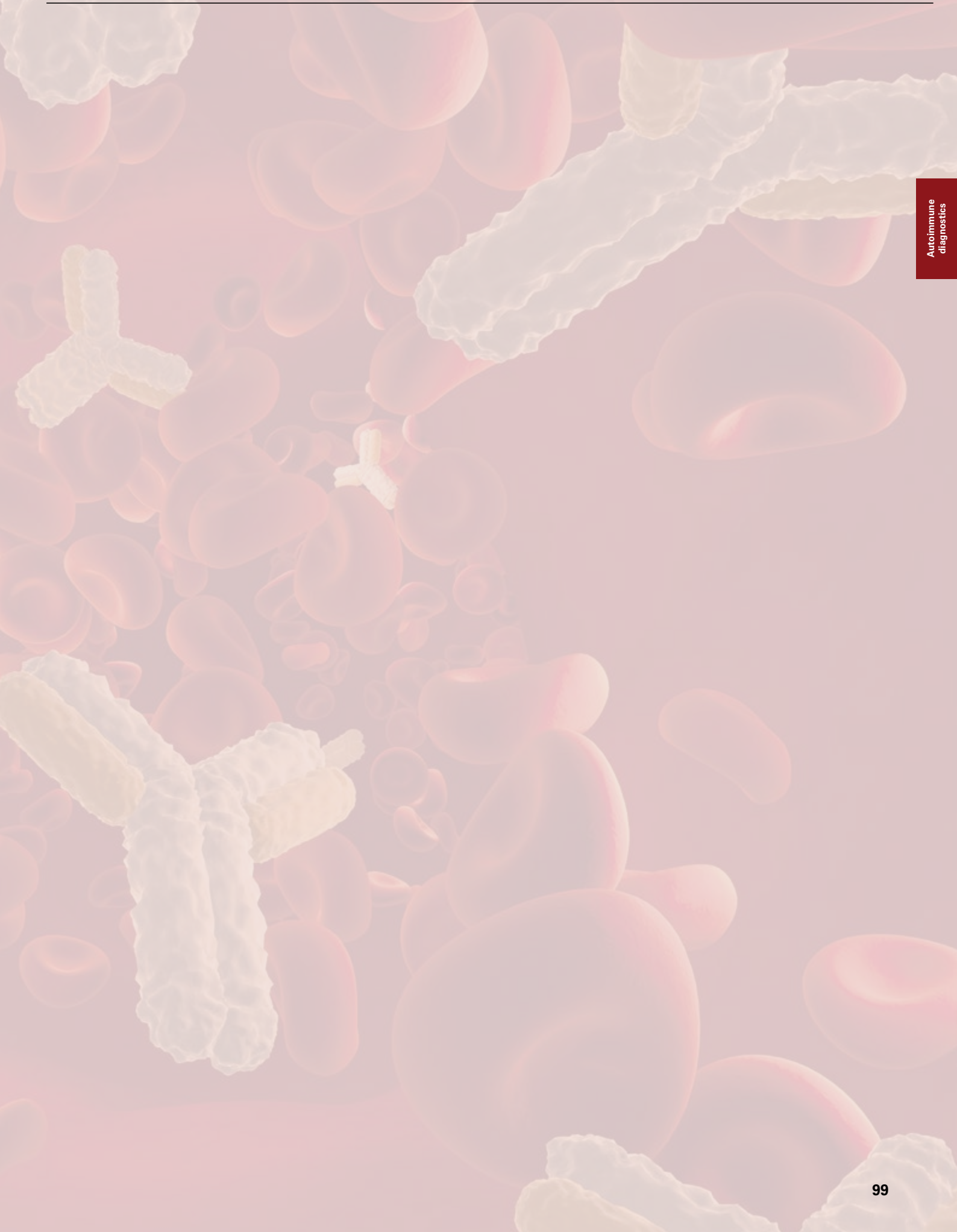
Diagnostics for Indirect Immunofluorescence: EUROLabWorkstation IFA

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1111-12010-8	**Neurology Mosaic 8** **Yo, Hu, Ri, CV2, Ma, amphiphysin** **medullated nerves** **non-medullated nerves** **pancreas islets**	IgAGM	4 BIOCHIPs per field cerebellum nerves intestinal tissue pancreas	 monkey monkey monkey monkey	120 x 10 (test system)
FC 1111-12010-14	**Neurology Mosaic 14 EUROPattern** **cerebellum antigens** **medullated nerves**	IgG	2 BIOCHIPs per field cerebellum intestinal tissue	 monkey monkey	120 x 10 (test system)
FC 112d-12010-51	**glutamate receptor (type NMDA) EUROPattern**	IgG PI	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	120 x 10 (test system)
FC 1200-12010	**cytoplasm of granulocytes (cANCA, pANCA), nuclei of granulocytes (GS-ANA) EUROPattern**	IgG EB	granulocytes, ethanol-fixed	human	120 x 10 (test system)
FC 1201-12010-2	**Granulocyte Mosaic 2 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cANCA, pANCA, EUROPattern**	IgG EB	2 BIOCHIPs per field: granulocytes (EOH) granulocytes (HCHO)	 human human	120 x 10 (test system)
FA 1201-12010-13 **FA 1201-2450-13**	**Granulocyte Mosaic 13** **cANCA, pANCA, GS-ANA** **cell nuclei (ANA), cANCA, pANCA** **cANCA, pANCA**	IgG	3 BIOCHIPs per field: granulocytes (EOH) HEp-2+granulocytes (EOH) granulocytes (HCHO)	 human human human	120 x 10 (test system) 24 x 50 (test system)
FC 1201-12010-13 **FC 1201-2450-13**	**Granulocyte Mosaic 13 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cell nuclei (ANA), cANCA, pANCA** **cANCA, pANCA, EUROPattern**	IgG EB	3 BIOCHIPs per field: granulocytes (EOH) HEp-2+granulocytes (EOH) granulocytes (HCHO)	 human human human	120 x 10 (test system) 24 x 50 (test system)
FC 1201-12010-32	**EUROPLUS Granulocyte Mosaic 32 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cANCA, pANCA, EUROPattern** **cell nuclei (ANA), cANCA, pANCA** **pANCA: myeloperoxidase (MPO), EUROPattern** **cANCA: proteinase 3 (PR3), EUROPattern**	IgG EB	5 BIOCHIPs per field: granulocytes (EOH) granulocytes (HCHO) HEp-2+granulocytes (EOH) MPO BIOCHIPs PR3 BIOCHIPs	 human human human	120 x 10 (test system)
FC 1439-12010-1	**Anti-VGKC-Ass. Proteins Mosaic 1 EUROPattern** **leucine-rich glioma-inact. prot. 1 (LGI1)** **contactin-associated protein 2 (CASPR2)**	IgG PI	3 BIOCHIPs per field: transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90	120 x 10 (test system)
FA 1510-12010-1 **FA 1510-2450-1**	**cell nuclei** **(ANA global test)**	IgG	HEp-2 cells liver (2 BIOCHIPs per field)	human monkey	120 x 10 (test system) 24 x 50 (test system)
FC 1510-12010-1 **FC 1510-2450-1**	**cell nuclei (ANA) EUROPattern** **cell nuclei (ANA)**	IgG PI	HEp-2 cells liver (2 BIOCHIPs per field)	human monkey	120 x 10 (test system) 24 x 50 (test system)
FA 1512-12010-1 **FA 1512-2450-1**	**cell nuclei** **(ANA global test)**	IgG	HEp-20-10 cells liver (2 BIOCHIPs per field)	human monkey	120 x 10 (test system) 24 x 50 (test system)
FC 1512-12010-1 **FC 1512-2450-1**	**cell nuclei (ANA) EUROPattern** **cell nuclei (ANA)**	IgG PI	HEp-20-10 cells liver (2 BIOCHIPs per field)	human monkey	120 x 10 (test system) 24 x 50 (test system)
FC 1512-12010-2 **FC 1512-2450-2**	**cell nuclei (ANA) EUROPattern** **mitochondria (AMA)**	IgG PI	HEp-20-10 cells kidney (2 BIOCHIPs per field)	human rat	120 x 10 (test system) 24 x 50
FA 1520-12010	**cell nuclei (ANA)**	IgG	HEp-2 cells	human	120 x 10 (test system)

Diagnostics for Indirect Immunofluorescence: EUROLabWorkstation IFA

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FC 1520-12010 **FC 1520-2450**	**cell nuclei (ANA)** **EUROPattern**	IgG PI	HEp-2 cells	human	120 x 10 (test system) 24 x 50 (test system)
FC 1522-12010	**cell nuclei (ANA)** **EUROPattern**	IgG PI	HEp-20-10 cells	human	120 x 10 (test system)
FC 1572-12010-1	**dsDNA (sensitive)** **EUROPattern**	IgG EB	flagellates	Crithidia luciliae	120 x 10 (test system)
FA 1800-12010-2	**Mosaic Basic Profile 2** **cell nuclei (ANA), LKM** **mitochondria (AMA), LKM** **smooth muscles (ASMA)**	IgG	3 BIOCHIPs per field: liver kidney stomach	 rat rat rat	120 x 10 (test system)
FC 1800-12010-2	**Mosaic Basic Profile 2 EUROPattern** **cell nuclei (ANA), LKM** **mitochondria (AMA), LKM** **smooth muscles (ASMA)**	IgG	3 BIOCHIPs per field: liver kidney stomach	 rat rat rat	120 x 10 (test system)
FA 1914-12010 A **FA 1914-12010 G**	**endomysium**	IgA IgGpa	liver	monkey	120 x 10 (test system) 120 x 10 (test system)

Autoimmune diagnostics



Rheumatology

CTD · SLE · Vasculitis · RA · APS

For more information on this subject scan the QR code or enter the Quick Link code q030 at www.euroimmun.com

Connective tissue diseases

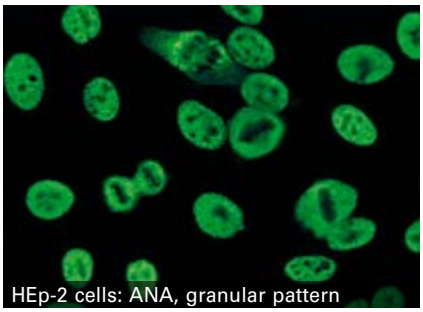
Clinical information: Connective tissue diseases (CTD) are rheumatic diseases. They include, for example, systemic *lupus erythematosus* (see chapter SLE), progressive systemic sclerosis, Sjögren's syndrome, myositis or Sharp syndrome.

Autoantibodies whose target antigens are located in the nucleus (so-called anti-nuclear antibodies, ANA) are important serological markers for CTD. Target antigens include, for example, nucleic acids, cell nuclear proteins and ribonuclear proteins.

The frequency (prevalence) of anti-nuclear antibodies in inflammatory rheumatic diseases lies between 20 and 100 %. Therefore, differential ANA diagnostics is indispensable for the diagnosis of individual rheumatic diseases and their differentiation from other autoimmune diseases.

Diagnostics: The gold standard for the determination of ANA is the indirect immunofluorescence test (IIFT) with human epithelial cells (HEp-2), which is known for its high sensitivity and specificity. Positive and negative samples produce a large signal difference. In the microscopic evaluation it is possible to establish precisely how an indicator dye (generally fluorescein) is distributed in the tissue or the cells. A typical fluorescence pattern is produced for every bound autoantibody, depending on the location of the individual autoantigens.

The first International Consensus Statement on standardised nomenclature of HEp-2 cell patterns in indirect immunofluorescence (ICAP, www.anapatterns.org) defined fifteen nuclear, five mitotic and nine cytoplasmic patterns which are relevant for the diagnosis of various autoimmune diseases.


HEp-2 cells: ANA, granular pattern

Furthermore, the consensus recommends that autoantibodies detected in indirect immunofluorescence be confirmed by additional specific tests (e.g. ELISA, line blot). The exclusive use of these monospecific test methods is inadequate for the determination of autoantibodies against cell nuclei, as not all relevant antigens are available in a purified form as yet. Thus, the corresponding ANA can only be detected by IIFT.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	HEp-2 cells	Gold standard ANA screen	FA 1520-####	161
	HEp-20-10 cells	Easier evaluation due to increased number of mitotic phases	FA 1522-####	161
	HEp-2 cells/ liver	Additional differentiation of patterns using liver tissue	FA 1510-####-1	160
	HEp-20-10 cells/ liver/nRNP/Sm + Sm + SS-A SS-B + Scl-70 + Jo-1	Screening and confirmation on monospecific EUROPLUS antigen dots in one test system	FA 1512-####-22	161
ELISA	dsDNA, histones, ribosomal P-proteins, nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1, centromeres	ANA screen ELISA using an antigen mixture that is specific for rheumatic diseases	EA 1590-9601-8 G	144
	Ribosomal P-proteins, nRNP/ Sm, Sm, SS-A, SS-B, Scl-70, Jo-1, centromeres	ENA profile ELISA as confirmatory test based on individual monospecific antigens	EA 1590-9601-2 G	144
	cN-1A	First serological marker for inclusion body myositis	EA 1675-4801 G	145
Blot	dsDNA, nucleosomes, histones, SS-A, Ro-52, SS-B, nRNP/Sm, Sm, Mi-2α, Mi-2β, Ku, CENP A, CENP B, Sp100, PML, Scl-70, PM-Scl100, PM-Scl75, RP11, RP155, gp210, PCNA, DFS70	Multiplex approach for confirmation and differentiation of all ANA patterns in agreement with the international consensus, ICAP (www.anapatterns.org)	DL 1590-1601-23 G	141
	AMA-M2, M2-3E, ribosomal P-proteins, Jo-1, SRP, PL-7, PL-12, EJ, OJ, Ro-52	Profile for confirmation and differentiation of all cytoplasmic patterns (ICAP)	DL 1590-1601-35	142
	Mi-2α, Mi-2β, TIF1γ, MDA5, NXP2, SAE1, Ku, PM-Scl100, PM-Scl75, Jo-1, SRP, PL-7, PL-12, EJ, OJ, Ro-52, cN-1A	Comprehensive profile of myositis-specific antigens	DL 1530-1601-7 G	141
	Scl-70, CENP A, CENP B, RP11, RP155, fibrillarin, NOR90, Th/To, PM-Scl100, PM-Scl75, Ku, PDGFR, Ro-52	Comprehensive profile of systemic sclerosis-specific antigens	DL 1532-1601 G	141

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q077 at www.euroimmun.com

Rheumatology

CTD · SLE · Vasculitis · RA · APS

For more information on this subject scan the QR code or enter the Quick Link code q042 at www.euroimmun.com

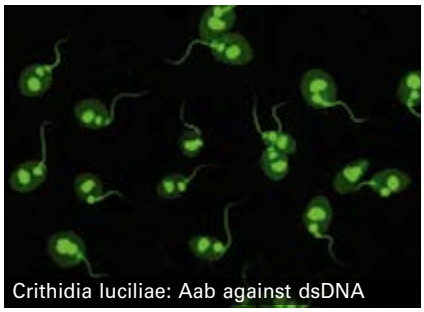
Systemic lupus erythematosus

Clinical information: Systemic *lupus erythematosus* (SLE) is a systemic autoimmune disease belonging to the collagenosis group. Diagnosis is based on 11 criteria defined by the American College of Rheumatology (ACR) and modified in 1997. If 4 of 11 criteria are present, the probability of SLE is between 80 and 90%.

Antibodies against dsDNA are the main focus in the serological diagnosis of SLE. These antibodies can be found in 60 to 90% of patients, depending on the activity of the disease. Anti-dsDNA antibodies are in rare cases also found in patients with other autoimmune diseases (e.g. autoimmune hepatitis) or infections as well as in clinically healthy persons. 85% of people in the latter group develop SLE within 5 years of initial detection of anti-dsDNA. However, SLE cannot be excluded if anti-dsDNA antibodies are not detected.

Antibodies against nucleosomes are also an exclusive marker of SLE, provided that they are determined using an advanced test system with a target antigen that is free of histone H1, Scl-70 and other non-histone proteins.

Diagnostics: Various test methods are available for the routine detection of autoantibodies against dsDNA: enzyme immunotests (ELISA, EUROLINE), Farr RIA and the Crithidia luciliae immunofluorescence test (CLIFT). The various test systems differ, sometimes greatly, in sensitivity and specificity. Conventional CLIFT shows a particularly high disease specificity, while the IIFT Crithidia luciliae sensitive is a very sensitive test.


Crithidia luciliae: Aab against dsDNA

Using an innovative biological preparation, scientists at EUROIMMUN have developed a new test system: the Anti-dsDNA-NcX ELISA, which surpasses by far the diagnostic quality characteristics of all conventional anti-dsDNA ELISA. The secret of the innovation lies in the use of highly purified nucleosomes as the new linking substance. Since nucleosomes have a strong adhesive ability, even the smallest concentration of these is highly suited to coupling isolated dsDNA to the surface of a microplate well. Poly-L-lysine and protamine sulphate are now obsolete, and many false positive reactions can be avoided. In a clinical comparative study of 378 patients with rheumatic diseases (of these 209 with SLE), the Anti-dsDNA-NcX ELISA yielded an 8% higher sensitivity than the anti-dsDNA RIA (Farr assay), demonstrating its superior capabilities.

Nevertheless, different test methods identify different SLE subgroups. To increase the serological detection rate different test systems should be combined.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Crithidia luciliae	Conventional IIFT with high specificity	FA 1572-####	162
	Crithidia luciliae sensitive	Screening IIFT with high sensitivity	FA 1572-####-1	162
	HEp-2 cells	Detection of the SLE-specific pattern homogeneous ANA on HEp-2 cells	FA 1520-####	161
ELISA	Highly purified genomic double-stranded DNA complexed with nucleosomes	Optimal first-line test, increased sensitivity and specificity through use of nucleosome linker	EA 1572-9601 G	144
	Nucleosomes	Highly specific detection of anti-nucleosome antibodies through use of highly purified mononucleosomes, which are free of contaminating proteins	EA 1574-9601 G	144
	dsDNA, histones, nucleosomes, nRNP/Sm, Sm, SS-A, SS-B, Scl-70	Profile ELISA with SLE-relevant antigens	EA 1590-9601-12 G	144
RIA	Plasmid DNA	Gold standard Farr assay for detection of anti-dsDNA antibodies	RA 1571-10001	150

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g096 at www.euroimmun.com

Rheumatology

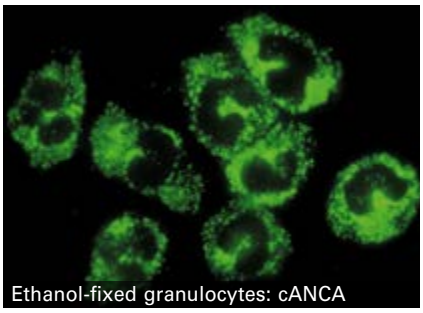
CTD · SLE · Vasculitis · RA · APS

For more information on this subject scan the QR code or enter the Quick Link code q046 at www.euroimmun.com

Vasculitis

Clinical information: According to the consensus introduced at the Chapel-Hill-Consensus conference and the generally renowned classification system, granulomatosis with polyangiitis (GPA, formerly: Wegener's granulomatosis, WG), microscopic polyangiitis (MPA), eosinophilic granulomatosis with polyangiitis (EGPA, formerly: Churg-Strauss syndrome (CSS)) are classed as the group of ANCA-associated vasculitides (AAV). ANCA (anti-neutrophil cytoplasm antibodies) are autoantibodies directed against antigens found in cytoplasmic granules of neutrophils and monocytes. They are important serological markers for the diagnosis of AAV.

Moreover, an association with ANCA has been described for some of the immune complex vasculitides. Patients with anti-GBM glomerulonephritides (serological marker: antibodies against the glomerular basement membrane; anti-GBM) are often ANCA positive (>35 %). A positive result can indicate rapid-progressive glomerulonephritis or GPA. In patients with AAV with renal involvement, the parallel analysis of ANCA and anti-GBM antibodies is thus recommended.


Ethanol-fixed granulocytes: cANCA

Diagnostics: AAV diagnostics are primarily based on IIFT. Standard for IIFT is a BIOCHIP mosaic of ethanol (EOH)- and formaldehyde (HCHO)-fixed human granulocytes. Further EUROIMMUN-exclusive BIOCHIPs, e.g. HEp-2 cells with sedimented granulocytes, further increase the diagnostic certainty. The EUROPLUS technique allows the combination of conventional cell culture substrates with defined single antigens (PR3, MPO, GBM) on one test field. This considerably simplifies the interpretation of the immunofluorescence patterns.

IIFT allows the differentiation of two ANCA types: the cytoplasmic type (cANCA), which is associated with GPA and is almost always directed against proteinase 3 (PR3), and the perinuclear type (pANCA), which indicates a spectrum of various diseases. The main target antigen of pANCA in MPA and EGPA is myeloperoxidase (MPO), but antibodies against granulocyte elastase, lactoferrin, lysozyme, cathepsin G, beta-glucoronidase, azurocidin, h-lamp-2 and alpha-enolase are also found in connection with pANCA.

Positive IIFT results should always be confirmed with a monospecific anti-PR3 and anti-MPO test (e.g. ChLIA or ELISA (International Consensus Statement, Savige et al., Am J Clin Pathol, 1999 & 2003)). Since not all cANCA and pANCA are positive in a monospecific test, the highest sensitivity and specificity for ANCA detection can only be achieved with parallel performance of IIFT and ChLIA/ELISA.

pANCA are also of great relevance in the differentiation of chronic inflammatory bowel diseases (67 % ulcerative colitis, 7 % Crohn's disease). DNA-bound lactoferrin has been identified as the main target antigen (Teegen et al., Ann N Y Acad Sci, 2009).

Innovative Anti-PR3-hn-hr ELISA with designer antigen: The reagent wells of the Anti-PR3-hn-hr ELISA are coated with a mixture of human native (hn) and human recombinant (hr) PR3. Owing to this, the test as a significantly higher sensitivity (94%) at a very good specificity (99%) compared to other ELISAs using only a native antigen (88% and 78%, respectively). The significantly higher sensitivitiy of the PR3-hn-hr ELISA and its suitability or identifying relapses in patients under treatment has been described in an independent publication (Damoiseaux et al., Ann Rheum Dis, 2009).

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Granulocytes (EOH)/ HEp-2 + granulocytes (EOH)/ granulocytes (HCHO)	Gold standard IIF screening test for ANCA	FA 1201-####-13	155
	Granulocytes (EOH)/ HEp-2 + granulocytes (EOH)/ granulocytes (HCHO)/ PR3/MPO/GBM/ BIOCHIPs	ANCA screening and confirmation on monospecific EUROPLUS antigen dots (incl. GBM) in one test system	FA 1###-####-25	155
ELISA	Human proteinase 3 native and recombinant (human cDNA expressed in a human cell line, PR3-hn-hr)	Monospecific confirmatory test for anti-PR3 antibodies: increased sensitivity with highest specificity	EA 1201-9601-2 G	143
	Human MPO native	Monospecific confirmatory test for anti-MPO	EA 1211-9601 G	143
	PR3, MPO, elastase, cathepsin G, BPI, lactoferrin	Profile ELISA with ANCA-associated antigens	EA 1200-1208-1 G	143
Blot	PR3, MPO, GBM	Monospecific multiplex test for ANCA	DL 1200-1601-3 G	140
ChLIA	Human recombinant proteinase 3	Monospecific confirmatory test for anti-PR3 antibodies	LA 1201-10010 G	147
	Human MPO, native	Monospecific confirmatory test for anti-MPO antibodies	LA 1211-10010 G	147
	GBM (purified alpha-3 chain of type IV collagen)	Qualitative and quantitative test for anti-GBM antibodies	LA 1251-10010 G	147

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q103 at www.euroimmun.com

Rheumatology

CTD · SLE · Vasculitis · RA · APS

For more information on this subject scan the QR code or enter the Quick Link code q037 at www.euroimmun.com

Rheumatoid arthritis

Clinical information: Rheumatoid arthritis (RA) is characterised by painful, swollen joints, movement restriction and progressing joint destruction. 0.5 to 1 % of the worldwide population is affected, women approximately twice as often as men. Most new cases are diagnosed in women between 55 and 64 years and in men between 65 and 75 years. A large share of RA patients (approx. 70 %) produce autoantibodies against citrullinated peptides (ACPA). Consequently, immune complexes are formed and the inflammation of the joints proceeds.

Autoantibodies in RA appear on average 3 to 5 years, sometimes even 15 years before the first joint complaints. The most important autoantibodies in preclinical RA are rheumatoid factors (RF) and ACPA and those directed against Sa (citrullinated vimentin) and citrullinated enolase peptide 1 (CEP-1). For the detection of ACPA, mainly cyclic citrullinated peptides (CCP) are used as target antigens. ACPA are specific for RA and indicators of a severe, erosive destructive course. During the shift from the undifferentiated arthritis phase towards RA, ACPA levels increase and remain high. ACPA have a high predictive value for the development of RA. Their detection supports the early recognition of the disease.

Diagnostics: Since 2010, ACPA determination has been a component of the RA classification criteria of the American College of Rheumatology (ACR) and the European League Against Rheumatism (EULAR). ACPA are determined in parallel to rheumatoid factors. According to the scoring system of the ACR-/EULAR classification, a high ACPA or RF titer is more relevant for the diagnosis of RA than a lower titer. Laboratory findings such as increased erythrocyte sedimentation rate, increased C-reactive protein and the detection of RF and/or ACPA are indicative of RA.

With ELISA and ChLIA, two different test systems are available for the determination of autoantibodies against CCP. For the detection of ACPA, the CCP antigen of the 2nd generation (CCP 2) is considered the gold standard. Test systems based on this antigen provide the highest sensitivity (80 %, with a specificity of 98 %). Antibodies against CCP are mainly IgG class antibodies and are more specific than RF, with a similar sensitivity. Anti-CCP antibodies are found in up to 60 % of RF-negative patients.

CEP-1 is a further relevant autoantigen which is present in approx. 60 % of the anti-CCP positive RA patients. The detection of antibodies against CEP-1 is highly specific for RA (specificity: 97.6 %) and therefore suited as a supplementary test for confirmation of serological findings. Moreover, the detection of anti-CEP-1 supports the risk stratification: Anti-CEP-1 antibodies are associated with an erosive disease course and with interstitial lung diseases (Alunno et al. 2018). Furthermore, anti-CEP-1 antibodies occur with a subtype of RA in which smoking and the HLA-DRB1 “shared epitope” alleles represent the main risk factors (Mahdi et al. 2009). Since anti-CEP-1 antibodies are directed against a target antigen which actually occurs in RA, their detection can provide insight into the cause and the pathogenesis of the disease.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	HEp-2 cells	Gold standard ANA screen	FA 1520-####	161
ELISA	Cyclic citrullinated peptide (CCP)	Highly specific and prognostic test for the detection of RA-specific anti-CCP antibodies	EA 1505-9601 G	144
	Citrullinated alpha-enolase peptide 1 (CEP-1)	Highly specific autoantigen associated with particular subtypes of RA	EA 151b-9601 G	144
	Human IgG	Conventional rheumatoid factor IgM detection (also available for detection of rheumatoid factor IgA/IgG)	EA 1814-9601 M	145
ChLIA	Cyclic citrullinated peptides (CCP)	Highly automated random access test for detection of RA-specific anti-CCP antibodies	LA 1505-10010 G	147

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q093 at www.euroimmun.com

Rheumatology

CTD · SLE · Vasculitis · RA · APS

For more information on this subject scan the QR code or enter the Quick Link code q004 at www.euroimmun.com

Anti-phospholipid syndrome

Clinical information: The first official classification criteria for anti-phospholipid syndrome (APS) were drafted in 1998 at a workshop at the 8th International Symposium on Anti-phospholipid Antibodies in Sapporo, Japan (Sapporo criteria; Wilson et al., Arthritis & Rheumatism 1999). According to these criteria, APS can be considered proven if at least one clinical and one serological criterion are met. Clinical criteria include vascular thrombosis, which must be established according to the stipulated criteria, and pregnancy complications such as premature births, spontaneous abortions and eclampsia. When the criteria were updated in 2004 (Miyakis criteria; Miyakis et al., Journal of Thrombosis and Haemostasis 2005) antibodies against β2 glycoprotein 1 were added. Fulfilment of the criteria now encompasses at least one of the following three parameters: antibodies against cardiolipin (ACA; IgG or IgM) or β2 glycoprotein 1 (anti-β2GP1; IgG or IgM) or a positive lupus anticoagulant (LA) test. The latter is a coagulation test. According to official recommendations the serological criteria for APS diagnosis are only fulfilled when the result is confirmed 12 weeks later in a further test. A further update of the classification criteria in 2012 (Lakos et al., Arthritis & Rheumatism 2012) included the additional recommendation that when IgG and IgM tests for ACA or anti-β2GP1 IgG are negative, IgA should be tested as well.

In serological APS diagnostics autoantibodies of several immunoglobulin classes (IgAGM) can occur simultaneously, although often only one Ig class is detected. The association of particular immunoglobulin classes (IgAGM) with particular clinical parameters is controversially discussed.

Since around 10% of the healthy normal population exhibit anti-phospholipid antibodies (APLA) in the form of ACA or LA and these antibodies can also be induced by infections or specific medications (e.g. procainamide and hydralazine), both a positive serological result and a clinical criterion must be present in order to establish the diagnosis APS.

Diagnostics: ELISA is the method of choice for detection of APLA, since it is highly sensitive, simple to perform and does not require fresh plasma. EUROIMMUN offers microtiter ELISAs for quantitative determination of autoantibodies against cardiolipin, β2GP1 and phosphatidylserine. The immunoglobulin classes IgA, IgG and IgM can be investigated separately or together (IgAGM). Alternatively, lupus anticoagulant can be determined using a multi-stage procedure according to the guidelines of the International Society on Thrombosis and Haemostasis. The phospholipid-dependent coagulation tests used for this purpose have a high specificity for APS, but a low sensitivity. Moreover, since there is no gold standard, results vary depending on the test method used, making it difficult to obtain reliable serological results.

EUROIMMUN ELISAs for the detection of antibodies against cardiolipin and β2GP1 show a very high specificity in clinical studies. Sera from patients with viral hepatitis or parvovirus B19 infections and sera from healthy blood donors demonstrated only 0 to 2% positive results, while in studies using tests from other manufacturers values of between 12 and 50% were obtained. APLA can occur in cases of syphilis, which explains the somewhat high occurrence (11 to 13%) of ACA and anti-β2GP1 antibodies in these patients. The prevalence of both autoanti-

bodies in APS (86 %) and SLE (24 to 25 %) corresponds to data in current literature. For ACA in particular a very high agreement with an international meta-study was found (cohort of 1000 patients, 88 % of APS patients were ACA positive; Cervera R. et al., Arthritis & Rheumatism 2002).

Product overview

Method	Substrate	Application	Order number	Page
ELISA	Cardiolipin (AMA-M1)	Highly specific ELISA for the detection of anti-cardiolipin antibodies of classes IgG and IgM as recommended by the consensus statement (also available for detection of IgA and IgAGM)	EA 1621-9601 G/M	145
	β2-glycoprotein 1	ELISA for the detection of antibodies against β2-glycoprotein 1 of classes IgG and IgM as recommended by the consensus statement (also available for detection of IgA and IgAGM)	EA 1632-9601 G/M	145
	Phosphatidylserine	ELISA for the detection of antibodies against phosphatidylserine (also available for detection of IgA and IgAGM)	EA 162a-9601 G/M	145

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g052 at www.euroimmun.com

Hepatology

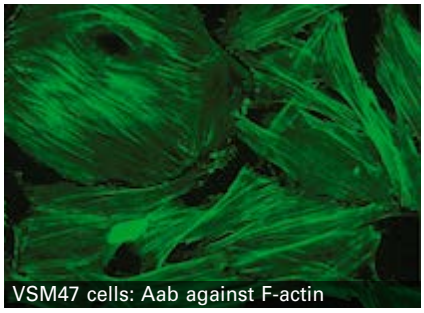
Autoimmune hepatitis · Primary biliary cholangitis

For more information on this subject scan the QR code or enter the Quick Link code q007 at www.euroimmun.com

Autoimmune hepatitis

Clinical information: Autoimmune hepatitis (AIH; previously called lupoid hepatitis, chronic active hepatitis) predominantly affects women (75 % of cases). The disease manifests by an increase in bilirubin, liver enzymes and immunoglobulins, by characteristic histological changes (liver biopsy shows necrosis of the parenchyma cells with lymphocyte and plasma cell infiltration) and the presence of various autoantibodies. The disease can occur from early childhood up to old age, but is most frequent in young to middle adulthood. In Western Europe the incidence of AIH is 1.9 cases per 100,000 inhabitants per year. Untreated, AIH soon develops into liver cirrhosis. However, with low-dose immunosuppressive therapy administered in good time and consistently right up until death, patients have a normal life expectancy. In the differential diagnosis, an infection with hepatitis viruses must be ruled out through the investigation of the appropriate serological parameters.

Diagnostics: Circulating autoantibodies have come to play a significant role in the diagnosis of AIH. They occur in the majority of patients, although their role in pathogenesis is debatable. There is no clear correlation between the disease activity or prognosis and the antibody titer.


VSM47 cells: Aab against F-actin

The following autoantibodies are associated with AIH: antibodies against cell nuclei (ANA), native DNA, smooth muscle (ASMA, most important target antigen: F-actin), soluble liver antigen/liver-pancreas antigen (SLA/LP), liver-kidney microsomes (LKM-1, target antigen: cytochrome P450 IID6) and liver cytosolic antigen type 1 (LC-1, target antigen: formiminotransferase cyclodeaminase). The autoantibodies against SLA/LP that can today be detected by various EUROIMMUN enzyme immunoassays have the highest diagnostic accuracy of all antibodies involved in AIH. Anti-SLA/LP antibodies occur in AIH either alone or together with other autoantibodies. Their prevalence is only between 10 and 30 %, but the predictive value is almost 100 %. Essentially, every positive finding is evidence of autoimmune hepatitis (as long as the corresponding clinical symptoms are present).

Furthermore, high concentrations of autoantibodies against smooth muscles (ASMA) indicate AIH. One part of the antibodies is directed against conformational epitopes of F-actin, which are only present in frozen tissue sections or tissue cells and cannot therefore be detected by ELISA or Westernblot. In contrast to other ASMA, antibodies against F-actin are a very specific marker for type 1 AIH. With the cell line VSM47 (vascular smooth muscle) the microfilamentous (MF) fluorescence pattern can be easily and clearly differentiated from non-MF patterns, thus facilitating the diagnosis of type 1 AIH.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	VSM47	Specific cell line for the detection of antibodies against F-actin by IIFT	FA 1651-####	162
	HEp-2 cells, liver, kidney, stomach	Basic profile for the detection of ANA, AMA, ASMA, LKM	FA 1800-####-3	163
	Liver, VSM47, HEp-2 cells, liver, kidney, stomach	Comprehensive detection of AIH-specific antibodies with a BIOCHIP Mosaic of 6 substrates	FA 1300-####-8	156
ELISA	Soluble liver antigen/ liver-pancreas antigen (SLA/LP)	Specific antibodies for precise discrimination from other hepatitides	EA 1302-9601 G	143
	Liver-kidney microsomes (LKM-1)	Serological marker for type 1 AIH	EA 1321-9601 G	143
	Cytosolic liver antigen type 1 (LC-1)	Supplementary diagnostic parameter for AIH	EA 1307-9601 G	143
Blot	AMA-M2, M2-3E, Sp100, PML, gp210, LKM-1, LC-1, SLA/LP, Ro-52	EUROLINE Profile Autoimmune Liver Diseases enables analysis of nine different AIH- and PBC-relevant autoantibodies on one test strip	DL 1300-1601-4 G	140
	AMA-M2, M2-3E, Sp100, PML, gp210, LKM-1, LC-1, SLA/LP, SS-A, Ro-52, Scl-70, CENP A, CENP B and PGDH	The EUROLINE enables analysis of fourteen different autoantibodies for the diagnosis of PBC, in suspected cases of AIH and overlap syndromes	DL 1300-1601-5 G	140

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g057 at www.euroimmun.com

Hepatology

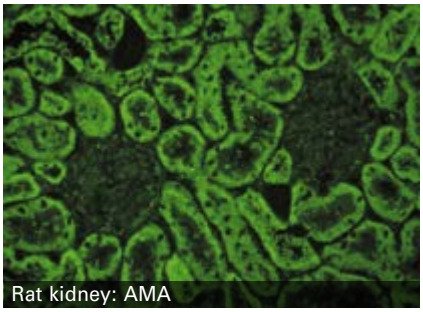
Autoimmune hepatitis · Primary biliary cholangitis

For more information on this subject scan the QR code or enter the Quick Link code q035 at www.euroimmun.com

Primary biliary cholangitis

Clinical information: Primary biliary cholangitis (PBC) is an immune-mediated chronic inflammatory cholestatic liver disease of unknown aetiology. The disease is characterised by female predominance (> 90 %) with most cases observed between the ages of 40 and 60. PBC incidence in different parts of the world is estimated to be 4 to 31 cases/million persons per year. PBC is marked by lymphocellular infiltration around the small intra-hepatic biliary ducts (bile canaliculi) and the build-up of bile (cholestasis). The disease often begins with unspecific, very varying general symptoms, such as itching (pruritus), fatigue and pain in the upper right region of the abdomen. An obstructive jaundice develops after a varying period of time. The increase in serum lipids is an important indicator for PBC. Histologically, changes occur in the liver corresponding to a chronic, non-suppurative destructive cholangitis: granulating pericholangitis, i.e. slowly progressing destruction of the small and medium-sized biliary ducts with subsequent fibrosis, the final stage of which is complete cirrhosis. In addition to the liver, often other organs with exocrine functions are also affected, above all the lachrymal and salivary glands and the pancreas.

Diagnostics: The diagnosis of PBC includes liver function tests (determination of alkaline phosphatase, aspartate transaminase and alanine transaminase), the determination of serum lipids, screening for anti-mitochondrial antibodies (AMA) and anti-nuclear antibodies (ANA) and the differentiation from other chronic inflammatory diseases of the liver, such as chronic viral hepatitis, autoimmune hepatitis or primary sclerosing cholangitis.


Rat kidney: AMA

The detection of AMA is of great importance in the diagnosis of PBC. Antibodies against the M2 antigen are the most sensitive and specific diagnostic marker. These antibodies can be found in 94 % of PBC patients. High-titer anti-M2 antibody seropositivity is an important tool in the diagnosis of PBC and a very powerful predictor of future development of PBC in patients without significant liver function disorders or symptoms suggestive of cholestatic diseases. Besides AMA, ANA may also be found in about one third of patients with PBC by indirect immunofluorescence. Promyelocytic leukaemia (PML) proteins and Sp100, which generate a nuclear dot pattern in IIFT, and two components of the nuclear pore complex (gp210 and p62) that have been specifically associated with a perinuclear pattern have been identified as specific ANA target antigens in PBC.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Kidney	Gold standard for the detection of AMA	FA 1620-####	162
	HEp-2 cells, liver, kidney, stomach	Basic profile for the detection of ANA, AMA, ASMA	FA 1800-####-3	163
	HEp-2 cells	Detection of further antibodies besides AMA: nuclear dots (Sp100, PML) and nuclear membrane (gp210 and p62)	FA 1520-####	161
	Kidney, stomach, HEp-2 cells, M2 BIOCHIPs	Mosaic of tissue substrates and HEp-2 cells supplemented by a EUROPLUS BIOCHIP with purified M2 antigen	FA 1620-####-5	162
ELISA	AMA M2-3E	ELISA with highest sensitivity through a combination of all three multi-enzyme complexes of the M2 antigen	EA 1622-9601 G	145
Blot	AMA-M2, M2-3E, Sp100, PML, gp210, LKM-1, LC-1, SLA/LP, Ro-52	EUROLINE Profile Autoimmune Liver Diseases enables analysis of nine different AIH- and PBC-relevant autoantibodies on one test strip	DL 1300-1601-4 G	140
	AMA-M2, M2-3E, Sp100, PML, gp210, LKM-1, LC-1, SLA/LP, SS-A, Ro-52, Scl-70, CENP A, CENP B and PGDH	The EUROLINE enables analysis of fourteen different autoantibodies for the diagnosis of PBC, in suspected cases of AIH and overlap syndromes	DL 1300-1601-5 G	140

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g091 at www.euroimmun.com

Gastroenterology

Coeliac disease · CIBD · Autoimmune gastritis / Pernicious anaemia

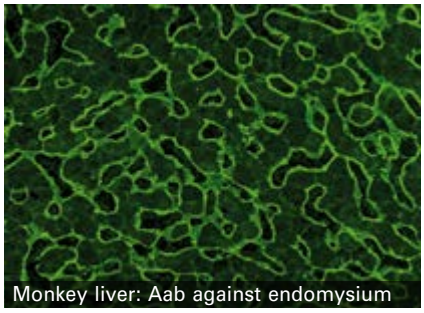
For more information on this subject scan the QR code or enter the Quick Link code q048 at www.euroimmun.com

Coeliac disease

Clinical information: Coeliac disease (also gluten-sensitive enteropathy, GSE) is a systemic autoimmune disease in which genetic predisposition play a pronounced role. Coeliac disease may affect different organ systems. Its prevalence is estimated to be around 1%, with experts assuming a large number of undiagnosed cases due to atypical or mild symptoms. Coeliac disease mostly manifests as a severe inflammation and damage of the mucosa of the small intestine (enteropathy). In conjunction with the resulting disruption of the nutrient absorption, a wide range of clinical gastrointestinal and non-gastrointestinal symptoms (among others chronic diarrhoea, abdominal pain, weight loss), can be observed. In addition, the clinical manifestation of coeliac disease may include a chronic rash in the form of Duhring's dermatitis.

Coeliac disease is caused by an overreaction of the immune system following ingestion of gluten, especially of the so-called gliadin, which accounts for around 90% of the protein content of many grains. Gliadin can be only partially digested in the small intestine. If the intestinal epithelium presents gaps, as typically occurs in patients with coeliac disease, gliadin fragments may pass the intestinal barrier and reach the underlying connective tissue. There, the enzyme tissue transglutaminase (tTG) deamidates the amino acid glutamine into glutamic acid at specific loci of the gliadin peptides. Given a genetic predisposition, this modification causes the peptides to have an immunological effect. Activation of the B cells leads to the formation of antibodies against the deamidated gliadin peptides (DGP) and the body-own tTG. Furthermore, T-cells secrete proinflammatory cytokines, which cause inflammatory reactions in the tissue.

Diagnostics: According to the guidelines of the European Society of Pediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) (Husby et al., 2020), patients with corresponding symptoms should be first investigated for anti-tTG antibodies (IgA) and total IgA antibodies. In the case of a positive test result, this should be confirmed by determination of EmA (IgA). Moreover, the guidelines point out the additional use of coeliac-specific IgG-based tests, e.g. tests for detection of antibodies against DGP. If there is a general IgA deficiency – a state often observed in coeliac disease patients – anti-DGP antibodies (IgG) are considered an important indicator of coeliac disease. EmA can be detected by IIFT on tissue sections of primate liver, primate oesophagus or primate intestine. The target antigen of EmA is tTG. Anti-tTG antibodies can be detected by ChLIA, ELISA or EUROLINE tests. In addition, anti-DGP antibodies can be detected using ChLIA, ELISA, EUROLINE and the monospecific EUROPLUS substrate.


Monkey liver: Aab against endomysium

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Liver	Characteristic fluorescence enables easy EmA identification	FA 1914 A or G	164
	Oesophagus	Classic substrate for detection of EmA	FA 1911 A or G	165
	Liver, gliadin (GAF-3X) BIOCHIPs	Mosaic of tissue substrate supplemented by EUROPLUS BIOCHIP with GAF-3X antigen	FA 1914-1 A or G	164
ELISA	Tissue transglutaminase (endomysium; class IgA)	Established anti-tTG ELISA to support the diagnosis and monitor therapy	EA 1910-9601 A	145
	Tissue transglutaminase (endomysium; class IgG)	ELISA to support the diagnosis (esp. in IgA deficiency)	EA 1910-9601 G	145
	Gliadin (GAF-3X; class IgG)	Detection of Aab against DGP (esp. in IgA deficiency)	EV 3011-9601 G	146
	Gliadin (GAF-3X; class IgA)	Supplementary serological test	EV 3011-9601 A	146
ChLIA	Tissue transglutaminase (endomysium; class IgA)	ChLIA for determination of anti-tTG antibodies (IgA)	LA 1910-10010 A	147
	Tissue transglutaminase (endomysium; class IgG)	ChLIA to support the diagnosis (esp. in IgA deficiency)	LA 1910-10010 G	147
	Gliadin (GAF-3X; class IgG)	ChLIA for detection of Aab (esp. in IgA deficiency)	LV 3011-10010 G	147
	Gliadin (GAF-3X; class IgA)	Supplementary serol. test	LV 3011-10010 A	147
Blot	Tissue transglutaminase, gliadin (GAF-3X)	Detection of selective IgA deficiency and ">10xULN"	DL 1910-#### G DL 1910-#### A	142
	Saccharomyces cerevisiae, intrinsic factor, parietal cells (PCA), gliadin (GAF-3X), tissue transglutaminase (tTG)	EUROLINE for differential diagnostics of coeliac disease, autoimmune gastritis/pern. anaemia & Crohn's disease	DL 1360-#### G DL 1360-#### A	140

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q107 at www.euroimmun.com

Gastroenterology

Coeliac disease · CIBD · Autoimmune gastritis / Pernicious anaemia

For more information on this subject scan the QR code or enter the Quick Link code q011 at www.euroimmun.com

Chronic inflammatory bowel diseases

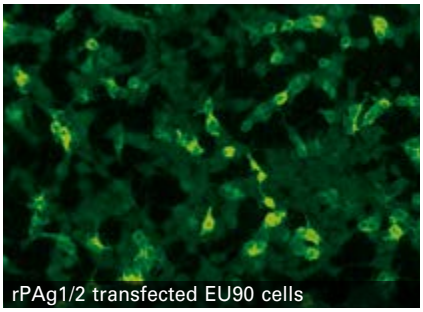
Clinical information: The most important chronic inflammatory bowel diseases (CIBD) include ulcerative colitis (UC) and Crohn's disease (CD).

UC belongs to the CIBD with autoimmune reactions against the mucosa and submucosa of the colon or rectum and increased immune reactions against the intestinal flora. A genetic susceptibility for UC is assumed and the disease is supposed to be triggered by certain environmental factors. The inflammation spreads continuously from the rectum, that is from the anal region upwards.

CD is classified as an autoimmune disease of the intestinal mucosa and is characterised by a high recurrence rate. The chronic granulomatous inflammation, which can affect the whole digestive tract from the oral cavity to the anus, is found in most cases only in the lower small intestine (terminal ileum) and the large intestine (colon), very rarely in the oesophagus and mouth. CD is characterised by discontinuous, segmental attack on the intestinal mucosa. Resulting thereof, several sections of the intestine may be affected simultaneously, being interrupted by healthy sections.

Diagnostics: Initial differentiation between irritable bowel syndrome and CIBD can be achieved by non-invasive antigen detection of calprotectin in stool and thus provide a decisive precharacterisation of bowel-associated inflammation (see chapter Calprotectin). Alongside the single IIF tests, the high diagnostic demands on differentiated CIBD diagnostics are also met by various highly specific mosaics (CIBD profiles) specifically developed for serological diagnostics of the autoimmune intestinal diseases CD and UC.

Autoantibodies against the exocrine pancreas are a characteristic feature of CD. They have a high disease-specific significance due to their organ specificity, disease association and frequently high serum concentration. Due to the fact that the inflammation of the intestinal wall in CD is caused by the autoantigens contained in the pancreas secretion, particularly the proteoglycans CUZD1 and GP2, the determination of autoantibodies against the pancreas antigens rPAg1 (CUZD1) and PAg2 (GP2) using IIFT represents a new dimension in serological CD diagnostics. Antibodies against Saccharomyces cerevisiae (ASCA) enrich the serodiagnostics for CD by a further specific parameter.


rPAg1/2 transfected EU90 cells

Autoantibodies against intestinal goblet cells, which occur exclusively in UC, are pathognomonic markers for this autoimmune disease. The target antigen responsible for UC has not yet been exactly identified.

Product overview

Method	Substrate/Analyte	Application	Order number	Page
IIFT	Pancreas antigens rPAg1(CUZD1) / rPAg2(GP2), intestinal goblet cells	Efficient screening and differentiation test for detection of antibodies in CIBD; differentiation between UC and CD	FA 1391-####-3	165
	Pancreas antigens rPAg1(CUZD1) / rPAg2(GP2), intestinal goblet cells, granulocytes, Saccharomyces cerevisiae	Efficient screening and differentiation test for detection of antibodies in CIBD; differentiation between UC and CD	FA 1391-####-7	156
ELISA	Saccharomyces cerevisiae	Monospecific detection of antibodies against S. cerevisiae in CD (also available for IgG detection)	EV 2841-9601 A	146
Antigen ELISA	Faecal calprotectin	Ideally suited for discrimination of inflammatory bowel disease from irritable bowel syndrome and for monitoring of the disease course	EQ 6831 W	261
Blot	Saccharomyces cerevisiae, intrinsic factor, parietal cells (PCA), gliadin (GAF-3X), tissue transglutaminase (tTG)	EUROLINE profile for differential diagnostics of coeliac disease, autoimmune gastritis/pernicious anaemia and CD	DL 1360-#### G DL 1360-#### A	140

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g062 at www.euroimmun.com

Gastroenterology

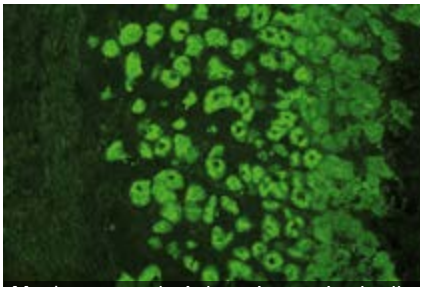
Coeliac disease · CIBD · Autoimmune gastritis / Pernicious anaemia

For more information on this subject scan the QR code or enter the Quick Link code q034 at www.euroimmun.com

Autoimmune gastritis / Pernicious anaemia

Clinical information: Autoimmune gastritis (AIG) is a chronic inflammation of the stomach mucosa which hinders iron and vitamin B12 uptake and may lead to atrophic gastritis with malabsorption. The stomach mucosa is infiltrated by lymphocytes, plasma cells and granulocytes. Epithelial cells become necrotic, and main and parietal cells are replaced by mucoid cells. As a final stage, atrophy develops over many years. AIG causes a limited production of pepsin, hydrochloric acid and intrinsic factor (IF). Over the course of year, the vitamin B12 deficiency leads to pernicious anaemia (PA). In most patients, AIG remains asymptomatic over many years until reaching advanced stages of atrophy. Symptoms of PA are anaemia, fatigue, light-headedness and tachycardia. Moreover, the vitamin B12 deficiency hinders DNA synthesis, which causes megaloblasts to be formed in the bone marrow and the gastrointestinal epithelium. This results in malabsorption and diarrhoea with weight loss, anorexia, glossitis, icterus and neurological complaints.

Diagnostics: AIG is characterised by the presence of autoantibodies against parietal cells (PCA) and IF.


Monkey stomach: Aab against parietal cells

Antibodies against PCA occur in patients with AIG as well as PA. They mainly belong to the classes IgG and IgA. The prevalence of antibodies against PCA is very high in almost all patients with chronic-atrophic gastritis, amounting to nearly 100%. Antibodies against PCA also have a very high sensitivity for PA, amounting to 80% to 90% at the time of diagnosis. To increase the specificity, EUROIMMUN developed the Anti-ATP4B ELISA, which specifically detects the β-subunit of H+/K+-ATPase, the main antigen of anti-parietal cell antigens. Over the course of disease, their prevalence decreases due to the progressing destruction of the parietal cells. With respect to the specificity of the anti-PCA antibodies, it must be taken into account that they can also be detected in patients with endocrinopathies and in healthy blood donors.

IF is a glycoprotein secreted by the parietal cells. It forms complexes with vitamin B12, the absorption of which in the ileum is impaired by anti-intrinsic factor antibodies (IFA). Sera from AIG or PA patients contain two types of IFA (both IgG). IFA of type 1 react with the vitamin B12 binding site of the IF, IFA of type 2 hinder the binding of the IF to the receptors in the ileum. IFA have a very high specificity for AIG. With PA, IFA occur in 40% to 80% of patients depending on the disease stage.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Stomach	Standard method for the detection of antibodies against parietal cells	FA 1360-####	157
	Stomach, intrinsic factor BIOCHIPs	The substrate combination of primate stomach and intrinsic factor BIOCHIPs in IIFT facilitates diagnosis of pernicious anaemia	FA 1362-####-1	157
	ATP4B	Semiquantitative or quantitative determination of antibodies against the recombinant beta-subunit of H+/K+-ATPase of the parietal cells	EA 1361-9601-1 G	143
ELISA	Parietal cells (PCA)	Semiquantitative or quantitative determination of antibodies against the native target antigen H^+/K^+-ATPase	EA 1361-9601 G	143
	Intrinsic factor	Specific detection of antibodies against intrinsic factor	EA 1362-9601 G	143
Blot	Saccharomyces cerevisiae, intrinsic factor, parietal cells (PCA), gliadin (GAF-3X), tissue transglutaminase (tTG)	EUROLINE profile for differential diagnostics of coeliac disease, autoimmune gastritis/pernicious anaemia and Crohn's disease	DL 1360-#### G DL 1360-#### A	140

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q086 at www.euroimmun.com

Endocrinology

Diabetes · Thyroid diseases

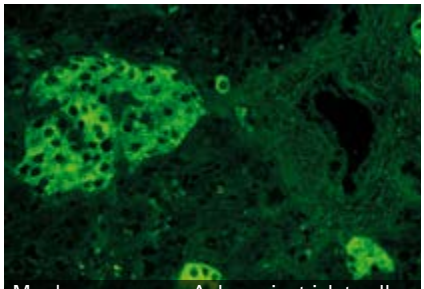
For more information on this subject scan the QR code or enter the Quick Link code q012 at www.euroimmun.com

Diabetes

Clinical information: Type I diabetes mellitus (T1DM) is an autoimmune disease which is characterised by the destruction of the insulin-producing beta cells of the pancreatic islets of Langerhans. Genetic predisposition, as well as exogenous factors, e.g. viral infections, diet or obesity are considered to be the causative factors of the disease. Autoantibodies occurring with T1DM are called islet cell antibodies (ICA) and are directed against several antigens of the pancreatic islet cells. The most relevant antibodies are the 65-kDa isoform of the enzyme glutamic acid decarboxylase (GAD65), insulinoma-associated antigen 2 (IA2), zinc transporter 8 (ZnT8) and insulin.

The autoimmune reaction usually sets in years before the hyperglycaemic symptoms of T1DM. The destructive process, i.e. insulitis, is characterised by immune cell infiltration in the pancreatic islets. T1DM becomes manifest when the major part of beta cells has been destroyed and the blood sugar level is no longer regulated. This development mostly takes place during childhood or adolescence. T1DM is the most severe form of diabetes and leads to lifelong dependence on insulin injections. 5 to 10% of all diabetes cases are of type I. The worldwide incidence of T1DM increases by 3 to 5% each year.

Diagnostics: ICA are detected in 70 to 80% of newly diagnosed T1DM cases. The different antibodies of this group usually develop subsequently, not simultaneously. The development of ICA precedes manifest T1DM by months or even years. In 90% of patients, one or more ICA can be detected even before the onset of clinical symptoms. The higher the number of different ICA in one person, the higher is their risk of developing T1DM.


Monkey pancreas: Aab against islet cells

Autoantibodies against insulin (IAA) are often the first autoantibodies to occur in T1DM. They can be found in almost all prediabetic persons; their prevalence decreases with increasing age of the patients. IAA can be detected in 80% of patients under ten years and around 60% of patients between 10 and 20 years of age. Children under 5 years present the highest IAA titers.

Autoantibodies against GAD65 (GADA) can be found in around 70% of patients before onset of T1DM and in 70 to 90% of T1DM patients at the beginning of the disease. GADA are the most sensitive markers for T1DM occurring in the adult age, as well as for LADA (latent autoimmune diabetes in adulthood). LADA is present in 3 to 12% of patients with phenotypical type II diabetes mellitus, which is characterised by insulin resistance and disturbed insulin secretion from the beta cells. 90% of LADA patients present GADA and most of them are positive for GADA already several years before the diagnosis.

Autoantibodies against IA2 can be found in 50 to 70 % of children and adolescents and in 30 to 50 % of adults with newly diagnosed T1DM. In around half of the patients, IA2A are detected even prior to the disease manifestation. IA2A are highly specific for T1DM.

Anti-ZnT8 antibodies are detectable in the sera of many children with prediabetes. They persist until manifestation of T1DM. The anti-ZnT8 level drops rapidly over the first years following disease onset. Anti-ZnT8 antibodies are also detected in nearly 25 % of LADA patients. As with other autoantibodies, their presence can predict the transition to the insulin-dependent stage in LADA patients. Combined determination of antibodies against GAD65, IA2, ZnT8 and insulin enables the identification of T1DM already at disease onset in 98 % of cases.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Pancreas	Detection of autoantibodies against islet cells (ICA)	FA 1020-#### FC 1020-####	151
ELISA	Glutamic acid decarboxylase (GAD)	Solid-phase test systems for non-radioactive, monospecific detection of autoantibodies against the biochemically characterised antigens GAD, IA2 and ZnT8	EA 1022-9601 G	143
	Tyrosine phosphatase (IA2)		EA 1023-9601 G	143
	Zinc transporter 8 (ZnT8)		EA 1027-9601	143
	GAD/IA2 pool		EA 1022-9601-1 G	143
RIA	Insulin	Liquid-phase test systems for radioactive, monospecific detection of autoantibodies against the biochemically characterised insulin antigen	RA 1024-####	150

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g064 at www.euroimmun.com

Endocrinology

Diabetes · Thyroid diseases

For more information on this subject scan the QR code or enter the Quick Link code q038 at www.euroimmun.com

Thyroid diseases

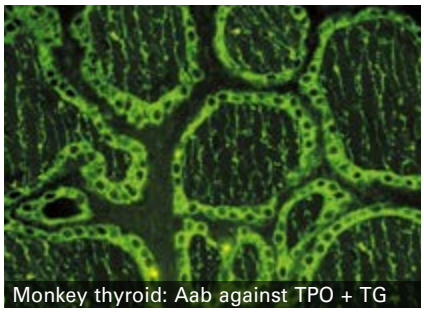
Clinical information: The sensitive equilibrium of the thyroid hormone loop can be disturbed due to the presence of different autoantibodies. Autoimmune thyroid diseases are characterised by antibodies against thyroid microsomes, whose main target antigen is thyroperoxidase (TPO), and antibodies against thyroglobulin (TG) or the receptor of thyrotropin (also known as thyroid stimulating hormone (TSH). The most frequent autoimmune thyroid diseases are Hashimoto's autoimmune thyroiditis (AIT) and immunohyperthyroidism, also known as Graves' disease. While AIT can manifest as a thyroid overfunction (hyperthyroidism) or underfunction (hypothyroidism), Graves' disease is always associated with hyperthyroidism.

Hashimoto's thyroiditis leads to autoimmune-mediated lymphocytic infiltration and consequently to the destruction of the thyroid tissue, in the long term often resulting in reduced thyroid hormone production.

A special form of autoimmune thyroiditis is post-partum thyroiditis, a temporary hypothyroid functional disorder of the thyroid accompanied by high titers of anti-TPO antibodies. The disease affects around 5 to 9% of women after giving birth, and the risk is especially high in diabetes mellitus patients.

The permanent stimulation of TSH receptors by binding of autoantibodies is one of the most relevant factors for the pathogenesis of Graves' disease. The permanent binding activates signal cascades leading to an increased uptake of iodine by the thyroid. As a consequence, the thyroid hormones triiodothyronine (T3) and thyroxine (T4) are produced and secreted in larger quantities.

Diagnostics: In suspected cases of thyroid disease, the TSH concentration in serum should be determined. An increased TSH level indicates hypothyroidism, low values indicate hyperthyroidism. Additionally, the values of the free thyroid hormones FT3 or FT4 in serum should be determined. The detection of antibodies against thyroid antigens enables differentiation of autoimmune thyroid diseases from acute (bacterial) or subacute (non-infectious) thyroiditis or non-autoimmune disturbed thyroid hormone regulation.


Monkey thyroid: Aab against TPO + TG

With Hashimoto's thyroiditis, anti-TPO antibodies are detected in 90% of patients; autoantibodies against TSH receptor (TRAb) are found in 6 to 60%, and anti-TG antibodies occur in 45 to 60% of cases.

TRAb are the most important serological marker in Graves' disease. They are detectable in over 90% of patients. Higher antibody titers are associated with severe disease courses. Moreover, anti-TPO and anti-TG antibodies occur with a prevalence of approx. 80% and 30%, respectively.

For sufficient differential diagnostics, the overall picture obtained from the investigation of different parameters must be evaluated. Besides serological analyses, clinical examinations (e.g. ultrasound, scintigraphy) and symptoms must be taken into account.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Thyroid gland, TG BIOCHIP	Detection of antibodies against TPO and TG	FA 1010-####-3	151
ELISA	TSH receptor	Non-radioactive test systems of 2nd and 3rd generation for the specific detection of TRAb in Graves' disease	EA 1015-9601 G EA 1015-9601-1 G	143 143
	Thyroglobulin (TG)	Non-radioactive test systems for diagnosis of Graves' disease and Hashimoto's thyroiditis	EA 1013-9601 G	143
	Thyroid peroxidase (TPO)		EA 1012-9601 G	143
RIA	TSH receptor	Radioactive test systems of the 2nd generation for the specific detection of TRAb in Graves' disease	RA 1015-10001-1	150
	Thyroglobulin (TG)	Radioactive test systems for diagnosis of Graves' disease and Hashimoto's thyroiditis	RA 1013-10001-#	150
	Thyroid peroxidase (TPO)		RA 1012-#####-#	150
	Thyrotropin (TSH)	Test systems for basic evaluation of thyroid gland function	RD 1018-10001	150
	Free triiodothyronine (FT3)		RD 1016-10001	150
	Free thyroxine (FT4)		RD 1017-10001	150

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To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q095 at www.euroimmun.com

Neurology

PNS · Autoimmune encephalitis · Other

For more information on this subject scan the QR code or enter the Quick Link code q033 at www.euroimmun.com

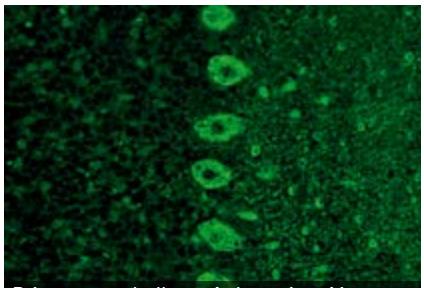
Paraneoplastic neurological syndromes

Clinical information: Paraneoplastic neurological syndromes (PNS) are diseases of the central and peripheral nervous system that occur in direct relation to tumour development. However, these are not caused directly by the tumour, by its metastases or by any side-effects from therapy using cytostatic drugs or radiation treatment. PNS occur in approximately 15% of malignant diseases, particularly in lung tumours.

Depending on the type of tumour, tumour cells express antigens, e.g. amphiphysin, CV2/CRMP5, PNMA2 (Ma2/Ta), Ri, Yo, Hu, ZIC4 or Tr (DNER) which can induce the formation of specific autoantibodies. These autoantibodies bind to the respective antigens localised in the nervous tissue and can thus cause neurological disorders.

In the literature two types of nomenclature are used for PNS-specific autoantibodies. One is based on the first two letters of the index patient's name (e.g. Hu for Hull, Yo for Young, Ma for Margret), the other on the initial letters of the immunohistochemical staining (ANNA = anti-nuclear neuronal antibodies). We use the nomenclature of Posner (anti-Hu, -Yo, -Ma etc.), since this is antigen-based and independent of the test procedure.

Diagnostics: In serological diagnostics, autoantibodies in PNS should always be determined using two unrelated methods. Various line blots (EUROLINE) are available in addition to indirect immunofluorescence tests with special BIOCHIP Mosaics for neurology. Thus, test results can be compared and, if necessary, confirmed. Results should only be used for diagnosis when both test results are congruent in qualitative determination and are in line with the clinical symptoms.



Primate cerebellum: Aab against Yo

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Cerebellum	Basic substrate for autoantibody detection in PNS	FA 1111-####	151
	Cerebellum, nerve, intestinal tissue	Combination of tissue substrates for further diagnostics and antibody differentiation in neurological diseases	FA 1111-####-1	151
	Cerebellum, nerve, intestinal tissue, pancreas	Neurology Mosaic with pancreas tissue for supplementary detection of antibodies against GAD	FA 1111-####-8	152
Blot	Amphiphysin, CV2, PNMA2 (Ma-2/Ta), Ri, Yo, Hu	Secondary test for the detection of the six classic paraneoplastic antibodies	DL 1111-1601-2 G	140
	Amphiphysin, CV2, PNMA2 (Ma-2/Ta), Ri, Yo, Hu, recoverin, SOX1, titin, GAD65, Zic4, Tr (DNER)	Test system for classic paraneoplastic antibodies supplemented with the antigens recoverin, SOX-1, titin, GAD65, Zic4 and Tr (DNER)	DL 1111-1601-7 G	140

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q089 at www.euroimmun.com

Neurology

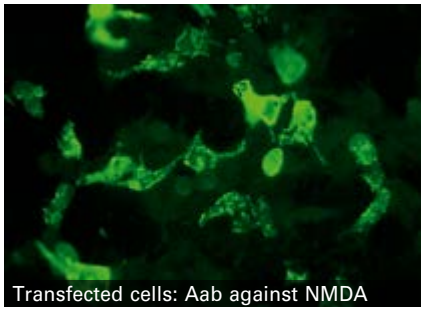
PNS · Autoimmune encephalitis · Other

For more information on this subject scan the QR code or enter the Quick Link code q006 at www.euroimmun.com

Autoimmune encephalitis

Clinical information: Patients with autoimmune encephalopathies exhibit autoantibodies against neuronal cell surface antigens. The antibodies are directed against glutamate receptors (type NMDA or type AMPA), GABAB receptors, DPPX, voltage-gated potassium channels (VGKC) or VGKC-associated proteins (LGI1, CASPR2, TAG-1/contactin-2). Since these antigens play a direct or indirect role in synaptic signal transduction, the associated autoimmunities manifest with seizures and neuropsychiatric symptoms. The resulting conditions include special forms of autoimmune limbic encephalitis, neuromyotonia or Morvan's syndrome. These severe, potentially lethal syndromes can have a non-paraneoplastic or paraneoplastic aetiology. The frequency of underlying tumours ranges from 10 to 70%, depending on the type of antibody. The antibodies most likely play a causal role in the pathogenesis. Since appropriate therapy (immunomodulatory intervention, tumour resection) results in considerable regression of symptoms in most patients, early diagnosis is important for a favourable prognosis.

Diagnostics: The diagnosis of autoimmune encephalitides is generally based on a combination of the characteristic clinical picture, supporting findings from brain MRT, EEG and CSF analysis if necessary, and antibody determination in serum/CSF. Monospecific recombinant assays are the method of choice for serological diagnostics and can be combined with conventional immunohistochemical detection procedures. The following conditions must be excluded by differential diagnostics: infectious encephalitides (especially HSV), other autoimmune aetiologies (e.g. limbic encephalitis with autoantibodies against Hu, Ma2, CV2, amphiphysin) and clinically similar diseases of the central and/or peripheral nervous system.


Transfected cells: Aab against NMDA

A diagnostic discrimination from atypical encephalitides should also be taken into consideration. It should be taken into account that overlap syndromes and combinations of different syndromes can also occur. When a positive serological result is obtained, a comprehensive tumour investigation should be undertaken.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Glutamate receptors (type NMDA) expressed in a human cell line	Highly sensitive mono-specific detection of NMDAR antibodies using a recombinant cell line	FA 112d-####-51	153
	GABA B receptors expressed in a human cell line	Detection of antibodies against GABA B receptors in patients with autoimmune encephalopathies	FA 112l-####-50	152
	Hippocampus, cerebellum, glutamate receptors (type NMDA) expressed in a human cell line, control-transfected cells	Combination of tissue sections for screening of antibodies against cell-surface antigens and NMDAR-transfected cells for monospecific detection of reactivity against NMDAR	FA 111m-####-3	152
	Glutamate receptors (type NMDA), glutamate receptors (type AMPA), CASPR2, LGI1, GABA B receptors, DPPX, expressed in a human cell line	BIOCHIP Mosaic for detection of differentially diagnostically relevant antibodies in autoimmune encephalopathies	FA 112d-####-6	153
	IgLON5 expressed in a human cell line	Detection of antibodies against IgLON5 in patients with atypical encephalitis and accompanying dementia	FA 1151-####-50	154
	LGI1, CASPR2 expressed in a human cell line	Detection of antibodies against LGI1 and CASPR2, the main target antigens in patients with VGKC-antibody-associated syndromes	FA 1439-####-1	151

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g056 at www.euroimmun.com

Neurology

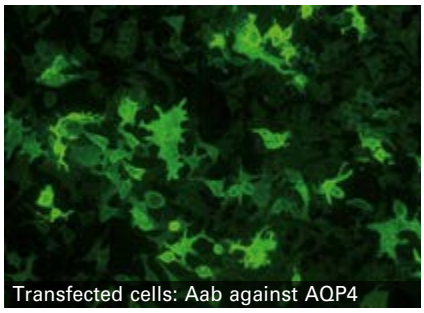
PNS · Autoimmune encephalitis · Other

For more information on this subject scan the QR code or enter the Quick Link code q047 at www.euroimmun.com

Other diseases of the central and peripheral nervous system

Stiff-person syndrome: Stiff-person syndrome (SPS) is a disease of the CNS, which manifests with progressive muscle stiffness, typically in the trunk and extremities, as well as spontaneous or triggered spasms. Up to 80% of patients show a high serum titer and intrathecal synthesis of anti-glutamic acid decarboxylase (GAD) antibodies. Around 5% of all SPS cases are paraneoplastic and usually associated with antibodies against amphiphysin.

Diseases with demyelination: These diseases are characterised by progressive destruction of the myelin sheath. The demyelinating foci are predominantly in the brain and spinal cord. The loss of myelin impairs neuronal signal transduction, leading to motor, visual and sensory disorders. These encompass neuromyelitis optica spectrum disorders (NMOSD), which affect in particular the optical nerve and the spinal cord. NMOSD is associated with pathogenic antibodies against the CNS water-channel protein aquaporin-4 (AQP-4). Antibodies against myelin oligodendrocyte glycoprotein (MOG) occur in around 20% of AQP-4-negative NMOSD patients. Antibodies against MOG also occur in other demyelinating diseases of the CNS, e.g. acute demyelinating encephalomyelitis (ADEM). The determination of anti-AQP-4 and anti-MOG antibodies enables early delimitation from multiple sclerosis, the most important differential diagnosis.


Transfected cells: Aab against AQP4

Autoimmune neuropathies: The peripheral nervous system can also be the target of autoaggression, affecting nerves, ganglia or myelin sheaths. Manifestations encompass motor paralysis, sensitivity disorders or dysautonomy. Autoantibodies against cell-membrane glycolipids or glycoproteins of neurons or glial cells are diagnostically definitive for many forms of peripheral neuropathy. Antibodies against gangliosides are characteristic markers for Guillain-Barré syndrome and its variants, for example, acute motor axonal neuropathy (GM1/ GM1b/ GD1a/ GalNac-GD1a IgG), Miller-Fisher syndrome (GQ1b/GT1a IgG), and multifocal motor neuropathy (GM1/GD1b/ asialo-GM1 IgM). Further, IgM antibodies against myelin-associated glycoprotein (MAG) typically occur in demyelinating polyneuropathy with monoclonal IgM gammopathy.

Myasthenia syndrome: In myasthenia gravis (MG) and Lambert-Eaton myasthenic syndrome (LEMS) the dominant symptom is muscle weakness, which is mainly due to antibody-mediated transmission disorders of the neuromuscular synapses. Antibodies against nicotinic acetylcholine receptors (AChR) are detected in 85 to 90% of patients with generalised MG. Additional reactivities against antigens of the striated muscle (e.g. titin) often occur in connection with neoplasia (thymoma in 15% of all myasthenia cases) and a severe disease course.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Aquaporin-4 (AQP-4) expressed in a human cell line	Substrate for the most sensitive detection of antibodies against AQP-4	FA 1128-####-50	152
	AQP-4, myelin-oligodendrocyte glycoprotein (MOG) expressed in a human cell line	Highly specific detection of antibodies against AQP-4 and MOG	FA 1128-1	154
	Glutamic acid decarboxylase (GAD) 65 kDA expressed in a human cell line	Monospecific detection of antibodies against GAD for diagnosis of stiff-person syndrome	FA 1022-####-50	151
	Nerves	Substrate for the detection of antibodies against medullated nerves (myelin, MAG)	FA 1120-####	152
Blot	GM1, GM2, GM3, GD1a, GD1b, GT1b, GQ1b	EUROLINE for the determination of antibodies against gangliosides for the diagnosis of peripheral neuropathies	DL 1130-1601-2 G/M	127
ELISA	Acetylcholine receptor (AChR)	Sensitive and specific test for the serological diagnosis of MG	EA 1435-9601 G	143
RIA	Acetylcholine receptor (AChR)	Standard method in routine analysis for the serological diagnosis of MG	RA 1435-#####-1	150
IIFT	Acetylcholine receptor (AChR)/muscle-specific kinase (MuSK) expressed in human cell lines	Highly sensitive, monospecific detection of AChR and MuSK antibodies using recombinant cell lines	FA 1435-####-2	158

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g106 at www.euroimmun.com

Nephrology

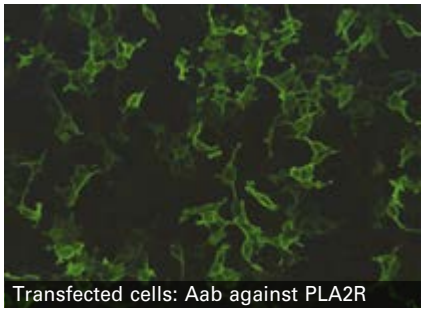
Primary MN · Goodpasture's syndrome

For more information on this subject scan the QR code or enter the Quick Link code q036 at www.euroimmun.com

Primary membranous nephropathy

Clinical information: Primary membranous nephropathy (pMN), also described as primary membranous glomerulonephritis, is a chronic inflammatory disease of the glomeruli which is accompanied by a progressive impairment of the kidney function. The underlying autoimmune mechanism is based on the reaction of autoantibodies directed against the glycoproteins phospholipase A2 receptor (PLA2R) and thrombospondin type-1 domain-containing protein 7A (THSD7A). These transmembrane proteins are expressed on the surface of podocytes in human glomeruli. As a result of the binding of antibodies, the podocytes are damaged and protein enters the primary urine (proteinuria). pMN is the most frequent kidney disorder with nephrotic syndrome in adults. The disease is prevalent in all ethnic groups and genders, with men over 40 years old with white skin colour being more frequently affected. In young women with suspected pMN, lupus nephritis should be considered. Primary MN occurs very rarely in children. The primary form of MN should be discriminated from the secondary form, which can occur in infections, in drug therapy or abuse or intake of toxins, in collagenoses and other autoimmune diseases and in tumours, and which improves with treatment of the underlying disease. The treatment of pMN improves prognosis, particularly with respect to nephrotic syndrome and hypertonicity.

Diagnostics: Diagnosis of pMN is made by kidney puncture, histological examination and electron microscopy of the kidney tissue. Characteristic here is the deposition of immunocomplexes on the outside of the glomerular basement membrane. Serological diagnosis of pMN, however, is less time-consuming and less stressful for the patient. The identification and characterisation of PLA2R and THSD7A as target antigens of circulating antibodies in pMN has proven to be of major importance for non-invasive diagnostics. Autoantibodies of class IgG against PLA2R are highly specific and can be found in the serum of up to 80% of patients with pMN. In contrast, they are not exhibited by healthy blood donors or patients with secondary MN. In healthy persons and patients with secondary MN, these autoantibodies are not present. Reported prevalences for autoantibodies against THSD7A range up to 10%. Even though both antibodies can occur in parallel, anti-THSD7A antibodies are mainly found in anti-PLA2R-seronegative pMN patients. As a supplement to anti-PLA2R antibodies, anti-THSD7A antibodies are therefore another marker in the serological diagnosis of pMN. Due to their high specificity, they are equally suited for differentiation from secondary MN as anti-PLA2R antibodies.


Transfected cells: Aab against PLA2R

The three methods IIFT, ELISA and ChLIA are available for the determination of autoantibodies against PLA2R. The IIFT allows qualitiative to semiquantitative determination of human IgG autoantibodies against PLA2R, whilst the ELISA and ChLIA allow reliable quantification. The anti-PLA2R titer helps to assess the success of therapeutic measures. The serological finding with increase, decrease or disappearance of the antibody titer precedes the clinical image. Thus, the determination of the autoantibody titer has a high predictive value with respect to clinical remission or relapse and estimation of the risk of pMN reoccurence after kidney transplantation.

The Anti-THSD7A IIFT is an ideal supplementary test to the anti-PLA2R test systems. The serological detection rate is increased with parallel determination or a two-step screening strategy in which patients with a seronegative anti-PLA2R result are additionally investigated for anti-THSD7A antibodies.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Phospholipase A2 receptors (PLA2R) expressed in a human cell line	Transfected cells for qualitative and semiquantitative detection of anti-PLA2R and anti-THSD7A antibodies	FA 1254-####-50	156
	Thrombospondin type-1 domain-containing protein 7A (THSD7A) expressed in a human cell line		FA 1254-####-51	156
	Membranous Nephropathy Mosaic 1 (PLA2R and THSD7A)		FA 1254-####-1	156
ELISA	Phospholipase A2 receptors (PLA2R)	ELISA with purified human recombinant receptor for qualitative and quantitative detection of anti-PLA2R antibodies	EA 1254-9601 G	143
ChLIA	Phospholipase A2 receptors (PLA2R)	ChLIA with purified human recombinant receptor for qualitative and quantitative detection of anti-PLA2R antibodies	LA 1254-10010 G	147

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g088 at www.euroimmun.com

Nephrology

Primary MN · Goodpasture's syndrome

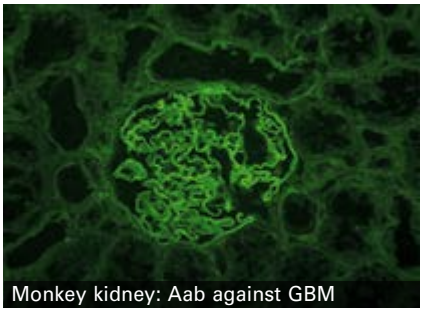
For more information on this subject scan the QR code or enter the Quick Link code q129 at www.euroimmun.com

Goodpasture's syndrome

Clinical information: Glomerulonephritis (actually glomerulitis) is an inflammation of the glomeruli (kidney filters, part of the 1.2 million nephrons of each kidney). Chronic glomerulonephritis, which eventually leads to glomerulosclerosis, represents the main cause of dialysis-dependent kidney failure. In autoimmune glomerulonephritis autoantibodies are directed against the basement membrane of the kidney glomeruli (GBM antigens). Anti-GBM glomerulonephritis accounts for 0.5 to 2 % of all glomerulonephritides.

Goodpasture's syndrome (pulmonary-renal syndrome) is a special form of autoimmune glomerulonephritis named after the US American pathologist Ernest William Goodpasture (1886-1960), who described the combination of glomerulonephritis with pulmonary haemorrhage in 1919. This rare syndrome affects men six times more often than women, and predominantly those in young adulthood. It is clinically characterised by the combination of rapid progressive anti-basement membrane glomerulonephritis and pulmonary haemosiderosis, whereby pulmonary haemorrhage often occurs as the first sign.

Diagnostics: The primary target antigen of all anti-GBM glomerulonephritides, including classic Goodpasture's syndrome, is the NC1 region of the alpha-3 chain of the network-structured type IV collagen of the basement membrane lamina densa. These autoantibodies, which can be detected qualitatively or quantitatively in IIFT and quantitatively in the Anti-GBM ELISA or ChLIA, can be directed against the alveolar basement membrane or against the glomerular basement membrane. In cases without lung involvement GBM antibodies are detected in the serum or plasma of over 60 % of patients, in cases with lung involvement in over 90 %. They are predominantly of class IgG, more rarely of class IgA and IgM. Clinical progression of the disease correlates with antibody concentration. High-titer circulating GBM antibodies indicate an unfavourable progression. With a negative serum result and continuing suspicion of anti-GBM glomerulonephritis, a kidney biopsy should be performed.


Monkey kidney: Aab against GBM

Patients with mit anti-GBM glomerulonephritides are often also ANCA positive (>35 %). Positive results can indicate rapid-progressive glomerulonephritis or GPA. Therefore, parallel analysis of ANCA and anti-GBM antibodies is recommended in patients with ANCA-associated vasculitis (AAV) with renal involvement.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Kidney	Standard substrate for the detection of anti-GBM autoantibodies	FA 1250-####	156
	Kidney, GBM BIOCHIPs	Anti-GBM standard substrate supplemented by a EURO-PLUS BIOCHIP with purified GBM antigen	FA 1250-####-1	156
	Granulocytes (EOH)/ HEp-2 + granulocytes (EOH)/ granulocytes (HCHO)/ PR3/MPO/GBM/ BIOCHIPs	ANCA screening and confirmation on monospecific EUROPLUS antigen dots (incl. GBM) in one test system	FA 1201-####-25	155
ELISA	Glomerular basement membrane (GBM)	ELISA with purified alpha-3 chain of type IV collagen for qualitative and quantitative detection of anti-GBM antibodies	EA 1251-9601 G	143
Blot	MPO, PR3, GBM	Immunoblot for multiplex detection of ANCA and anti-GBM antibodies	DL 1200-####-3 G	140
ChLIA	GBM (purified alpha-3 chain of type IV collagen)	Qualitative and quantitative detection of anti-GBM antibodies	LA 1251-10010 G	147

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 148).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q068 at www.euroimmun.com

Dermatology

Autoimmune dermatoses

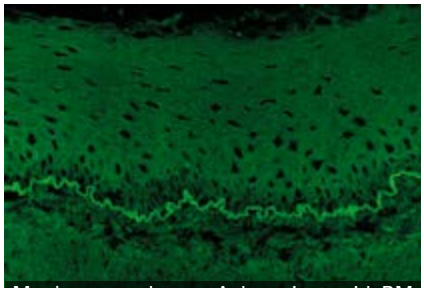
For more information on this subject scan the QR code or enter the Quick Link code q005 at www.euroimmun.com

Autoimmune dermatoses

Clinical information: Bullous autoimmune dermatoses are rare, blister-forming diseases of the outer skin and the adjacent mucous membranes. They are characterised by the formation of autoantibodies against structural proteins of the skin. These structural proteins establish the cell-to-cell contact in keratinocytes within the epidermis and the adhesion of the epidermis to the dermis. Bullous autoimmune dermatoses are divided into four main groups based on their target antigens and the localisation of the blisters:

– Pemphigus diseases: desmoglein 1 (Dsg1), desmoglein 3 (Dsg3), different plakins (mostly envoplakin)
– Pemphigoid diseases: BP180, BP230, laminin 332
– Epidermolysis bullosa acquisita: collagen type VII
– Dermatitis herpetiformis: endomysium (tissue/epidermal transglutaminase), deamidated gliadin peptides (GAF-3X)

Diagnostics: A conclusive diagnosis of bullous autoimmune dermatoses requires the detection of both tissue-bound autoantibodies by direct immunofluorescence and circulating autoantibodies. The circulating specific autoantibodies against epidermal antigens (prickle cell desmosomes and epidermal basement membrane) in patient serum are detected using the indirect immunofluorescence test (IIFT) with tissue sections of primary oesophagus. For further differentiation of autoantibodies against basement membrane structures, tissue sections of primate salt-split skin are used. Final diagnosis is based on a combination of the clinical picture with the detection of autoantibodies against the individual target antigens using IIFT and monospecific ELISAs.


Monkey oesophagus: Aab against epid. BM

Patients who suffer from bullous pemphigoid (BP) exhibit autoantibodies against BP180 and frequently also against BP230. The serum level of autoantibodies against BP180 correlates with the disease activity of BP, the serum level of autoantibodies against BP230 with the duration of the disease. Autoantibodies against desmoglein 1 and 3 are markers for pemphigus diseases. IIFT has proven valuable for detecting circulating autoantibodies in pemphigus. ELISA using recombinant desmoglein 1 and 3 offer the same sensitivity and specificity as IIFT. The anti-Dsg1 and -Dsg3 antibody levels measured correlate to a large extend with the severity and activity of the disease and the therapy success. The determination of autoantibodies against envoplakin contributes to diagnosis of PNP as well as differential diagnostic clarification. The determination of autoantibodies against collagen type VII confirms the diagnosis of EBA and enables the delimitation from other bullous autoimmune dermatoses.

Product overview

Method	Substrate	Application	Order number	Page
IIFT	Oesophagus	Substrate for detection of circulating Ab in bullous autoimmune dermatoses	FA 1501-####	158
	Oesophagus, salt-split skin	Salt-split skin enables autoantibody specification in pemphigoid diseases	FA 1501-####-20	159
	Oesophagus, salt-split skin, BP230gC-transfected cells, desmoglein-1-transfected cells, desmoglein-3-transfected cells, BP180-NC16A-4X BIOCHIP	The combination of all substrates enables fast and comprehensive investigation in one step	FA 1501-####-7	153
	Laminin-332-transfected cells	Determination of Ab against laminin-332 for diagnosis of mucous pemphigoid	FA 150b-1005-50	159
ELISA	Desmoglein 1	Detection of Ab against Dsg1	EA 1495-4801 G	143
	Desmoglein 3	Detection of Ab against Dsg3	EA 1496-4801 G	143
	BP180-NC16A-4X	ELISA for the most important antibody parameter in BP	EA 1502-4801-2 G	144
	BP230-CF	Supplementary serological parameter for diagnosis of BP	EA 1502-4801-1 G	144
	Envoplakin	Monospecific detection of Ab against envoplakin	EA 1491-4801 G	143
	Collagen type VII	Monospecific detection of Ab against collagen type VII	EA 1947-4801 G	145
	Dermatology Profile (separate: BP180-NC16A-4X, BP230-CF, desmoglein 1, desmoglein 3, envoplakin, collagen type VII)	Simultaneous detection of the six most important Ab in one test	EA 1490-1208-1 G	143

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q054 at www.euroimmun.com

Products for autoimmune diagnostics

Format

- 1601: 16 single test strips
- 1208: 12 microplate strips with 8 wells each
- 9601: 96 individual break-apart wells (12 microplate strips, 8 wells each)
- 5001: 50 individual tubes
- 10001: 100 individual tubes
- 1003: 10 slides with 3 fields each
- 1005: 10 slides with 5 fields each
- 2005: 20 slides with 5 fields each
- 1010: 10 slides with 10 fields each
- 1050: 10 slides with 50 fields each
- 1001: 10 slides to be incubated with 1 patient serum each
- 1002: 10 slides to be incubated with 2 patient sera each

FA 1914 - 1005 -1 A

Product code

Immunoglobulin class

- A: IgA
- G: IgG
- M: IgM
- O: IgGM
- P: Polyvalent (IgAGM)

Product classification

- CL: Control for EUROLINE (autoimmune diagnostics) ..... page 138
- DA: Test system EUROASSAY (autoimmune diagnostics) ..... page 139
- DL: Test system EUROLINE (autoimmune diagnostics) ..... page 140
- EA: Test system microplate ELISA (autoimmune diagnostics) ..... page 143
- EV: Test system microplate ELISA (determination of further antibodies) ..... page 146
- ED: Test system microplate ELISA therapeutic drug monitoring) ..... page 146
- LA: Test system chemiluminescence test (autoimmune diagnostics) ..... page 147
- LR: Control set chemiluminescence test ..... page 147
- Test system ids chemiluminescence test (autoimmune diagnostics) ..... page 148
- Control set ids chemiluminescence test (autoimmune diagnostics) ..... page 149
- RA: Radioimmunoassay (autoimmune diagnostics) ..... page 150
- RD: Radioimmunoassay (direct detection of autoantigens, hormone determination) ..... page 150
- FA: Test system indirect immunofluorescence (autoimmune diagnostics) ..... page 151
- FB: Single slides indirect immunofluorescence (autoimmune diagnostics) ..... page 151
- FC: Test system indirect immunofluorescence (EUROPattern) ..... page 151
- FW: Single slides indirect immunofluorescence (EUROPattern) ..... page 151
- FV: Test system indirect immunofluorescence (determination of further antibodies) ..... page 165
- FX: Single slides indirect immunofluorescence (determination of further antibodies) ..... page 165

For product orders the amount, product code and test name are required. **Test kits** comprise all reagents needed to perform the serological investigation. For diagnostics in indirect immunofluorescence, for example, these include slides, FITC-labelled antibodies against human immunoglobulin, positive and negative control sera (not available for some products) as well as embedding medium, cover glasses, sachets of PBS and Tween 20.

Substrates consisting of cell cultures and tissues which do not appear in this catalogue can be made to specification. In addition, BIOCHIP mosaics can be produced according to individual requirements. Apart from the customary package sizes and slide formats, special sizes are available as well. Quotations can be provided upon request.

Controls for EUROLINE: Autoantibodies

Order No.	Control (Ready for Use)	Ig Class	Format
CL 1000-0101 Z	**autoantibody-free control (aab negative)**	IgA, IgG, IgM	0.1 ml
CL 1111-0107 G	**positive control serum: IgG, human, 100x concentrated for DL 1111-1 G, DL 1111-2 G, DL 1111-4 G and DL 1111-7 G**	IgG	0.1 ml for EUROBlotOne
CL 1111-0107-6 G	**positive control serum: IgG, human, 100x concentrated for DL 1111-6 G**	IgG	0.1 ml for EUROBlotOne
CL 1200-0107-2 G	**positive control serum: IgG, human, 100x concentrated for DL 1200-X G**	IgG	0.1 ml for EUROBlotOne
CL 1300-0107 G	**positive control serum: IgG, human, 100x concentrated for DL 1300-X G**	IgG	0.1 ml for EUROBlotOne
CL 1530-0107 G	**positive control serum: IgG, human, 100x concentrated for DL 1530-X G**	IgG	0.1 ml for EUROBlotOne
CL 1532-0107 G	**positive control serum: IgG, human, 100x concentrated for DL 1532 G**	IgG	0.1 ml for EUROBlotOne
CL 1590-0107 G	**positive control serum: IgG, human, 100x concentrated for DL 1590-X G**	IgG	0.1 ml for EUROBlotOne
CL 1590-0107-35 G	**positive control serum: IgG, human, 100x concentrated for DL 1590-35 G**	IgG	0.1 ml for EUROBlotOne
CL 159z-0107 G	**positive control serum: IgG, human, 100x concentrated for DL 159z-X G**	IgG	0.1 ml for EUROBlotOne
CL 1910-0107 A	**positive control serum: IgA, human, 100x concentrated for DL 1910 A**	IgA	0.1 ml for EUROBlotOne
CL 1910-0107 G	**positive control serum: IgG, human, 100x concentrated for DL 1910 G**	IgG	0.1 ml for EUROBlotOne

EUROASSAY for the Determination of Autoantibodies (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format Slides x Fields
DA 1300-1003 G	**AMA M2, LKM-1, SLA/LP**	IgG	EUROASSAY strip with antigens	10 x 03
DA 1300-1003-2 G	**LKM-1, LC-1, SLA/LP**	IgG	EUROASSAY strip with antigens	10 x 03
DA 1300-1003-3 G	**Liver Profile AMA M2, LKM-1, LC-1, SLA/LP**	IgG	EUROASSAY strip with antigens	10 x 03
DA 1302-1003 G	**SLA/LP**	IgG	EUROASSAY strip with antigens	10 x 03
DA 1590-1003-1 G **DA 1590-1005-1 G**	**Anti-ENA ProfilePlus (nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1 separately)**	IgG	EUROASSAY strip with antigens	10 x 03 10 x 05
DA 1590-1003-2 G	**Anti-ENA ProfilePlus with AMA M2 (nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1, AMA M2 separately)**	IgG	EUROASSAY strip with antigens	10 x 03
DA 1590-1005-20 G	**Anti-ENA ProfilePlus with histones (nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1, histones separately)**	IgG	EUROASSAY strip with antigens	10 x 05
DA 1590-1003-29 G **DA 1590-1005-29 G**	**Anti-ENA ProfilePlus with Ro-52 (nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1, Ro-52 separately)**	IgG	EUROASSAY strip with antigens	10 x 03 10 x 05
DA 1590-1005-32 G	**Anti-ENA ProfilePlus with ribosomal P-proteins (nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1, ribosomal P-proteins separately)**	IgG	EUROASSAY strip with antigens	10 x 05
DA 1620-1003-1 O	**AMA Profile (AMA M2, M4, M9 separately)**	IgGM	EUROASSAY strip with antigens	10 x 03

EUROLINE for the Determination of Autoantibodies (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DL 0160-1601 G DL 0160-5001 G	EUROLINE validation	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ
DL 1111-1601-2 G	Neuronal Antigens Profile 2 (amphiphysin, CV2, PNMA2 (Ma-2/Ta), Ri, Yo, Hu separately)	IgG	EUROLINE	16 strips
DL 1111-1601-4 G	Neuronal Antigens Profile PLUS RST (amphiphysin, CV2, PNMA2 (Ma-2/Ta), Ri, Yo, Hu, recoverin, SOX1, titin separately)	IgG	EUROLINE	16 strips
DL 1111-1601-6 G	Neuronal Antigens Profile SOX1, titin	IgG	EUROLINE	16 strips
DL 1111-1601-7 G DL 1111-5001-7 G DL 1111-6401-7 G	Paraneoplastic Neurologic Syndromes - 12 Ag (amphiphysin, CV2, PNMA2 (Ma-2/Ta), Ri, Yo, Hu, recoverin, SOX1, titin, Zic4, GAD65, Tr (DNER) separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1130-1601-1 G	Gangliosides Profile 1 (GM1, GD1b, GQ1b separately)	IgG	EUROLINE	16 strips
DL 1130-1601-1 M	Gangliosides Profile 1 (GM1, GD1b, GQ1b separately)	IgM	EUROLINE	16 strips
DL 1130-1601-2 G	Gangliosides Profile 2 (GM1, GM2, GM3, GD1a, GD1b, GT1b, GQ1b separately)	IgG	EUROLINE	16 strips
DL 1130-1601-2 M	Gangliosides Profile 2 (GM1, GM2, GM3, GD1a, GD1b, GT1b, GQ1b separately)	IgM	EUROLINE	16 strips
DL 1200-1601-2 G DL 1200-6401-2 G	myeloperoxidase (MPO) proteinase 3 (PR3)	IgG	EUROLINE	16 strips 64 strips
DL 1200-1601-3 G DL 1200-6401-3 G	myeloperoxidase (MPO) proteinase 3 (PR3) glomerular basement membrane (GBM)	IgG	EUROLINE	16 strips 64 strips
DL 1300-1601-2 G DL 1300-6401-2 G	Liver Profile 2 (AMA M2, M2-3E, LKM-1, LC-1, SLA/LP separately)	IgG	EUROLINE	16 strips 64 strips
DL 1300-1601-3 G DL 1300-6401-3 G	Liver Profile (AMA M2, LKM-1, LC-1, SLA/LP separately)	IgG	EUROLINE	16 strips 64 strips
DL 1300-1601-4 G DL 1300-5001-4 G DL 1300-6401-4 G	Autoimmune Liver Diseases (AMA M2, M2-3E, Sp100, PML, gp210, LKM-1, LC-1, SLA/LP, Ro-52 separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1300-1601-5 G	Autoimmune Liver Diseases 14 Ag (AMA-M2, M2-3E, Sp100, PML, gp210, LKM-1, LC-1, SLA/LP, SS-A, Ro-52, Scl-70, CENP A, CENP B, PGDH separately)	IgG	EUROLINE	16 strips
DL 1360-1601 A DL 1360-0510 A DL 1360-6401 A	Autoimmune Gastrointestinal Diseases IgA (tissue transglutaminase (endomysium), gliadin-analogue fusion peptide (GAF-3X), mannan (ASCA))	IgA	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1360-1601 G DL 1360-5001 G DL 1360-6401 G	Autoimmune Gastrointestinal Diseases IgG (tissue transglutaminase (endomysium), gliadin-analogue fusion peptide (GAF-3X), parietal cell antigen (PCA) separately Intrinsic factor, mannan (ASCA))	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips

EUROLINE for the Determination of Autoantibodies (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DL 1530-1601 G	Myositis Profile (Mi-2, Ku, PM-Scl, Jo-1, PL-7, PL-12, Ro-52 separately)	IgG	EUROLINE	16 strips
DL 1530-1601-3 G DL 1530-6401-3 G	Myositis Profile 3 (Mi-2, Ku, PM-Scl100, PM-Scl75, Jo-1, SRP, PL-7, PL-12, EJ, OJ, Ro-52 separately)	IgG	EUROLINE	16 strips 64 strips
DL 1530-1601-4 G DL 1530-5001-4 G DL 1530-6401-4 G	Autoimmune Inflammatory Myopathies 16 Ag (Mi-2 alpha, Mi-2 beta, TIF1g, MDA5, NXP2, SAE1, Ku, PM-Scl100, PM-Scl75, Jo-1, SRP, PL-7, PL-12, EJ, OJ, Ro-52 separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1530-1601-7 G DL 1530-5001-7 G DL 1530-6401-7 G	Autoimmune Inflammatory Myopathies 16 Ag et cN-1A (Mi-2 alpha, Mi-2 beta, TIF1g, MDA5, NXP2, SAE1, Ku, PM-Scl100, PM-Scl75, Jo-1, SRP, PL-7, PL-12, EJ, OJ, Ro-52, cN-1A separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1532-1601 G DL 1532-5001 G DL 1532-6401 G	Systemic Sclerosis Profile (Nucleoli) (Scl-70, CENP A, CENP B, RP11, RP155, fibrillarin, NOR90, Th/To, PM-Scl100, PM-Scl75, Ku, PDGFR, Ro-52 separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1590-1601-1 G DL 1590-6401-1 G	Anti-ENA ProfilePlus 1 (nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, Jo-1 separately)	IgG	EUROLINE	16 strips 64 strips
DL 1590-1601-3 G DL 1590-5001-3 G DL 1590-6401-3 G	ANA Profile 3 (nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2 separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1590-1601-5 G DL 1590-6401-5 G	ANA Profile 5 (nRNP/Sm, Sm, RNP70, RNPA, RNPC, SS-A, Ro-52, SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2 separately)	IgG	EUROLINE	16 strips 64 strips
DL 1590-1601-8 G DL 1590-5001-8 G DL 1590-6401-8 G	ANA Profile 1 (nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, Jo-1, CENP B, dsDNA, nucleosomes, histones, ribosomal P-proteins separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1590-1601-23 G DL 1590-5001-23 G DL 1590-6401-23 G	ANA Profile 23 (nucleosomes, dsDNA, histones, SS-A, Ro-52, SS-B, nRNP/Sm, Sm, Mi-2 alpha, Mi-2 beta, Ku, CENP A, CENP B, Sp100, PML, Scl-70, PM-Scl100, PM-Scl75, RP11, RP155, gp210, PCNA, DFS70 separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1590-1601-30 G DL 1590-5001-30 G DL 1590-6401-30 G	ANA Profile 3 plus DFS70 (nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2, DFS70 separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 1590-1601-31 G DL 1590-6401-31 G	ANA Profile et Mi-2 et Ku (Mi-2, Ku, nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2 separately)	IgG	EUROLINE	16 strips 64 strips
DL 1590-1601-32 G DL 1590-5001-32 G	dsDNA, nucleosomes, histones, DFS70	IgG	EUROLINE	16 strips 50 stips Immunoblot-PreQ
DL 1590-1601-33 G DL 1590-5001-33 G DL 1590-6401-33 G	ANA Profile et Mi-2, Ku, DFS70 (Mi-2, Ku, nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, PM-Scl100, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-proteins, AMA M2, DFS70 separately)	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips

EUROLINE for the Determination of Autoantibodies (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DL 1590-1601-34 G **DL 1590-6401-34 G**	**Mi2 alpha, Mi2 beta, Ku, DFS70**	IgG	EUROLINE	16 strips 64 strips
DL 1590-1601-35 G **DL 1590-5001-35 G** **DL 1590-6401-35 G**	**Cytoplasm profile** **(AMA M2, M2-3E, ribosomal P-proteins, Jo-1** **SRP, PL-7, PL-12, EJ, OJ, Ro-52 separately)**	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DL 159z-1601 G **DL 159z-5001 G**	**EUROLINE Anti-DFS70**	IgG	EUROLINE	16 strips 50 strips for Immunoblot PreQ
DL 1620-1601-1 O **DL 1620-6401-1 O**	**AMA-Profile EUROLINE** **(separate: AMA-M2, M2-3E, M4, M9)**	IgGM	EUROLINE	16 strips 64 strips
DL 1910-1601 A	**Coeliac Disease Profile** **(tissue transglutaminase (endomysium),** **gliadin-analogue fusion peptide (GAF-3X) separately)**	IgA	EUROLINE	16 strips
DL 1910-1601 G	**Coeliac Disease Profile** **(tissue transglutaminase (endomysium),** **gliadin-analogue fusion peptide (GAF-3X) separately)**	IgG	EUROLINE	16 strips

Microplate ELISA for the Determination of Autoantibodies (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EA 1012-9601 G	**thyroid peroxidase (TPO)**	IgG	10/50/500 IU/ml	96 x 01
EA 1013-9601 G	**thyroglobulin (TG)**	IgG	20/100/1000 IU/ml	96 x 01
EA 1015-9601 G	**TSH receptor (thyrotropin receptor)**	IgG	0/1/2/8/40 IU/l	96 x 01
EA 1015-9601-1 G	**TSH receptor (thyrotropin receptor) Fast ELISA**	IgG	0.1/1/2/8/40 IU/l	96 x 01
EA 1022-9601 G	**GAD**	IgG	5/15/35/120/ 250/2000 IU/ml	96 x 01
EA 1022-9601-1 G	**GAD/IA2 Pool**	IgG	4/10/20/70/ 145/450 IU/ml	96 x 01
EA 1023-9601 G	**IA2**	IgG	10/20/75/250/400/ 4000 IU/ml	96 x 01
EA 1027-9601	**zinc transporter 8**		10/20/75/500/2000 RU/ml	96 x 01
EA 1200-1208-1 G	**ANCA Profile (proteinase 3, MPO, elastase, cathepsin G, BPI, lactoferrin separately)**	IgG	semi-quantitative	12 x 08
EA 1201-9601-2 G	**cANCA: proteinase 3 (PR3-hn-hr)**	IgG	2/20/200 RU/ml	96 x 01
EA 1211-9601 G	**pANCA: myeloperoxidase (MPO)**	IgG	2/20/200 RU/ml	96 x 01
EA 1251-9601 G	**glomerular basement membrane (GBM)**	IgG	2/20/200 RU/ml	96 x 01
EA 1254-9601 G	**phospholipase A2 receptor (PLA2R)**	IgG	2/20/100/500/ 1500 RU/ml	96 x 01
EA 1302-9601 G	**soluble liver antigen/ liver-pancreas antigen (SLA/LP)**	IgG	2/20/200 RU/ml	96 x 01
EA 1307-9601 G	**cytosolic liver antigen type 1 (LC-1)**	IgG	semi-quantitative	96 x 01
EA 1321-9601 G	**liver-kidney microsomes (LKM-1)**	IgG	2/20/200 RU/ml	96 x 01
EA 1361-9601 G	**parietal cells (PCA)**	IgG	2/20/200 RU/ml	96 x 01
EA 1361-9601-1 G	**ATP4B**	IgG	2/20/200 RU/ml	96 x 01
EA 1362-9601 G	**intrinsic factor**	IgG	2/20/200 RU/ml	96 x 01
EA 1435-9601 G	**acetylcholine receptor**	IgG	0/0.25/0.75/2.5/ 8 nmol/l	96 x 01
EA 1490-1208-1 G	**Dermatology Profile (BP180-NC16A-4X, BP230-CF, desmoglein 1, desmoglein 3, envoplakin, collagen type VII separately)**	IgG	semi-quantitative	12 x 08
EA 1491-4801 G	**envoplakin**	IgG	semi-quantitative	48 x 01
EA 1495-4801 G	**desmoglein 1**	IgG	2/20/200 RU/ml	48 x 01
EA 1496-4801 G	**desmoglein 3**	IgG	2/20/200 RU/ml	48 x 01

Microplate ELISA for the Determination of Autoantibodies (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EA 1502-4801-1 G	**BP230-CF**	IgG	2/20/200 RU/ml	48 x 01
EA 1502-4801-2 G	**BP180-NC16A-4X**	IgG	2/20/200 RU/ml	48 x 01
EA 1505-9601 G	**cyclic citrullinated peptides (CCP)**	IgG	1/5/20/100/ 200 RU/ml	96 x 01
EA 151a-4802 G	**Sa**	IgG	2/20/200 RU/ml	48 x 02
EA 151b-9601 G	**CEP-1**	IgG	2/20/200 RU/ml	96 x 01
EA 1560-9601 G	**histones**	IgG	2/20/200 RU/ml	96 x 01
EA 1571-9601 G	**double-stranded DNA (dsDNA)**	IgG	10/100/800 IU/ml	96 x 01
EA 1572-9601 G	**dsDNA-NcX**	IgG	10/100/800 IU/ml	96 x 01
EA 1574-9601 G	**nucleosomes**	IgG	2/20/200 RU/ml	96 x 01
EA 1576-9601 G	**single-stranded DNA (ssDNA)**	IgG	2/20/200 RU/ml	96 x 01
EA 1584-9601 G	**PM-Scl**	IgG	2/20/200 RU/ml	96 x 01
EA 1590-1208-1 G	**Anti-ENA ProfilePlus 1 (nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1 separately)**	IgG	semi-quantitative	12 x 08
EA 1590-1208-2 G	**Anti-ENA ProfilePlus 2 (ribosomal P-proteins, nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1, centromeres, separately)**	IgG	semi-quantitative	12 x 08
EA 1590-9601-7 G	**Anti-ENA PoolPlus (antigen mixture: nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1)**	IgG	semi-quantitative	96 x 01
EA 1590-9601-8 G	**ANA screen (antigen mixture: dsDNA, histones, ribosomal P-proteins, nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1, centromeres)**	IgG	semi-quantitative	96 x 01
EA 1590-9601-9 G	**Anti-ENA Pool (antigen mixture: nRNP/Sm, Sm, SS-A, SS-B, Scl-70, ribosomal P-proteins, Ro-52)**	IgG	semi-quantitative	96 x 01
EA 1590-9601-11 G	**ANA screen 11 (antigen mixture: PCNA, PM-Scl, ribosomal P-proteins, nRNP/Sm, Sm, SS-A, Ro-52, SS-B, Scl-70, Jo-1, centromeres)**	IgG	semi-quantitative	96 x 01
EA 1590-1208-12 G	**Anti-ENA SLE Profile 2 (dsDNA, histones, nucleosomes, nRNP/Sm, Sm, SS-A, SS-B, Scl-70 separately)**	IgG	semi-quantitative	12 x 08
EA 1590-9601-14 G	**ANA screen 9 (antigen mixture: PCNA, PM-Scl, ribosomal P-proteins, nRNP/Sm, Sm, SS-A, SS-B, Scl-70, Jo-1)**	IgG	semi-quantitative	96 x 01
EA 1591-9601 G	**nRNP/Sm**	IgG	2/20/200 RU/ml	96 x 01
EA 1593-9601 G	**Sm**	IgG	2/20/200 RU/ml	96 x 01
EA 1595-9601 G	**SS-A (Ro)**	IgG	2/20/200 RU/ml	96 x 01
EA 1597-9601 G	**SS-B (La)**	IgG	2/20/200 RU/ml	96 x 01
EA 1599-9601 G	**Scl-70**	IgG	2/20/200 RU/ml	96 x 01
EA 159z-9601 G	**DFS70**	IgG	semi-quantitative	96 x 01
EA 1611-9601 G	**centromeres**	IgG	2/20/200 RU/ml	96 x 01

Microplate ELISA for the Determination of Autoantibodies (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EA 1621-9601 A	**cardiolipin (AMA M1)**	IgA	2/12/120 PL IgA U/ml	96 x 01
EA 1621-9601 G	**cardiolipin (AMA M1)**	IgG	2/12/120 PL IgG U/ml	96 x 01
EA 1621-9601 M	**cardiolipin (AMA M1)**	IgM	2/12/120 PL IgM U/ml	96 x 01
EA 1621-9601 P	**cardiolipin (AMA M1)**	IgAGM	2/12/120 RU/ml	96 x 01
EA 1622-9601 G	**AMA M2-3E**	IgG	2/20/200 RU/ml	96 x 01
EA 162a-9601 A	**phosphatidylserine**	IgA	2/12/120 RU/ml	96 x 01
EA 162a-9601 G	**phosphatidylserine**	IgG	2/12/120 RU/ml	96 x 01
EA 162a-9601 M	**phosphatidylserine**	IgM	2/12/120 RU/ml	96 x 01
EA 162a-9601 P	**phosphatidylserine**	IgAGM	2/12/120 RU/ml	96 x 01
EA 1632-9601 A	**ß2-glycoprotein 1**	IgA	2/20/200 RU/ml	96 x 01
EA 1632-9601 G	**ß2-glycoprotein 1**	IgG	2/20/200 RU/ml	96 x 01
EA 1632-9601 M	**ß2-glycoprotein 1**	IgM	2/20/200 RU/ml	96 x 01
EA 1632-9601 P	**ß2-glycoprotein 1**	IgAGM	2/20/200 RU/ml	96 x 01
EA 1641-9601 G	**ribosomal P-proteins**	IgG	2/20/200 RU/ml	96 x 01
EA 1661-9601 G	**Jo-1**	IgG	2/20/200 RU/ml	96 x 01
EA 1675-4801 G	**cN-1A (Mup44, NT5C1A)**	IgG	semi-quantitative	48 x 01
EA 1814-9601 A	**IgA rheumatoid factor (ab of class IgA against IgG)**	IgA	2/20/200 RU/ml	96 x 01
EA 1814-9601 G	**IgG rheumatoid factor (ab of class IgG against IgG)**	IgG	2/20/200 RU/ml	96 x 01
EA 1814-9601 M	**IgM rheumatoid factor (ab of class IgM against IgG)**	IgM	2/20/200 RU/ml	96 x 01
EA 1818-9601 G	**circulating immune complexes (CIC)**	IgG	2/20/200 RU/ml	96 x 01
EA 1910-9601 A	**tissue transglutaminase (endomysium)**	IgA	2/20/200 RU/ml	96 x 01
EA 1910-9601 G	**tissue transglutaminase (endomysium)**	IgG	semi-quantitative	96 x 01
EA 1947-4801 G	**collagen type VII**	IgG	2/20/200 RU/ml	48 x 01

Microplate ELISA for the Determination of Antibodies against Other Antigens (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EV 2841-9601 A	**Saccharomyces cerevisiae**	IgA	2/20/200 RU/ml	96 x 01
EV 2841-9601 G	**Saccharomyces cerevisiae**	IgG	2/20/200 RU/ml	96 x 01
EV 3011-9601 A	**gliadin (GAF-3X)**	IgA	2/25/200 RU/ml	96 x 01
EV 3011-9601 G	**gliadin (GAF-3X)**	IgG	2/25/200 RU/ml	96 x 01
EV 3840-9601 E	**total IgE**	IgE	0/10/100/500 IU/ml	96 x 01

Microplate ELISA for Therapeutic Drug Monitoring (Test Systems)

Order No.	Antibodies against	Ig Class	Format
ED 4110-9601	**MabTrack level adalimumab**		96 x 01
ED 4111-4801 G	**MabTrack anti-drug antibody adalimumab**	IgG	48 x 01
ED 4120-9601	**MabTrack level infliximab**		96 x 01
ED 4121-4801 G	**MabTrack anti-drug antibody infliximab**	IgG	48 x 01

Chemiluminescence Tests for the Determination of Autoantibodies (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
LA 1201-10010 G	**proteinase 3 (PR3)**	IgG	quantitative	100 determinations for RA Analyzer 10
LA 1211-10010 G	**MPO**	IgG	quantitative	100 determinations for RA Analyzer 10
LA 1251-10010 G	**GBM**	IgG	quantitative	100 determinations for RA Analyzer 10
LA 1254-10010 G	**phospholipase A2 receptor (PLA2R)**	IgG	quantitative	100 determinations for RA Analyzer 10
LA 1505-10010 G	**CCP**	IgG	quantitative	100 determinations for RA Analyzer 10
LA 1910-10010 A	**tissue transglutaminase (endomysium)**	IgA	quantitative	100 determinations for RA Analyzer 10
LA 1910-10010 G	**tissue transglutaminase (endomysium)**	IgG	quantitative	100 determinations for RA Analyzer 10
LV 3011-10010 A	**Gliadin (GAF-3X)**	IgA	quantitative	100 determinations for RA Analyzer 10
LV 3011-10010 G	**Gliadin (GAF-3X)**	IgG	quantitative	100 determinations for RA Analyzer 10

Control Sets for Chemiluminescence Tests

Order No.	Control Set (Ready for use)	Ig Class	Format
LR 1201-20210 G	**Control set Proteinase 3 (PR3)**	IgG	2 x 0.4 ml control QC1/2
LR 1211-20210 G	**Control set MPO**	IgG	2 x 0.4 ml control QC1/2
LR 1251-20210 G	**Control set GBM**	IgG	2 x 0.4 ml control QC1/2
LR 1254-20210 G	**Control set phospholipase A2 receptor (PLA2R)**	IgG	2 x 0.4 ml control QC1/2
LR 1505-20210 G	**Control set CCP**	IgG	2 x 0.4 ml control QC1/2
LR 1910-20210 A	**Control set Human Tissue Transglutaminase (tTG)**	IgA	2 x 0.4 ml control QC1/2
LR 1910-20210 G	**Control set Human Tissue Transglutaminase (tTG)**	IgG	2 x 0.4 ml control QC1/2
LR 3011-20210 A	**Control set Gliadin (GAF-3X)**	IgA	2 x 0,4 ml control QC1/2
LR 3011-20210 G	**Control set Gliadin (GAF-3X)**	IgG	twice each 0,4 ml control QC1/2

IDS Chemiluminescence Tests for the Determination of Autoantibodies (Test Systems)

IDS Order No.	Description	Format
IS-AI1902	IDS Anti-TPO	100 determinations, calibrators incl.
IS-AI1901	IDS Anti-TG	100 determinations, calibrators incl.
IS-AI1702II	IDS PR3-II	50 determinations, calibrators incl.
IS-AI1701	IDS MPO	50 determinations, calibrators incl.
IS-AI1703	IDS GBM	50 determinations, calibrators incl.
IS-AI1802	IDS LKM-1	50 determinations, calibrators incl.
IS-AI1201	IDS CCP	100 determinations, calibrators incl.
IS-AI1101	IDS dsDNA IgG	100 determinations, calibrators incl.
IS-AI1002	IDS ENA Screen	100 determinations, calibrators incl.
IS-AI1001	IDS ANA Screen	100 determinations, calibrators incl.
IS-AI1107	IDS U1-snRNP	50 determinations, calibrators incl.
IS-AI1106	IDS Sm	50 determinations, calibrators incl.
IS-AI1102	IDS SS-A/Ro	50 determinations, calibrators incl.
IS-AI1103	IDS SS-A/Ro 52 kDa	50 determinations, calibrators incl.
IS-AI1104	IDS SS-A/Ro 60 kDa	50 determinations, calibrators incl.
IS-AI1105	IDS SS-B/La	50 determinations, calibrators incl.
IS-AI1108	IDS Scl-70	50 determinations, calibrators incl.
IS-AI1110	IDS Centromere B	50 determinations, calibrators incl.
IS-AI1801	IDS AMA (M2)	50 determinations, calibrators incl.
IS-AI1501	IDS Cardiolipin IgG	100 determinations, calibrators incl.
IS-AI1601	IDS Cardiolipin IgM	100 determinations, calibrators incl.
IS-AI1502	IDS B2-Glycoprotein I IgG	100 determinations, calibrators incl.
IS-AI1602	IDS B2-Glycoprotein I IgM	100 determinations, calibrators incl.
IS-AI1109	IDS Jo-1	50 determinations, calibrators incl.
RFCOL-B00/IDS	Rheumatoid Factor	100 determinations
IS-AI1303	IDS t-TG IgA	100 determinations, calibrators incl.
IS-AI1401	IDS t-TG IgG	50 determinations, calibrators incl.
IS-AI1301	IDS Deamidated Gliadin IgA	100 determinations, calibrators incl.
IS-AI1302	IDS Deamidated Gliadin IgG	100 determinations, calibrators incl.

IDS Control Sets for Chemiluminescence Tests

IDS Order No.	Description	Format
IS-AI1930	IDS Thyroid Control Set	2 concentrations
IS-AI1730	IDS ANCA/GBM Control Set	2 concentrations
IS-AI1830	IDS Liver Control Set	2 concentrations
IS-AI1230	IDS CCP Control Set	2 concentrations
IS-AI1130	IDS ANA Control Set	2 concentrations
IS-AI1030	IDS ANA Screen Control Set	2 concentrations
IS-AI1530	IDS APS IgG Control Set	2 concentrations
IS-AI1630	IDS APS IgM Control Set	2 concentrations
RFREK-000/IDS	Rheumatoid Factor Calibration Set	5 concentrations
RFCOK-000/IDS	Rheumatoid Factor Control Set	2 concentrations
RFCON-002/IDS	Rheumatoid Factor Control	1 concentration
IS-AI1330	IDS CELIAC Control Set	2 concentrations
IS-AI1430	IDS t-TG IgG Control Set	2 concentrations

Radioimmunoassays (RIA) for the Determination of Autoantibodies (Test Systems)

Order No.	Antibodies against	Antigen and Antigen Source	Calibration	Format
RA 1012-10001-1	**thyroid peroxidase (TPO) coated tubes (CT)**	native thyroid peroxidase, human	0/8/40/200/1000/ 7500 U/ml	100 x 01
RA 1012-10001-3 **RA 1012-20001-3**	**thyroid peroxidase (TPO) magnetic separation**	native thyroid peroxidase, human	20/80/400/2000/ 8000 U/ml	100 x 01 200 x 01
RA 1013-10001-1	**thyroglobulin (TG) coated tubes (CT)**	native thyroglobulin, human	0/20/50/200/1000/ 4000 U/ml	100 x 01
RA 1013-10001-3	**thyroglobulin (TG) magnetic separation**	native thyroglobulin, human	20/80/250/1000/ 4000 U/ml	100 x 01
RA 1015-10001-1	**TSH receptor coated tubes (CT)**	native TSH receptor, porcine	0/1/2/8/40 IU/l	100 x 01
RA 1024-5001 **RA 1024-10001**	**insulin precipitation**	synthetic product, human	0/0.4/1/10/50 U/ml	50 x 01 100 x 01
RA 1435-3001-1 **RA 1435-10001-1**	**acetylcholine receptor (ACHR) precipitation**	extract, human	0/0.25/0.75/ 2.5/8 nmol/l	30 x 01 100 x 01
RA 1571-10001	**double-stranded DNA (dsDNA) precipitation**	plasmid DNA	6 standards, variable 0-100 IU/ml	100 x 01

RIA for Direct Detection of Autoantigens, Hormone Determination (Test Systems)

Order No.	Antigen	Analyte	Calibration	Format
RD 1013-10001	**thyroglobulin (TG) coated tubes (CT); IRMA**	**native thyroglobulin**	0.3/1/4/20/100/ 250 ng/ml	100 x 01
RD 1016-10001-1	**free triiodothyronine (FT3) coated tubes (CT)**	**triiodothyronine, human**	0/2/5/10/20/ 40 pmol/l	100 x 01
RD 1017-10001-1	**free thyroxine (FT4) coated tubes (CT)**	**thyroxine, human**	0/6/12/25/50/ 100 pmol/l	100 x 01
RD 1018-10001-1	**Turbo thyrotropin (TSH) coated tubes (CT); IRMA**	**thyrotropin, human**	0/0.06/0.15/0.6/2.5/ 15/50/100 µIU/ml	100 x 01
RD 1019-10001-1	**calcitonin coated tubes (CT); IRMA**	**calcitonin, human**	6 standards, variable 0-2000 pg/ml	100 x 01

Diagnostics for Indirect Immunofluorescence: Organ-Specific Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1010-1005	**thyroid gland (MAb + TAb)**	IgG	thyroid gland	monkey	10 x 05 (test system)
FA 1010-1005-2	**Polyendocrinopathy Mosaic** **thyroid gland (MAb + TAb)** **pancreas islets** **adrenal cortex** **ovarian antigens** **Leydig cells** **parietal cells (PCA)**	IgAGM	6 BIOCHIPs per field: thyroid gland pancreas adrenal gland ovary testis stomach	 monkey monkey monkey monkey monkey monkey	10 x 05 (test system)
FA 1010-1005-3 **FA 1010-1010-3**	**EUROPLUS** **thyroid gland (MAb + TAb)** **thyroglobulin (TG)**	IgG	2 BIOCHIPs per field: thyroid gland TG BIOCHIPs	 monkey human	10 x 05 (test system) 10 x 10 (test system)
FA 1020-1005 **FA 1020-1010** **FA 1020-2005** **FA 1020-2010** **FB 1020-1005** **FB 1020-1010** **FB 1020-2005** **FB 1020-2010**	**pancreas islets**	IgG	pancreas	monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides)
FC 1020-2005 **FC 1020-2010**	**islet cells antibodies (PM) EUROPattern** **pancreas islets**	IgG	1 BIOCHIP per field: pancreas	 monkey	20 x 05 (test system) 20 x 10 (test system)
FA 1020-1005-3 **FA 1020-1010-3** **FA 1020-2005-3** **FA 1020-2010-3**	**pancreas islets, GAD** **brain: grey and white matter,** **Purkinje cell cytoplasm (Yo),** **Hu and Ri antigen**	IgG	pancreas cerebellum (2 BIOCHIPs per field)	monkey monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FA 1022-1005-50	**glutamic acid decarboxylase (GAD) 65 kDa** **(stiff-person syndrome)**	IgG	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system)
FA 1050-1005 **FB 1050-1005**	**adrenal cortex**	IgG	adrenal gland	monkey	10 x 05 (test system) 10 x 05 (single slides)
FC 1050-1005 **FC 1050-1010** **FC 1050-2005** **FC 1050-2010**	**Endocrinology Screen (AM) EUROPattern** **adrenal cortex**	IgG	1 BIOCHIP per field: adrenal gland	 monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FA 1060-1005 **FB 1060-1005**	**ovarian antigens**	IgAGM	ovary	monkey	10 x 05 (test system) 10 x 05 (single slides)
FA 1086-1005 **FA 1086-1010**	**spermatozoa**	IgAGM	smear	human	10 x 05 (test system) 10 x 10 (test system)
FA 1111-1005 **FA 1111-1010** **FB 1111-1005** **FB 1111-1010**	**brain: grey and white matter,** **Purkinje cell cytoplasm (Yo),** **Hu and Ri antigen** **CV2, Ma, amphiphysin**	IgAGM	cerebellum	monkey	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FA 1111-1005-1 **FA 1111-1010-1** **FB 1111-1005-1** **FB 1111-1010-1**	**Neurology Mosaic 1** **Yo, Hu, Ri, CV2, Ma, amphiphysin** **medullated nerves** **non-medullated nerves**	IgAGM	3 BIOCHIPs per field: cerebellum nerves intestinal tissue	 monkey monkey monkey	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FC 1111-1005-1 **FC 1111-1010-1**	**Neurology Mosaic 1 EUROPattern** **Yo, Hu, Ri, CV2, Ma, amphiphysin** **medullated nerves** **non-medullated nerves**	IgG	3 BIOCHIPs per field: cerebellum nerves intestinal tissue	 monkey monkey monkey	10 x 05 (test system) 10 x 10 (test system)
FA 1111-1005-2 **FA 1111-1010-2**	**Neurology Mosaic 2** **Yo, Hu, Ri, CV2, Ma, amphiphysin** **medullated nerves**	IgAGM	2 BIOCHIPs per field: cerebellum nerves	 monkey monkey	10 x 05 (test system) 10 x 10 (test system)

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Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1111-1005-8 **FA 1111-1010-8** **FA 1111-12010-8** **FB 1111-1005-8** **FB 1111-1010-8**	**Neurology Mosaic 8** **Yo, Hu, Ri, CV2, Ma, amphiphysin** **medullated nerves** **non-medullated nerves** **pancreas islets**	IgAGM	4 BIOCHIPs per field cerebellum nerves intestinal tissue pancreas	 monkey monkey monkey monkey	10 x 05 (test system) 10 x 10 (test system) 120 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FC 1111-1005-8 **FC 1111-1010-8**	**Neurology Mosaic 8 EUROPattern** **Yo, Hu, Ri, CV2, Ma, amphiphysin** **medullated nerves** **non-medullated nerves** **pancreas islets**	IgG	4 BIOCHIPs per field: cerebellum nerves intestinal tissue pancreas	 monkey monkey monkey monkey	10 x 05 (test system) 10 x 10 (test system)
FA 1111-1005-14 **FA 1111-1010-14** **FB 1111-1005-14** **FB 1111-1010-14**	**Neurology Mosaic14** **cerebellum antigens** **non-medullated nerves**	IgAGM	2 BIOCHIPs per field: cerebellum non-medullated nerves	 monkey monkey	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FC 1111-12010-14	**Neurology Mosaic 14 EUROPattern** **cerebellum antigens** **medullated nerves**	IgG	2 BIOCHIPs per field cerebellum intestinal tissue	 monkey monkey	120 x 10 (test system)
FA 1111-1005-16 **FA 1111-1010-16** **FB 1111-1005-16** **FB 1111-1010-16**	**Yo, Hu, Ri, CV2, Ma, amphiphysin** **medullated nerves** **non-medullated nerves** **cell nuclei (ANA)**	IgAGM	cerebellum nerves intestinal tissue HEp-2 cells (4 BIOCHIPs per field)	monkey monkey monkey human	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FA 1113-1005-1	**Purkinje Cell Mosaic 1** **Yo/CDR2** **DNER** **ITPR1** **CARP**	IgG	4 BIOCHIPs per field: transfected cells transfected cells transfected cells transfected cells	 EU 90 EU 90 EU 90 EU 90	10 x 05 (test system)
FA 111m-1005-3 **FA 111m-1010-3** **FB 111m-1005-3** **FB 111m-1010-3**	**hippocampus antigens** **cerebellum antigens** **glutamate receptor (type NMDA)**	IgG	hippocampus cerebellum transfected cells control transfection (4 BIOCHIPs per field)	rat rat EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FA 1120-1005 **FB 1120-1005**	**medullated nerves**	IgAGM	nerves	monkey	10 x 05 (test system) 10 x 05 (single slides)
FA 1124-1005-50 *	**Flotillin (FLOT1/2)**	IgG	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system)
FA 1128-1005-1 **FA 1128-1010-1**	**NMOSD Screen 1** **aquaporin-4 (AQP-4)** **Myelin-oligodendrocyte glycoprotein (MOG)**	IgG	3 BIOCHIPs per field: transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system)
FC 1128-2005-1	**NMOSD Screen 1 EUROPattern** **aquaporin-4 (AQP-4)** **Myelin-oligodendrocyte glycoprotein (MOG)**	IgG PI	3 BIOCHIPs per field: transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90	20 x 05 (test system)
FA 1128-1005-50 **FA 1128-1010-50** **FB 1128-1005-50** **FB 1128-1010-50**	**aquaporin-4**	IgG	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FC 1128-1005-50 **FC 1128-1010-50** **FC 1128-2005-50** **FC 1128-2010-50**	**aquaporin-4 EUROPattern**	IgG PI	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)

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Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 112d-1005-1	**Autoimmune Encephalitis Mosaic 1**	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
FB 112d-1005-1	**glutamate receptor (type NMDA)**		transfected cells	EU 90	10 x 05 (single slides)
	glutamate receptor (type AMPA1)		transfected cells	EU 90	
	glutamate receptor (type AMPA2)		transfected cells	EU 90	
	contactin-associated protein 2 (CASPR2)		transfected cells	EU 90	
	leucine-rich glioma-inactivated protein 1 (LGI1)		transfected cells	EU 90	
	GABA B receptor		transfected cells	EU 90	
FA 112d-1005-6	**Autoimmune Encephalitis Mosaic 6**	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
FA 112d-1010-6	**glutamate receptor (type NMDA)**		transfected cells	EU 90	10 x 10 (test system)
FB 112d-1005-6	**contactin-associated protein 2 (CASPR2)**		transfected cells	EU 90	10 x 05 (single slides)
	glutamate receptors (type AMPA1/2)		transfected cells	EU 90	
	leucine-rich glioma-inactivated protein 1 (LGI1)		transfected cells	EU 90	
	dipeptidyl aminopeptidase-like protein 6 (DPPX)		transfected cells	EU 90	
	GABA B receptor		transfected cells	EU 90	
FC 112d-1005-6	**Autoimmune Encephalitis Mosaic 6 EUROPattern**	IgG PI	6 BIOCHIPs per field:		10 x 05 (test system)
FC 112d-1010-6	**glutamate receptor (type NMDA)**		transfected cells	EU 90	10 x 10 (test system)
FC 112d-2005-6	**contactin-associated protein 2 (CASPR2)**		transfected cells	EU 90	20 x 05 (test system)
FC 112d-2010-6	**glutamate receptors (type AMPA1/2)**		transfected cells	EU 90	20 x 10 (test system)
	leucine-rich glioma-inactivated protein 1 (LGI1)		transfected cells	EU 90	
	dipeptidyl aminopeptidase-like protein 6 (DPPX)		transfected cells	EU 90	
	GABA B receptor		transfected cells	EU 90	
FA 112d-1005-14	**RC-IIFT Neurology Mosaic 14A**	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
	glutamate receptor (type NMDA)		transfected cells	EU 90	
	contactin-associated protein 2 (CASPR2)		transfected cells	EU 90	
	IgLON family member 5 (IgLON5)		transfected cells	EU 90	
	dipeptidyl aminopeptidase-like protein 6 (DPPX)		transfected cells	EU 90	
	leucine-rich glioma-inactivated protein 1 (LGI1)		transfected cells	EU 90	
	GABA B receptor		transfected cells	EU 90	
FA 112d-1005-51	**glutamate receptor (type NMDA)**	IgG	transfected cells	EU 90	10 x 05 (test system)
FA 112d-1010-51			control transfection	EU 90	10 x 10 (test system)
FB 112d-1005-51			(2 BIOCHIPs per field)		10 x 05 (single slides)
FB 112d-1010-51					10 x 10 (single slides)
FC 112d-1005-51	**glutamate receptor (type NMDA) EUROPattern**	IgG PI	transfected cells	EU 90	10 x 05 (test system)
FC 112d-1010-51			control transfection	EU 90	10 x 10 (test system)
FC 112d-2005-51			(2 BIOCHIPs per field)		20 x 05 (test system)
FC 112d-2010-51					20 x 10 (test system)
FC 112d-12010-51					120 x 10 (test system)
FA 112k-1003-1	**glutamate receptor (type AMPA1)**	IgG	transfected cells	EU 90	10 x 03 (test system)
FA 112k-1005-1	**glutamate receptor (type AMPA2)**		transfected cells	EU 90	10 x 05 (test system)
FB 112k-1005-1			control transfection	EU 90	10 x 05 (single slides)
			(3 BIOCHIPs per field)		
FA 112l-1005-50	**GABA B receptor**	IgG	transfected cells	EU 90	10 x 05 (test system)
FB 112l-1005-50			control transfection	EU 90	10 x 05 (single slides)
			(2 BIOCHIPs per field)		
FA 112m-1005-50	**dipeptidyl aminopeptidase-like protein 6 (DPPX)**	IgG	transfected cells	EU 90	10 x 05 (test system)
			control transfection	EU 90	
			(2 BIOCHIPs per field)		
FC 112m-2005-50	**dipeptidyl aminopeptidase-like protein 6 (DPPX) EUROPattern**	IgG PI	transfected cells	EU 90	20 x 05 (test system)
			control transfection	EU 90	
			(2 BIOCHIPs per field)		
FA 112n-1005-52 *	**metabotropic glutamate receptor 5 (mGluR5)**	IgG	transfected cells	EU 90	10 x 05 (test system)
			control transfection	EU 90	
			(2 BIOCHIPs per field)		

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Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1151-1005-50	**IgLON family member 5 (IgLON5)**	IgG	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system)
FA 1156-1005-50 **FA 1156-1010-50**	**Myelin-oligodendrocyte glycoprotein (MOG)**	IgG	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system)
FC 1156-2005-50	**Myelin-Oligodendrocyte-Glycoprotein (MOG) EUROPattern**	IgG PI	transfected cells control transfection	EU 90 EU 90	20 x 05 (test system)
FA 1170-1005	**eye antigens**	IgAGM	eye	monkey	10 x 05 (test system)
FA 1172-1005	**retina**	IgAGM	eye	monkey	10 x 05 (test system)
FA 1200-1005 **FA 1200-1010** **FA 1200-2005** **FA 1200-18010** **FB 1200-1005** **FB 1200-1010** **FB 1200-2005** **FB 1200-18010**	**cytoplasm of granulocytes (cANCA, pANCA), nuclei of granulocytes (GS-ANA)**	IgG	granulocytes, ethanol-fixed	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 180 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 180 x 10 (single slides)
FC 1200-1005 **FC 1200-1010** **FC 1200-2005** **FC 1200-2010** **FC 1200-12010**	**cytoplasm of granulocytes (cANCA, pANCA), nuclei of granulocytes (GS-ANA) EUROPattern**	IgG EB	granulocytes, ethanol-fixed	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system)
FA 1201-1005 **FA 1201-1010** **FB 1201-1005** **FB 1201-1010**	**granulocytes (cANCA, pANCA)**	IgG	granulocytes, formaldehyde-fixed	human	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FC 1201-1005 **FC 1201-1010** **FC 1201-2005**	**granulocytes (cANCA, pANCA) EUROPattern**	IgG EB	granulocytes, formaldehyde-fixed	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system)
FA 1201-1005-2 **FA 1201-1010-2** **FA 1201-2005-2** **FA 1201-2010-2** **FB 1201-1005-2** **FB 1201-1010-2** **FB 1201-2005-2** **FB 1201-2010-2**	**Granulocyte Mosaic 2** **cANCA, pANCA, GS-ANA** **cANCA, pANCA**	IgG	2 BIOCHIPs per field: granulocytes (EOH) granulocytes (HCHO)	 human human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides)
FC 1201-1005-2 **FC 1201-1010-2** **FC 1201-2005-2** **FC 1201-2010-2** **FC 1201-12010-2**	**Granulocyte Mosaic 2 EUROPattern** **cANCA, pANCA, GS-ANA, EUROPattern** **cANCA, pANCA, EUROPattern**	IgG EB	2 BIOCHIPs per field: granulocytes (EOH) granulocytes (HCHO)	 human human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system)
FA 1201-1005-13 **FA 1201-1010-13** **FA 1201-2005-13** **FA 1201-2010-13** **FA 1201-1050-13** **FA 1201-12010-13** **FA 1201-2450-13** **FB 1201-1005-13** **FB 1201-1010-13** **FB 1201-2005-13** **FB 1201-2010-13** **FB 1201-1050-13**	**Granulocyte Mosaic 13** **cANCA, pANCA, GS-ANA** **cell nuclei (ANA), cANCA, pANCA** **cANCA, pANCA**	IgG	3 BIOCHIPs per field: granulocytes (EOH) HEp-2+granulocytes (EOH) granulocytes (HCHO)	 human human human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 50 (test system) 120 x 10 (test system) 24 x 50 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides) 10 x 50 (single slides)

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Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FC 1201-1005-13	Granulocyte Mosaic 13 EUROPattern	IgG EB	3 BIOCHIPs per field:		10 x 05 (test system)
FC 1201-1010-13	cANCA, pANCA, GS-ANA, EUROPattern		granulocytes (EOH)	human	10 x 10 (test system)
FC 1201-2005-13	cell nuclei (ANA), cANCA, pANCA		HEp-2+granulocytes (EOH)	human	20 x 05 (test system)
FC 1201-2010-13	cANCA, pANCA, EUROPattern		granulocytes (HCHO)	human	20 x 10 (test system)
FC 1201-12010-13					120 x 10 (test system)
FC 1201-2450-13					24 x 50 (test system)
FW1201-1005-13					10 x 05 (single slides)
FW1201-2010-13					20 x 10 (single slides)
FA 1201-1005-15	Granulocyte Mosaic 15	IgG	2 BIOCHIPs per field:		10 x 05 (test system)
FA 1201-1010-15	cANCA, pANCA, GS-ANA		granulocytes (EOH)	human	10 x 10 (test system)
FA 1201-2005-15	cell nuclei (ANA), cANCA, pANCA		HEp-2+granulocytes (EOH)	human	20 x 05 (test system)
FA 1201-2010-15					20 x 10 (test system)
FB 1201-1005-15					10 x 05 (single slides)
FB 1201-1010-15					10 x 10 (single slides)
FB 1201-2005-15					20 x 05 (single slides)
FB 1201-2010-15					20 x 10 (single slides)
FC 1201-1005-15	Granulocyte Mosaic 15 EUROPattern	IgG EB	2 BIOCHIPs per field:		10 x 05 (test system)
FC 1201-1010-15	cANCA, pANCA, GS-ANA, EUROPattern		granulocytes (EOH)	human	10 x 10 (test system)
FC 1201-2010-15	cell nuclei (ANA), cANCA, pANCA		HEp-2+granulocytes (EOH)	human	20 x 10 (test system)
FC 1201-1050-15					10 x 50 (test system)
FW1201-1005-15					10 x 05 (single slides)
FA 1201-1005-22	EUROPLUS Granulocyte Mosaic 22	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FA 1201-1010-22	cANCA, pANCA, GS-ANA		granulocytes (EOH)	human	10 x 10 (test system)
FA 1201-2005-22	cANCA, pANCA		granulocytes (HCHO)	human	20 x 05 (test system)
FB 1201-1005-22	pANCA: myeloperoxidase (MPO)		MPO BIOCHIPs		10 x 05 (single slides)
FB 1201-1010-22	cANCA: proteinase 3 (PR3)		PR3 BIOCHIPs		10 x 10 (single slides)
FB 1201-2005-22					20 x 05 (single slides)
FC 1201-1005-22	EUROPLUS Granulocyte Mosaic 22	IgG EB	4 BIOCHIPs per field:		10 x 05 (test system)
FC 1201-1010-22	EUROPattern				10 x 10 (test system)
FC 1201-2005-22	cANCA, pANCA, GS-ANA, EUROPattern		granulocytes (EOH)	human	20 x 05 (test system)
FC 1201-2010-22	cANCA, pANCA, EUROPattern		granulocytes (HCHO)	human	20 x 10 (test system)
	pANCA: myeloperoxidase (MPO), EUROPattern		MPO BIOCHIPs		
	cANCA: proteinase 3 (PR3), EUROPattern		PR3 BIOCHIPs		
FA 1201-1005-25	EUROPLUS Granulocyte Mosaic 25	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
FA 1201-1010-25	cANCA, pANCA, GS-ANA		granulocytes (EOH)	human	10 x 10 (test system)
FA 1201-2005-25	cell nuclei (ANA), cANCA, pANCA		HEp-2+granulocytes (EOH)	human	20 x 05 (test system)
FA 1201-2010-25	cANCA, pANCA		granulocytes (HCHO)	human	20 x 10 (test system)
FB 1201-1005-25	glomerular basement membrane (GBM)		GBM BIOCHIPs		10 x 05 (single slides)
FB 1201-1010-25	pANCA: myeloperoxidase (MPO)		MPO BIOCHIPs		10 x 10 (single slides)
FB 1201-2005-25	cANCA: proteinase 3 (PR3)		PR3 BIOCHIPs		20 x 05 (single slides)
FB 1201-2010-25					20 x 10 (single slides)
FC 1201-1005-25	EUROPLUS Granulocyte Mosaic 25	IgG EB	6 BIOCHIPs per field:		10 x 05 (test system)
FC 1201-1010-25	EUROPattern				10 x 10 (test system)
FC 1201-2005-25	cANCA, pANCA, GS-ANA, EUROPattern		granulocytes (EOH)	human	20 x 05 (test system)
FC 1201-2010-25	cell nuclei (ANA), cANCA, pANCA		HEp-2+granulocytes (EOH)	human	20 x 10 (test system)
FW1201-1005-25	cANCA, pANCA, EUROPattern		granulocytes (HCHO)	human	10 x 05 (single slides)
FW1201-2010-25	glom. basement membrane (GBM), EUROPattern		GBM BIOCHIPs		20 x 10 (single slides)
	pANCA: myeloperoxidase (MPO), EUROPattern		MPO BIOCHIPs		
	cANCA: proteinase 3 (PR3), EUROPattern		PR3 BIOCHIPs		
FA 1201-1005-32	EUROPLUS Granulocyte Mosaic 32	IgG	5 BIOCHIPs per field:		10 x 05 (test system)
FA 1201-1010-32	cANCA, pANCA, GS-ANA		granulocytes (EOH)	human	10 x 10 (test system)
FA 1201-2005-32	cANCA, pANCA		granulocytes (HCHO)	human	20 x 05 (test system)
FA 1201-2010-32	cell nuclei (ANA), cANCA, pANCA		HEp-2+granulocytes (EOH)	human	20 x 10 (test system)
FB 1201-1005-32	pANCA: myeloperoxidase (MPO)		MPO BIOCHIPs		10 x 05 (single slides)
FB 1201-1010-32	cANCA: proteinase 3 (PR3)		PR3 BIOCHIPs		10 x 10 (single slides)
FB 1201-2005-32					20 x 05 (single slides)
FB 1201-2010-32					20 x 10 (single slides)

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Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FC 1201-1005-32	EUROPLUS Granulocyte Mosaic 32	IgG EB	5 BIOCHIPs per field:		10 x 05 (test system)
FC 1201-1010-32	EUROPattern				10 x 10 (test system)
FC 1201-2005-32	cANCA, pANCA, GS-ANA, EUROPattern		granulocytes (EOH)	human	20 x 05 (test system)
FC 1201-2010-32	cANCA, pANCA, EUROPattern		granulocytes (HCHO)	human	20 x 10 (test system)
FC 1201-12010-32	cell nuclei (ANA), cANCA, pANCA		HEp-2+granulocytes (EOH)	human	120 x 10 (test system)
FW1201-1005-32	pANCA: myeloperoxidase (MPO), EUROPattern		MPO BIOCHIPs		10 x 05 (single slides)
FW1201-1010-32	cANCA: proteinase 3 (PR3), EUROPattern		PR3 BIOCHIPs		10 x 10 (single slides)
FA 1230-1005	thrombocyte antigens	IgG	thrombocytes	human	10 x 05 (test system)
FA 1230-1010					10 x 10 (test system)
FB 1230-1005					10 x 05 (single slides)
FB 1230-1010					10 x 10 (single slides)
FA 1250-1005	renal glomeruli (GBM)	IgG	kidney	monkey	10 x 05 (test system)
FA 1250-1010	and renal tubuli				10 x 10 (test system)
FB 1250-1005					10 x 05 (single slides)
FB 1250-1010					10 x 10 (single slides)
FC 1250-2005	Nephrology Screen (KM) EUROPattern	IgG			20 x 05 (test system)
	renal glomeruli (GBM)		kidney	monkey	
FA 1250-1005-1	EUROPLUS	IgG	2 BIOCHIPs per field:		10 x 05 (test system)
FA 1250-1010-1	kidney glomeruli and tubuli		kidney	monkey	10 x 10 (test system)
FB 1250-1005-1	glomerular basement membrane (GBM)		GBM BIOCHIPs		10 x 05 (single slides)
FB 1250-1010-1					10 x 10 (single slides)
FC 1250-2005-1	EUROPLUS Nephrology Screen 1 EUROPattern	IgG	2 BIOCHIPs per field		20 x 05 (test system)
	Renal glomeruli (GBM)		kidney	monkey	
	glomerular basement membrane (GBM)		GBM-EUROPLUS		
FA 1254-1005-1	Membranous Nephropathy Mosaic 1	IgG	3 BIOCHIPs per field:		10 x 05 (test system)
FA 1254-1010-1	phospholipase A2 receptor (PLA2R)		transfected cells	EU 90	10 x 10 (test system)
FB 1254-1005-1	Thrombospondin type-1 domain-containing		transfected cells	EU 90	10 x 05 (single slides)
FB 1254-1010-1	protein 7A (THSD7A)		control transfection	EU 90	10 x 10 (single slides)
FA 1254-1005-50	phospholipase A2 receptor (PLA2R)	IgG	transfected cells	EU 90	10 x 05 (test system)
FA 1254-1010-50			control transfection	EU 90	10 x 10 (test system)
FA 1254-2010-50			(2 BIOCHIPs per field)		20 x 10 (test system)
FB 1254-1005-50					10 x 05 (single slides)
FB 1254-1010-50					10 x 10 (single slides)
FC 1254-1005-50	phospholipase A2 receptor (PLA2R)	IgG PI	transfected cells	EU 90	10 x 05 (test system)
FC 1254-1010-50	EUROPattern		control transfection	EU 90	10 x 10 (test system)
FC 1254-2005-50			(2 BIOCHIPs per field)		20 x 05 (test system)
FC 1254-2010-50					20 x 10 (test system)
FA 1254-1005-51	Thrombospondin type-1 domain-	IgG	transfected cells	EU 90	10 x 05 (test system)
FA 1254-2005-51	containing protein 7A (THSD7A)		control transfection	EU 90	20 x 05 (test system)
			(2 BIOCHIPs per field)		
FA 1300-1005-1	Liver Mosaic 1	IgG	2 BIOCHIPs per field:		10 x 05 (test system)
FA 1300-1010-1	liver-kidney microsomes (LKM), ANA		liver	rat	10 x 10 (test system)
FA 1300-2005-1	mitochondria (AMA), LKM		kidney	rat	20 x 05 (test system)
FB 1300-1005-1					10 x 05 (single slides)
FB 1300-1010-1					10 x 10 (single slides)
FB 1300-2005-1					20 x 05 (single slides)
FA 1300-1005-8	Liver Mosaic 8	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
FA 1300-1010-8	liver antigens, cell nuclei (ANA)		liver	monkey	10 x 10 (test system)
FA 1300-2005-8	F-actin		VSM47	rat	20 x 05 (test system)
FB 1300-1005-8	cell nuclei (ANA)		HEp-2 cells	human	10 x 05 (single slides)
FB 1300-1010-8	LKM, ANA		liver	rat	10 x 10 (single slides)
FB 1300-2005-8	mitochondria (AMA), LKM		kidney	rat	20 x 05 (single slides)
	smooth muscles (ASMA)		stomach	rat	

Diagnostics for Indirect Immunofluorescence: Organ-Specific Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1300-1005-9 **FA 1300-1010-9** **FB 1300-1005-9** **FB 1300-1010-9**	**Liver Mosaic 9** **mitochondria (AMA), LKM** **LKM, ANA** **smooth muscles (ASMA)** **F-actin**	IgG	4 BIOCHIPs per field: kidney liver stomach VSM47	 rat rat rat rat	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FC 1300-1005-9 **FC 1300-1010-9** **FC 1300-2005-9** **FC 1300-2010-9**	**Autoimmune liver diseases Screen 9** **EUROPattern** **mitochondria (AMA), LKM** **LKM, ANA** **smooth muscles (ASMA)** **F-actin**	IgG PI	4 BIOCHIPs per field: kidney liver stomach VSM47	 rat rat rat rat	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FA 1302-1005-50 **FA 1302-1010-50**	**soluble liver antigen/** **liver-pancreas antigen (SLA/LP)**	IgG	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system)
FA 1360-1005 **FA 1360-1010** **FA 1360-2005** **FA 1360-2010** **FB 1360-1005** **FB 1360-1010** **FB 1360-2005** **FB 1360-2010**	**parietal cells** **(PCA)**	IgG	stomach	monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides)
FC 1360-2005 **FC 1360-2010**	**Anti-Parietal cells (SM) IIFT EUROPattern**	IgG	stomach	monkey	20 x 05 test system 20 x 10 test system
FA 1362-1005 **FB 1362-1005**	**intrinsic factor**	IgG	intrinsic factor BIOCHIPs		10 x 05 (test system) 10 x 05 (single slides)
FA 1362-1005-1 **FA 1362-1010-1** **FA 1362-2005-1** **FB 1362-1005-1** **FB 1362-1010-1** **FB 1362-2005-1**	**EUROPLUS** **parietal cells (PCA)** **intrinsic factor**	IgG	2 BIOCHIPs per field: stomach intrinsic factor BIOCHIPs	 monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides)
FA 1391-1005-3 **FB 1391-1005-3**	**CIBD Screen 3** **pancreas ag rPAg1(CUZD1) / rPAg2(GP2)** **intestinal goblet cells**	IgA/G	3 BIOCHIPs per field: transfected cells goblet cells control transfection	 EU 90 EU 80 EU 90	10 x 05 (test system) 10 x 05 (single slides)
FA 1391-1005-4	**CIBD Profile 3** **upper row:** **pancreas ag rPAg1(CUZD1) / rPAg2(GP2)** **intestinal goblet cells** **pANCA** **DNA-bound lactoferrin (pANCA)** **ANCA negative** **bottom row:** **Saccharomyces cerevisiae** **format 1003: slides with 3 patient profiles** **format 1005: slides with 5 patient profiles**	IgA/G	 transfected cells control transfection goblet cells granulocytes (EOH) LFS granulocytes HSS granulocytes fungal smear	 EU 90 EU 90 EU 80 human human human S. cerevisiae	10 x 05 (test system)
FA 1391-1005-7 **FB 1391-1005-7**	**CIBD Profile 7** **upper row:** **pancreas ag rPAg1(CUZD1) / rPAg2(GP2)** **intestinal goblet cells** **pANCA** **bottom row:** **Saccharomyces cerevisiae** **format 1003: slides with 3 patient profiles** **format 1005: slides with 5 patient profiles**	IgA/G	 transfected cells goblet cells granulocytes (EOH) control transfection fungal smear	 EU 90 EU 80 human EU 90 S. cerevisiae	10 x 05 (test system) 10 x 05 (single slides)

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Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1420-1005 **FB 1420-1005**	**parotid gland excretory ducts and acini**	IgG	parotid gland	monkey	10 x 05 (test system) 10 x 05 (single slides)
FA 1430-1005 **FB 1430-1005**	**skeletal muscle**	IgG	musculus iliopsoas	monkey	10 x 05 (test system) 10 x 05 (single slides)
FC 1430-2005	**Myasthenia gravis Screen (SMM) EUROPattern** **skeletal muscle**	IgG	1 BIOCHIP per field: musculus iliopsoas	 monkey	20 x 05 (test system)
FA 1430-1005-1 **FB 1430-1005-1**	**Mosaic Heart Muscle/Skeletal Muscle** **heart muscle** **skeletal muscle**	IgG	2 BIOCHIPs per field: heart musculus iliopsoas	 monkey monkey	10 x 05 (test system) 10 x 05 (single slides)
FA 1434-1005-90 **FA 1434-1010-90**	**Muscle-Specific Kinase (MuSK)** **---**	IgG	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system)
FA 1435-1005-2 **FA 1435-1010-2**	**Myasthenia gravis Mosaic 2** **adult acetylcholine receptor (AChR-E)** **fetal acetylcholine receptor (AChR-G)** **Muscle-specific Kinase (MuSK)**	IgG	4 BIOCHIPs per field: transfected cells transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system)
FA 1435-1005-90 **FA 1435-1010-90**	**Anti-Acetylcholine Receptor (AChR) IIFT** **adulter Acetylcholinrezeptor (AChR-E)** **fetaler Acetylcholinrezeptor (AChR-G)** **---**	IgG	3 BIOCHIPs per field: transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system)
FA 1439-1005-1 **FB 1439-1005-1**	**Anti-VGKC-Ass. Proteins Mosaic 1** **leucine-rich glioma-inact. prot. 1 (LGI1)** **contactin-associated protein 2 (CASPR2)**	IgG	3 BIOCHIPs per field: transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90	10 x 05 (test system) 10 x 05 (single slides)
FC 1439-1005-1 **FC 1439-12010-1**	**Anti-VGKC-Ass. Proteins Mosaic 1 EUROPattern** **leucine-rich glioma-inact. prot. 1 (LGI1)** **contactin-associated protein 2 (CASPR2)**	IgG PI	3 BIOCHIPs per field: transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90	10 x 05 (test system) 120 x 10 (test system)
FA 1439-1005-50	**contactin-associated protein 2 (CASPR2)**	IgG	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system)
FA 1439-1005-51	**leucine-rich glioma-inactivated protein 1 (LGI1)**	IgG	transfected cells control transfection (2 BIOCHIPs per field)	EU 90 EU 90	10 x 05 (test system)
FA 1461-1005 **FA 1461-2005** **FB 1461-1005** **FB 1461-2005**	**heart muscle**	IgG	heart	monkey	10 x 05 (test system) 20 x 05 (test system) 10 x 05 (single slides) 20 x 05 (single slides)
FA 1501-1005 **FA 1501-1010** **FA 1501-2005** **FB 1501-1005** **FB 1501-1010** **FB 1501-2005**	**epidermis:** **prickle cell desmosomes** **epidermal basement membrane**	IgG	oesophagus	monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides)
FC 1501-1005 **FC 1501-1010** **FC 1501-2005**	**Dermatology Screen (EM) EUROPattern** **epidermis:** **prickle cell desmosomes** **epidermal basement membrane**	IgG+IgG4	oesophagus	monkey	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system)

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Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1501-1005-7	**Dermatology Mosaic 7**	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
FA 1501-1010-7	**epidermis**		oesophagus	monkey	10 x 10 (test system)
FB 1501-1005-7	**pemphigoid antigens**		salt-split skin	monkey	10 x 05 (single slides)
FB 1501-1010-7	**BP230gC**		transfected cells	EU 90	10 x 10 (single slides)
	desmoglein 1		transfected cells	EU 90	
	desmoglein 3		transfected cells	EU 90	
	BP180-NC16A-4X		BP180-NC16A-4X BIOCHIPs		
FC 1501-1005-7	**EUROPLUS Dermatology Mosaic 7 EUROPattern**	IgG+IgG4	6 BIOCHIPs per field:		10 x 05 (test system)
FC 1501-1010-7	**epidermis**		oesophagus	monkey	10 x 10 (test system)
FC 1501-2005-7	**pemphigoid antigens**		salt-split skin	monkey	20 x 05 (test system)
FC 1501-2010-7	**BP230gC**		transfected cells	EU 90	20 x 10 (test system)
	desmoglein 1		transfected cells	EU 90	
	desmoglein 3		transfected cells	EU 90	
	BP180-NC16A-4X		BP180-NC16A-4X EUROPLUS		
FA 1501-1005-20	**Dermatology Mosaic 20**	IgG	2 BIOCHIPs per field:		10 x 05 (test system)
FA 1501-1010-20	**epidermis**		oesophagus	monkey	10 x 10 (test system)
FA 1501-2005-20	**pemphigoid antigens**		salt-split skin	monkey	20 x 05 (test system)
FB 1501-1005-20					10 x 05 (single slides)
FB 1501-1010-20					10 x 10 (single slides)
FB 1501-2005-20					20 x 05 (single slides)
FC 1501-1010-20	**Dermatology Mosaic 20 EUROPattern**	IgG+IgG4	2 BIOCHIPs per field:		10 x 10 (test system)
FC 1501-2005-20	**epidermis**		oesophagus	monkey	20 x 05 (test system)
FC 1501-2010-20	**pemphigoid antigens**		salt-split skin	monkey	20 x 10 (test system)
FA 150b-1005-50	**laminin 332 (LAM332)**	IgG+IgG4	transfected cells	EU 90	10 x 05 (test system)
			control transfection	EU 90	
			(2 BIOCHIPs per field)		

Diagnostics for Indirect Immunofluorescence: Systemic Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1510-1005-1	**cell nuclei**	IgG	HEp-2 cells	human	10 x 05 (test system)
FA 1510-1010-1	**(ANA global test)**		liver	monkey	10 x 10 (test system)
FA 1510-2005-1			(2 BIOCHIPs per field)		20 x 05 (test system)
FA 1510-2010-1					20 x 10 (test system)
FA 1510-1050-1					10 x 50 (test system)
FA 1510-5010-1					50 x 10 (test system)
FA 1510-0010-1					100 x 10 (test system)
FA 1510-12010-1					120 x 10 (test system)
FA 1510-2450-1					24 x 50 (test system)
FB 1510-1005-1					10 x 05 (single slides)
FB 1510-1010-1					10 x 10 (single slides)
FB 1510-2005-1					20 x 05 (single slides)
FB 1510-2010-1					20 x 10 (single slides)
FB 1510-1050-1					10 x 50 (single slides)
FB 1510-5010-1					50 x 10 (single slides)
FB 1510-0010-1					100 x 10 (single slides)
FC 1510-1005-1	**cell nuclei (ANA) EUROPattern**	IgG PI	HEp-2 cells	human	10 x 05 (test system)
FC 1510-1010-1	**cell nuclei (ANA)**		liver	monkey	10 x 10 (test system)
FC 1510-2005-1			(2 BIOCHIPs per field)		20 x 05 (test system)
FC 1510-2010-1					20 x 10 (test system)
FC 1510-12010-1					120 x 10 (test system)
FC 1510-2450-1					24 x 50 (test system)
FW1510-2010-1					20 x 10 (single slides)
FW1510-1050-1					10 x 50 (single slides)
FA 1510-1005-2	**cell nuclei (ANA)**	IgG	HEp-2 cells	human	10 x 05 (test system)
FA 1510-1010-2	**mitochondria (AMA)**		kidney	rat	10 x 10 (test system)
FB 1510-1005-2			(2 BIOCHIPs per field)		10 x 05 (single slides)
FB 1510-1010-2					10 x 10 (single slides)
FA 1512-1005-1	**cell nuclei**	IgG	HEp-20-10 cells	human	10 x 05 (test system)
FA 1512-1010-1	**(ANA global test)**		liver	monkey	10 x 10 (test system)
FA 1512-2005-1			(2 BIOCHIPs per field)		20 x 05 (test system)
FA 1512-2010-1					20 x 10 (test system)
FA 1512-1050-1					10 x 50 (test system)
FA 1512-5010-1					50 x 10 (test system)
FA 1512-0010-1					100 x 10 (test system)
FA 1512-12010-1					120 x 10 (test system)
FA 1512-2450-1					24 x 50 (test system)
FB 1512-1005-1					10 x 05 (single slides)
FB 1512-1010-1					10 x 10 (single slides)
FB 1512-2005-1					20 x 05 (single slides)
FB 1512-2010-1					20 x 10 (single slides)
FB 1512-1050-1					10 x 50 (single slides)
FB 1512-5010-1					50 x 10 (single slides)
FB 1512-0010-1					100 x 10 (single slides)
FC 1512-1005-1	**cell nuclei (ANA) EUROPattern**	IgG PI	HEp-20-10 cells	human	10 x 05 (test system)
FC 1512-1010-1	**cell nuclei (ANA)**		liver	monkey	10 x 10 (test system)
FC 1512-2005-1			(2 BIOCHIPs per field)		20 x 05 (test system)
FC 1512-2010-1					20 x 10 (test system)
FC 1512-1050-1					10 x 50 (test system)
FC 1512-12010-1					120 x 10 (test system)
FC 1512-2450-1					24 x 50 (test system)
FW1512-1005-1					10 x 05 (single slides)
FW1512-1010-1					10 x 10 (single slides)
FW1512-2010-1					20 x 10 (single slides)
FW1512-1050-1					10 x 50 (single slides)
FA 1512-1005-2	**cell nuclei (ANA)**	IgG	HEp-20-10 cells	human	10 x 05 (test system)
FA 1512-1010-2	**mitochondria (AMA)**		kidney	rat	10 x 10 (test system)
FA 1512-1050-2			(2 BIOCHIPs per field)		10 x 50 (test system)
FB 1512-1005-2					10 x 05 (single slides)
FB 1512-1010-2					10 x 10 (single slides)
FB 1512-1050-2					10 x 50 (single slides)
FC 1512-1005-2	**cell nuclei (ANA) EUROPattern**	IgG PI	HEp-20-10 cells	human	10 x 05 (test system)
FC 1512-12010-2	**mitochondria (AMA)**		kidney	rat	120 x 10 (test system)
FC 1512-2450-2			(2 BIOCHIPs per field)		24 x 50

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Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1512-1005-10 **FA 1512-1010-10**	**EUROPLUS ANA Mosaic 10A** **cell nuclei (ANA)** **SS-A + SS-B**	IgG	2 BIOCHIPs per field: HEp-20-10 cells SS-A+SS-B BIOCHIPs	human	10 x 05 (test system) 10 x 10 (test system)
FA 1512-1005-22 **FA 1512-1010-22**	**EUROPLUS ANA Mosaic 22A** **cell nuclei (ANA)** **cell nuclei (ANA)** **nRNP/Sm + Sm + SS-A** **SS-B + Scl-70 + Jo-1**	IgG	4 BIOCHIPs per field: HEp-20-10 cells liver nRNP/Sm+Sm+SS-A BIOCHIPs SS-B+Scl-70+Jo-1 BIOCHIPs	human monkey	10 x 05 (test system) 10 x 10 (test system)
FA 1520-1005 **FA 1520-1010** **FA 1520-2005** **FA 1520-2010** **FA 1520-1050** **FA 1520-5010** **FA 1520-0010** **FA 1520-12010** **FB 1520-1005** **FB 1520-1010** **FB 1520-2005** **FB 1520-2010** **FB 1520-1050** **FB 1520-5010** **FB 1520-0010**	**cell nuclei (ANA)**	IgG	HEp-2 cells	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 50 (test system) 50 x 10 (test system) 100 x 10 (test system) 120 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides) 10 x 50 (single slides) 50 x 10 (single slides) 100 x 10 (single slides)
FC 1520-1005 **FC 1520-1010** **FC 1520-2005** **FC 1520-2010** **FC 1520-1050** **FC 1520-12010** **FC 1520-2450** **FW 1520-1005** **FW 1520-1010** **FW 1520-2005** **FW 1520-2010** **FW 1520-1050**	**cell nuclei (ANA)** **EUROPattern**	IgG PI	HEp-2 cells	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 50 (test system) 120 x 10 (test system) 24 x 50 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides) 10 x 50 (single slides)
FA 1522-1005 **FA 1522-1010** **FA 1522-2005** **FA 1522-2010** **FA 1522-5010** **FA 1522-0010** **FB 1522-1005** **FB 1522-1010** **FB 1522-2005** **FB 1522-2010** **FB 1522-5010** **FB 1522-0010**	**cell nuclei (ANA)**	IgG	HEp-20-10 cells	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 50 x 10 (test system) 100 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides) 50 x 10 (single slides) 100 x 10 (single slides)
FC 1522-1005 **FC 1522-1010** **FC 1522-2005** **FC 1522-2010** **FC 1522-1050** **FC 1522-12010** **FW 1522-1005** **FW 1522-2005** **FW 1522-2010**	**cell nuclei (ANA)** **EUROPattern**	IgG PI	HEp-20-10 cells	human	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 50 (test system) 120 x 10 (test system) 10 x 05 (single slides) 20 x 05 (single slides) 20 x 10 (single slides)
FA 1572-1005 **FA 1572-1010** **FA 1572-2005** **FA 1572-2010** **FB 1572-1005** **FB 1572-1010** **FB 1572-2005** **FB 1572-2010**	**dsDNA**	IgG	flagellates	Crithidia luciliae	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides)

Diagnostics for Indirect Immunofluorescence: Systemic Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FC 1572-1005 **FC 1572-1010** **FC 1572-2005** **FC 1572-2010**	**dsDNA** **EUROPattern**	IgG EB	flagellates	Crithidia luciliae	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FA 1572-1005-1 **FA 1572-1010-1** **FA 1572-2005-1** **FA 1572-2010-1**	**dsDNA (sensitive)**	IgG	flagellates	Crithidia luciliae	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FC 1572-1005-1 **FC 1572-1010-1** **FC 1572-2005-1** **FC 1572-2010-1** **FC 1572-12010-1**	**dsDNA (sensitive)** **EUROPattern**	IgG EB	flagellates	Crithidia luciliae	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 120 x 10 (test system)
FA 1620-1005 **FA 1620-1010** **FA 1620-2005** **FA 1620-2010** **FB 1620-1005** **FB 1620-1010** **FB 1620-2005** **FB 1620-2010**	**mitochondria (AMA)**	IgG	kidney	rat	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides)
FA 1620-1005-1 **FA 1620-1010-1** **FA 1620-2005-1** **FA 1620-2010-1** **FA 1620-1050-1** **FB 1620-1005-1** **FB 1620-1010-1** **FB 1620-2005-1** **FB 1620-2010-1** **FB 1620-1050-1**	**mitochondria (AMA)** **smooth muscles (ASMA)**	IgG	kidney stomach (2 BIOCHIPs per field)	rat rat	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 50 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides) 10 x 50 (single slides)
FC 1620-1005-1 **FC 1620-1010-1** **FC 1620-2005-1** **FC 1620-2010-1**	**AMA/ASMA IIFT (KR/SR) EUROPattern** **mitochondria (AMA)** **smooth muscles (ASMA)**	IgG	2 BIOCHIPs per field: kidney stomach	 rat rat	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system)
FA 1620-1005-5 **FA 1620-1010-5** **FB 1620-1005-5** **FB 1620-1010-5**	**EUROPLUS** **mitochondria (AMA)** **smooth muscles (ASMA)** **cell nuclei (ANA)** **M2 antigen**	IgG	4 BIOCHIPs per field: kidney stomach HEp-2 cells M2 BIOCHIPs	 rat rat human	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides)
FA 1651-1005 **FA 1651-1010**	**F-actin**	IgG	VSM47	rat	10 x 05 (test system) 10 x 10 (test system)
FC 1651-1005 **FC 1651-1010**	**F-actin EUROPattern**	IgG PI	VSM47	rat	10 x 05 (test system) 10 x 10 (test system)
FA 1710-1005 **FA 1710-1010** **FA 1710-2005** **FA 1710-2010** **FB 1710-1005** **FB 1710-1010** **FB 1710-2005** **FB 1710-2010**	**smooth muscles** **(ASMA)**	IgG	stomach	rat	10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system) 20 x 10 (test system) 10 x 05 (single slides) 10 x 10 (single slides) 20 x 05 (single slides) 20 x 10 (single slides)
FA 1710-1005-1 **FA 1710-2010-1** **FB 1710-1005-1**	**smooth muscles (ASMA)** **F-actin**	IgG	stomach VSM47 (2 BIOCHIPs per field)	rat rat	10 x 05 (test system) 20 x 10 (test system) 10 x 05 (single slides)

Diagnostics for Indirect Immunofluorescence: Systemic Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1800-1005-1	**Mosaic Basic Profile 1**	IgG	3 BIOCHIPs per field:		10 x 05 (test system)
FA 1800-1010-1	**cell nuclei (ANA)**		HEp-2 cells	human	10 x 10 (test system)
FA 1800-2005-1	**mitochondria (AMA)**		kidney	rat	20 x 05 (test system)
FB 1800-1005-1	**smooth muscles (ASMA)**		stomach	rat	10 x 05 (single slides)
FB 1800-1010-1					10 x 10 (single slides)
FB 1800-2005-1					20 x 05 (single slides)
FA 1800-1005-2	**Mosaic Basic Profile 2**	IgG	3 BIOCHIPs per field:		10 x 05 (test system)
FA 1800-1010-2	**cell nuclei (ANA), LKM**		liver	rat	10 x 10 (test system)
FA 1800-2005-2	**mitochondria (AMA), LKM**		kidney	rat	20 x 05 (test system)
FA 1800-2010-2	**smooth muscles (ASMA)**		stomach	rat	20 x 10 (test system)
FA 1800-12010-2					120 x 10 (test system)
FB 1800-1005-2					10 x 05 (single slides)
FB 1800-1010-2					10 x 10 (single slides)
FB 1800-2005-2					20 x 05 (single slides)
FB 1800-2010-2					20 x 10 (single slides)
FC 1800-1010-2	**Mosaic Basic Profile 2 EUROPattern**	IgG	3 BIOCHIPs per field:		10 x 10 (test system)
FC 1800-2005-2	**cell nuclei (ANA), LKM**		liver	rat	20 x 05 (test system)
FC 1800-2010-2	**mitochondria (AMA), LKM**		kidney	rat	20 x 10 (test system)
FC 1800-12010-2	**smooth muscles (ASMA)**		stomach	rat	120 x 10 (test system)
FA 1800-1005-3	**Mosaic Basic Profile 3**	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FA 1800-1010-3	**cell nuclei (ANA)**		HEp-2 cells	human	10 x 10 (test system)
FA 1800-2005-3	**cell nuclei (ANA)**		liver	monkey	20 x 05 (test system)
FB 1800-1005-3	**mitochondria (AMA)**		kidney	rat	10 x 05 (single slides)
FB 1800-1010-3	**smooth muscles (ASMA)**		stomach	rat	10 x 10 (single slides)
FB 1800-2005-3					20 x 05 (single slides)
FA 1802-1005-3	**Mosaic Basic Profile 3A**	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FA 1802-1010-3	**cell nuclei (ANA)**		HEp-20-10 cells	human	10 x 10 (test system)
FA 1802-2005-3	**cell nuclei (ANA)**		liver	monkey	20 x 05 (test system)
FA 1802-2010-3	**mitochondria (AMA)**		kidney	rat	20 x 10 (test system)
FB 1802-1005-3	**smooth muscles (ASMA)**		stomach	rat	10 x 05 (single slides)
FB 1802-1010-3					10 x 10 (single slides)
FB 1802-2005-3					20 x 05 (single slides)
FB 1802-2010-3					20 x 10 (single slides)
FC 1802-1005-3	**Mosaic Basic Profile 3A EUROPattern**	IgG PI	4 BIOCHIPs per field:		10 x 05 (test system)
FC 1802-1010-3	**cell nuclei (ANA) EUROPattern**		HEp-20-10 cells	human	10 x 10 (test system)
FC 1802-2005-3	**cell nuclei (ANA)**		liver	monkey	20 x 05 (test system)
FC 1802-2010-3	**mitochondria (AMA)**		kidney	rat	20 x 10 (test system)
	smooth muscles (ASMA)		stomach	rat	
FA 1805-1005-13	**Mosaic Basic Profile 13B**	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FA 1805-1010-13	**cell nuclei (ANA)**		HEp-2 cells	human	10 x 10 (test system)
FA 1805-2005-13	**cell nuclei (ANA), LKM**		liver	rat	20 x 05 (test system)
FB 1805-1005-13	**mitochondria (AMA), LKM**		kidney	rat	10 x 05 (single slides)
FB 1805-1010-13	**smooth muscles (ASMA)**		stomach	rat	10 x 10 (single slides)
FB 1805-2005-13					20 x 05 (single slides)
FC 1805-1010-13	**Mosaic Basic Profile 13B EUROPattern**	IgG PI	4 BIOCHIPs per field:		10 x 10 (test system)
FC 1805-2005-13	**cell nuclei (ANA), EUROPattern**		HEp-2 cells	human	20 x 05 (test system)
FC 1805-2010-13	**cell nuclei (ANA), LKM**		liver	rat	20 x 10 (test system)
	mitochondria (AMA), LKM		kidney	rat	
	smooth muscles (ASMA)		stomach	rat	
FA 1812-1005-3	**Mosaic Basic Profile 3C**	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FA 1812-1010-3	**cell nuclei (ANA)**		HEp-20-10 cells	human	10 x 10 (test system)
FA 1812-2005-3	**cell nuclei (ANA), LKM**		liver	rat	20 x 05 (test system)
FA 1812-0010-3	**mitochondria (AMA), LKM**		kidney	rat	100 x 10 (test system)
FB 1812-1005-3	**smooth muscles (ASMA)**		stomach	rat	10 x 05 (single slides)
FB 1812-1010-3					10 x 10 (single slides)
FB 1812-2005-3					20 x 05 (single slides)
FB 1812-0010-3					100 x 10 (single slides)

Diagnostics for Indirect Immunofluorescence: Systemic Autoantibodies

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FC 1812-1005-3	**Mosaic Basic Profile 3C EUROPattern**	IgG PI	4 BIOCHIPs per field:		10 x 05 (test system)
FC 1812-1010-3	**cell nuclei (ANA), EUROPattern**		HEp-20-10 cells	human	10 x 10 (test system)
FC 1812-2005-3	**cell nuclei (ANA), LKM**		liver	rat	20 x 05 (test system)
FC 1812-0010-3	**mitochondria (AMA), LKM**		kidney	rat	100 x 10 (test system)
	smooth muscles (ASMA)		stomach	rat	
FA 1913-1005 A	**endomysium**	IgA	small intestine	monkey	10 x 05 (test system)
FA 1913-1010 A					10 x 10 (test system)
FA 1913-2005 A					20 x 05 (test system)
FB 1913-1005 A					10 x 05 (single slides)
FB 1913-1010 A					10 x 10 (single slides)
FB 1913-2005 A					20 x 05 (single slides)
FA 1913-1005-1 A	**EUROPLUS**	IgA	2 BIOCHIPs per field:		10 x 05 (test system)
FA 1913-1010-1 A	**endomysium**		small intestine	monkey	10 x 10 (test system)
FA 1913-2005-1 A	**gliadin (GAF-3X)**		gliadin (GAF-3X) BIOCHIPs		20 x 05 (test system)
FB 1913-1005-1 A					10 x 05 (single slides)
FB 1913-1010-1 A					10 x 10 (single slides)
FB 1913-2005-1 A					20 x 05 (single slides)
FA 1914-1005 A	**endomysium**	IgA	liver	monkey	10 x 05 (test system)
FA 1914-1010 A					10 x 10 (test system)
FA 1914-2005 A					20 x 05 (test system)
FA 1914-2010 A					20 x 10 (test system)
FA 1914-12010 A					120 x 10 (test system)
FA 1914-1005 G		IgGpa			10 x 05 (test system)
FA 1914-1010 G					10 x 10 (test system)
FA 1914-2005 G					20 x 05 (test system)
FA 1914-12010 G					120 x 10 (test system)
FB 1914-1005 A		IgA			10 x 05 (single slides)
FB 1914-1010 A					10 x 10 (single slides)
FB 1914-2005 A					20 x 05 (single slides)
FB 1914-2010 A					20 x 10 (single slides)
FB 1914-1005 G		IgGpa			10 x 05 (single slides)
FB 1914-1010 G					10 x 10 (single slides)
FB 1914-2005 G					20 x 05 (single slides)
FC 1914-1005 A	**Coeliac Disease Screen (LM) EUROPattern**	IgA	liver	monkey	10 x 05 (test system)
FC 1914-1010 A	**endomysium**				10 x 10 (test system)
FC 1914-2005 A					20 x 05 (test system)
FC 1914-2010 A					20 x 10 (test system)
FC 1914-1005 G		IgGpa			10 x 05 (test system)
FC 1914-1010 G					10 x 10 (test system)
FC 1914-2005 G					20 x 05 (test system)
FC 1914-2010 G					20 x 10 (test system)
FA 1914-1005-1 A	**EUROPLUS**	IgA	2 BIOCHIPs per field:		10 x 05 (test system)
FA 1914-1010-1 A	**endomysium**		liver	monkey	10 x 10 (test system)
FA 1914-2005-1 A	**gliadin (GAF-3X)**		gliadin (GAF-3X) BIOCHIPs		20 x 05 (test system)
FA 1914-1005-1 G		IgGpa			10 x 05 (test system)
FA 1914-1010-1 G					10 x 10 (test system)
FA 1914-2005-1 G					20 x 05 (test system)
FB 1914-1005-1 A		IgA			10 x 05 (single slides)
FB 1914-1010-1 A					10 x 10 (single slides)
FB 1914-2005-1 A					20 x 05 (single slides)
FB 1914-1005-1 G		IgGpa			10 x 05 (single slides)
FB 1914-1010-1 G					10 x 10 (single slides)
FB 1914-2005-1 G					20 x 05 (single slides)

Diagnostics for Indirect Immunofluorescence: Systemic Autoantibodies

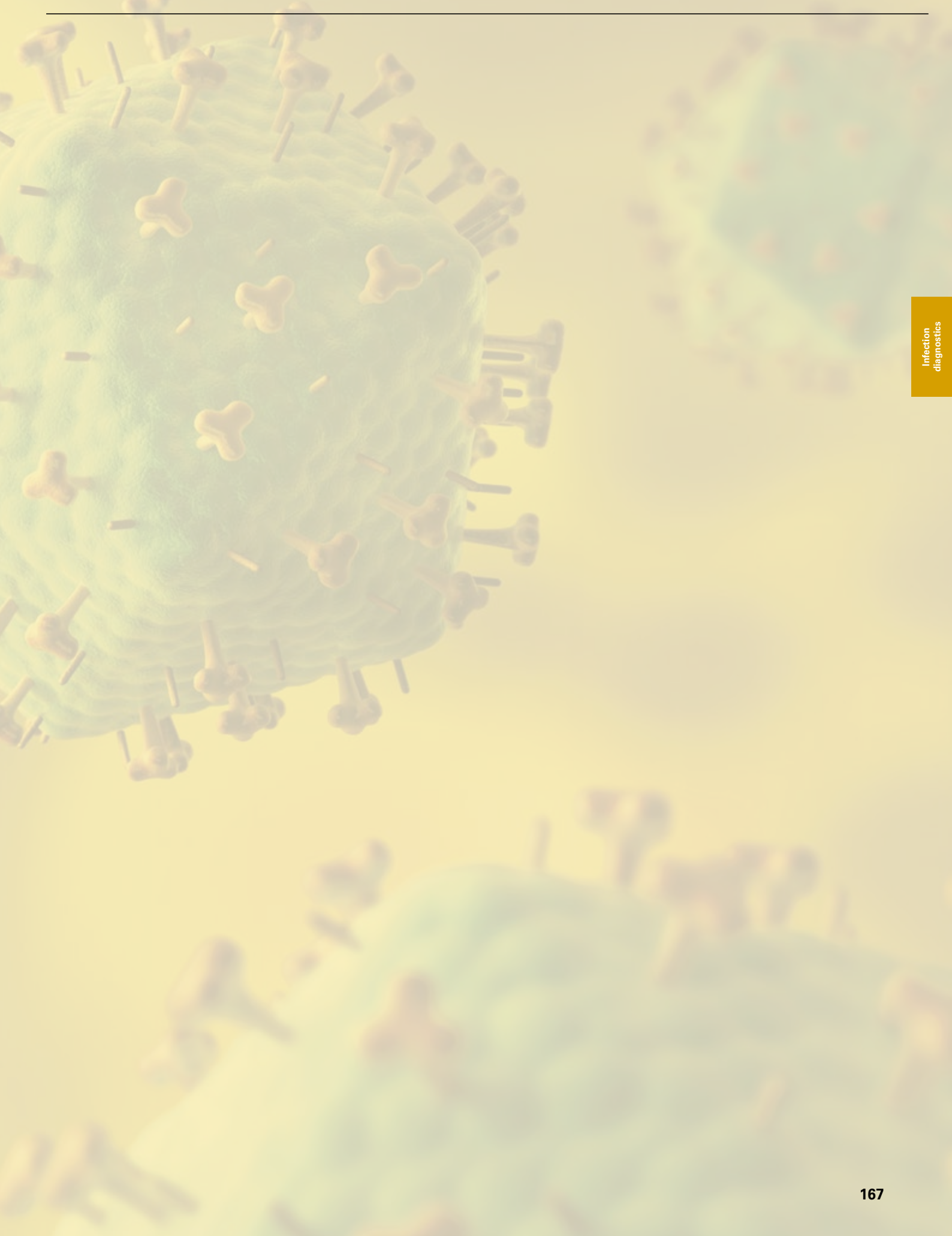
Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FA 1914-1005-2 A	**endomysium**	IgA	liver	monkey	10 x 05 (test system)
FA 1914-1010-2 A	**endomysium**		small intestine	monkey	10 x 10 (test system)
FA 1914-2005-2 A			(2 BIOCHIPs per field)		20 x 05 (test system)
FB 1914-1005-2 A					10 x 05 (single slides)
FB 1914-1010-2 A					10 x 10 (single slides)
FB 1914-2005-2 A					20 x 05 (single slides)
FA 1960-1005	**endothelial cells**	IgG	HUVEC	human	10 x 05 (test system)
FA 1960-1010					10 x 10 (test system)
FB 1960-1005					10 x 05 (single slides)
FB 1960-1010					10 x 10 (single slides)

Diagnostics for Indirect Immunofluorescence: Further Antigens

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FV 2841-1005 A	**Saccharomyces cerevisiae**	IgA	fungal	Saccharomyces	10 x 05 (test system)
FV 2841-1010 A			smear	cerevisiae	10 x 10 (test system)
FV 2841-2005 A					20 x 05 (test system)
FV 2841-1005 G		IgG			10 x 05 (test system)
FV 2841-1010 G					10 x 10 (test system)
FV 2841-2005 G					20 x 05 (test system)
FX 2841-1005					10 x 05 (single slides)
FX 2841-1010					10 x 10 (single slides)
FX 2841-2005					20 x 05 (single slides)

For individual test kit controls please contact your respective sales representative.

Infection diagnostics



Bacteria

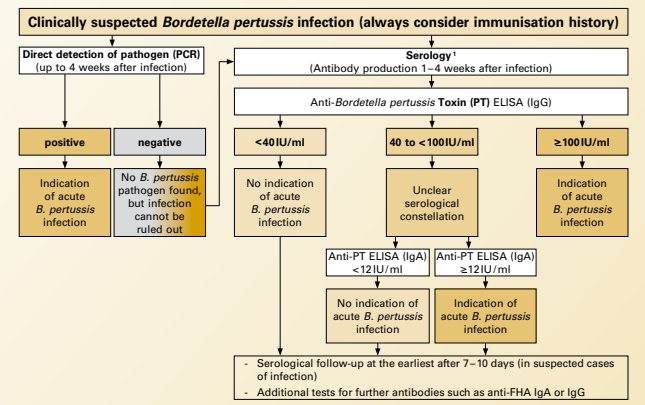
Bordetella · Borrelia · Treponema · Chlamydia

For more information on this subject scan the QR code or enter the Quick Link code q008 at www.euroimmun.com

Bordetella

Clinical information: *Bordetella pertussis* is the causative agent of whooping cough, a disease with 3 stages: 1. Catarrhal stage: mild flu-like symptoms; lasting 1 to 2 weeks; 2. Paroxysmal stage: fits of (staccato-like) coughing spasms with "whooping" sound when inhaling; lasting 2 to 3 weeks; 3. Convalescent stage: slow convalescence, which can take up to several months. Complications such as secondary pneumonia or otitis media are possible, especially in children under the age of 2 years. The disease is known in adults, but is rarely diagnosed, even though coughing adults can infect their surroundings. An infection confers specific immunity, which reduces after several years. The clinical progression of whooping cough depends mainly on the production of the different virulence factors (adhesins and toxins), such as filamentous haemagglutinin (FHA) or pertussis toxin (PT). PT is the only antigen that is exclusively produced by *B. pertussis.* FHA is found in all other Bordetella species and also in other bacteria.

Diagnostics: The method of detection for the diagnosis of Bordetella infection depends on the disease stage. Direct detection of the pathogen (culture, PCR) is particularly useful in the early stages of infection. Since the pathogen is often no longer detectable after around four weeks following infection, serology gains importance as the disease proceeds. Pathogen-specific antibodies of classes IgA and IgG can generally be detected from the paroxysmal stage. For antibody detection, international reference laboratories recommend test systems that are based on individual purified antigens. The use of antigen mixtures of PT and FHA is obsolete. The quantification of antibody titers should be performed in international units (IU/ml) according to the 1st International Standard of the WHO (1st IS NIBSC Code 06/140). The detection of anti-PT IgG is of particular importance for specific diagnosis of *B. pertussis* infection. A concentration of ≥100 IU/ml is considered a clear indicator of *B. pertussis* infection. If the anti-PT IgG concentration is below 40 IU/ml, acute *B. pertussis* infection is unlikely. In cases of unclear serological anti-PT IgG levels of between ≥40 and <100 IU/ml the investigation of further antibodies such as anti-PT IgA can provide additional information. Diagnosis can be confirmed if a significant change in the antibody concentration is found in two consecutive samples. It should be taken into account that a positive antibody result up to one year after vaccination is not a reliable indicator of acute infection.



[1] The clinical symptoms and age of the patient should always be taken into account.

Product overview

Method	Substrate	Application	Order number	Page
ELISA	Highly purified pertussis toxin, PT	IgG ELISA: Most important serological test; specific for *B. pertussis*; exclusion of *B. parapertussis* infections; quantification in IU/ml; interpretation according to 40/100 IU/ml limits	EI 2050-9601 G	197
	Highly purified pertussis toxin, PT	PT IgA; FHA IgA/G ELISA: useful for ambiguous anti-PT IgG titers in the range of ≥40 to <100 IU/ml; quantification in IU/ml	EI 2050-9601 A	197
	Highly purified filamentous haemagglutinin, FHA		EI 2050-9601-3 A/G	197
Blot	PT, FHA, ACT (adenylate cyclase toxin)	Additional qualitative test; antibodies against ACT can indicate a natural infection (ACT is currently not contained in acellular vaccines)	DN 2050-#### A/G	194

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Bacteria

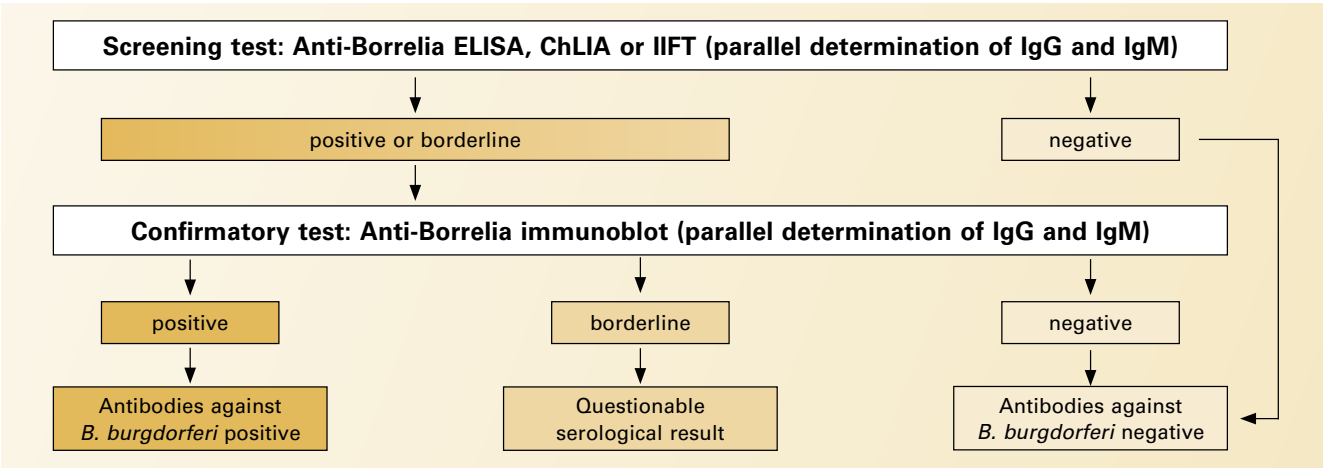
Bordetella · Borrelia · Treponema · Chlamydia

For more information on this subject scan the QR code or enter the Quick Link code q009 at www.euroimmun.com

Borrelia

Clinical information: Borrelia is the causative agent of Lyme borreliosis, a bacterial disease which is transmitted through bites from ticks of the genus Ixodes and is characterised by a variety of clinical symptoms. The most important human pathogenic Borrelia genospecies are *B. afzelii, B. burgdorferi* and *B. garinii.* Lyme borreliosis can manifest itself dermatologically, neurologically or through internal disorders. The radially spreading *erythema migrans* is a characteristic early symptom, which occurs a few days to several weeks after the infection. This is often accompanied by influenza-like general symptoms, such as fever, shivering, headaches and vomiting. The advanced stage of the disease is characterised by neurological (e.g. facial paresis), cardiac (e.g. myocarditis) and rheumatological (e.g. arthritis) manifestations. In chronic Lyme borreliosis involvement of the joints, epidermis (acrodermatitis chronica atrophicans) and central nervous system as well as fatigue are typically found.

Diagnostics: The diagnosis of Lyme disease is based on the patient anamnesis, clinical findings and the detection of antibodies against Borrelia antigens. For the serological diagnosis of anti-Borrelia-specific antibodies, the German Association for Hygiene and Microbiology (DGHM), the Robert Koch Institute and the CDC (Atlanta, Georgia) call for a two-stage strategy. Firstly, a sensitive screening test (ELISA, ChLIA or IIFT) is performed. Sera with a positive or borderline screening result are investigated further using an immunoblot to differentiate between Borrelia-specific and unspecific reactions. Since antibodies against Borrelia are first produced 2 to 6 weeks after infection, serological tests performed in the early stage of Lyme borreliosis can be negative. Early antibiotic treatment may also prevent antibody production. In suspected cases of neuroborreliosis, the presence of intrathecal synthesis of Borrelia-specific antibodies can be investigated by parallel analysis of a CSF/serum sample.



Product overview

Method	Substrate	Application	Order number	Page
ELISA	Whole antigen, detergent extract of *B. burgdorferi, B. garinii* and *B. afzelii* plus recombinant VlsE	IgG ELISA: complete antigen spectrum incl. VlsE, high sensitivity	EI 2132-9601-2 G	197
	Whole antigen, detergent extract of *B. burgdorferi, B. garinii* and *B. afzelii*	IgM ELISA: complete antigen spectrum incl. OspC, high sensitivity	EI 2132-9601 M	197
	Mix of recombinant Borrelia antigens incl. VlsE (IgG) or dimeric OspC advanced (IgM)	Especially selected highly specific antigens, reduced cross reactivity	EI 2132-9601-5 G/M	197
ChLIA	IgG: VlsE of different Borrelia species, DbpA IgM: OspC advanced of different Borrelia species	Chemiluminescence tests for the random access instrument RA Analyzer 10	LI 2132-10010 G/M (control set: LR 2132-20210 G/M)	204
Blot	IgG: p18, p19, p20, p21, p58, OspC, p39, p41, p83, LBb, LBa, VlsE Bg, VlsE Bb, VlsE Ba IgM: OspC Bg, OspC Bb, OspC Ba, p39, p41, VlsE Bb	Line blots with diagnostically relevant Borrelia antigens incl. VlsE and OspC from different Borrelia species; simple evaluation	DN 2131-#### G/M	194
	OspC-adv Bsp, OspC-adv Bg, OspC-adv Bb, OspC-adv Ba, p39, p41, VlsE Bb	IgM line blot with rec. Borrelia antigens incl. dimeric OspC advanced	DN 2131-####-2 M	194
	IgG: p100, p41, p39, p18, OspC, VlsE Bg, VlsE Bb, VlsE Ba IgM: p39, p41, VlsE, OspC Ba, OspC Bb, OspC Bg, OspC Bsp	EUROMicroblot: line blots in microplate format; automatable with ELISA processors	KN 2131-9601 G/M	196

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Bacteria

Bordetella · Borrelia · Treponema · Chlamydia

For more information on this subject scan the QR code or enter the Quick Link code q044 at www.euroimmun.com

Treponema pallidum

Clinical information: *Treponema pallidum* is the pathogenic agent of syphilis (*lues*), a worldwide occurring, sexually or diaplacentally transmitted infection that is divided into 4 stages. 1. Primary stage: The typical primary manifestation is a clearly defined fibrous or crusted erosion at the site of infection which occurs about three weeks after infection. An ulcer or a hardening of the lesion can develop (hard chancre). Local lymph nodes become swollen within a week. 2. Secondary stage: In addition to a generalised swelling of the lymph nodes, 90% of patients show local or generalised skin disorders. Various organ disorders may develop, for example, ketaritis, iritis, hepatitis, vasculitis, and myocardial disorders. Secondary syphilis is followed by a clinically silent stage (*syphilis latens*), which can last for years. 3. Tertiary stage: Typical manifestations are large papules and ulcers on the skin and mucous membranes, as well as organ or visceral syphilis, perivasculitis, cardiovascular syphilis, ostitis and periostitis. 4. Quaternary stage: Severe neurological disorders in the form of neurosyphilis can occur up to 30 years after the initial infection. Diaplacental transmission of the pathogen causes congenital syphilis.

Diagnostics: The diagnosis of syphilis is based on clinical findings according to the disease stage, pathogen detection (from the primary lesion) and serological detection of antibodies against *T. pallidum.* The focus of laboratory diagnostics lies in antibody detection, which has proven successful with a three-staged diagnostic procedure consisting of screening, confirmation and evaluation of the disease activity.

Screening can be performed using Treponema-specific agglutination tests (TPPA, TPHA) and polyvalent enzyme immunoassays. Useful confirmatory tests are ELISA, FTA-abs test and immunoblots. Due to blood vessel inflammation and tissue damage the activity of the infection correlates with the antibody titer against mitochondrial lipids (cardiolipin), which can be detected using the RPR (rapid plasma reagin) test or VDRL (venereal disease research laboratory) test.

Product overview

Method	Substrate	Application	Order number	Page
ELISA	Antigen mixture of *T. pallidum* (p15, p17, p47 and TmpA)	Screening test; sensitive detection of *T. pallidum*-specific Ab (mixed conjugate IgG+IgM); very good correlation with TPHA/TPPA	EI 2111-9601 O	197
	Antigen mixture of *T. pallidum* (p15, p17, p47 and TmpA)	Confirmatory test; separate detection of *T. pallidum*-specific IgG or IgM antibodies	EI 2111-9601 G/M	197
Blot	Electrophoretically separated antigens of *T. pallidum* plus purified cardiolipin	Confirmatory test and information on disease activity by evaluation of the cardiolipin band	DY 2111-#### G/M	195
	T. pallidum-specific antigens (TpN15, TpN17, TmpA, TpN47)	Confirmatory test; separate detection of *T. pallidum*-specific antibodies by line blot	DN 2111-#### G/M	194
IIFT (FTA-Abs)	Bacteral smears of *T. pallidum*	Confirmatory test; unspecific cross-reacting antibodies are removed by pre-adsorption of samples	FI 2111-#### G/M	209

Parameter	Application	Order number	Page
EUROArray STI - 11	PCR-based direct detection of *Chlamydia trachomatis, Neisseria gonorrhoeae, HSV-1, HSV-2, Haemophilus ducreyi, Mycoplasma genitalium, M. hominis, T. pallidum, Trichomonas vaginalis, Ureaplasma parvum* and *Ureaplasma urealyticum*	MN 2830-####	302

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Bacteria

Bordetella · Borrelia · Treponema · Chlamydia

For more information on this subject scan the QR code or enter the Quick Link code q010 at www.euroimmun.com

Chlamydia

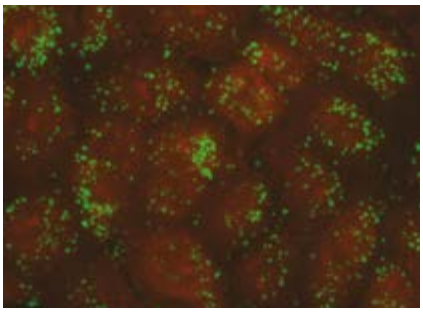
Clinical information: The infectious agents *Chlamydia trachomatis, Chlamydia pneumoniae* and *Chlamydia psittaci* belong to the human pathogenic Chlamydia genus.

Chlamydia trachomatis can cause the following diseases: 1. Trachoma, a tropical eye infection (serotypes A-C); 2. Infections of the urogenital tract (serotypes D-K). Non-gonorrheal urethritis is one of the most common venereal diseases worldwide. Secondary effects of *C. trachomatis* infection can be reactive arthritis, secondary sterility or infertility. 3. Lymphogranuloma venereum (LGV), a rare venereal disease which occurs mainly in tropical areas (serotypes L1-L3).

C. pneumoniae mostly causes infections of the upper respiratory tract and pneumonia. Around half of infections proceed asymptomatically. More than 50 % of adults have been infected with *C. pneumoniae* and exhibit antibodies against the pathogen.

C. psittaci is the causative agent of psittacosis, an infection transmitted to humans by domesticated birds. In addition to flu-like symptoms, a life-threatening pneumonia can develop during the course of the infection, which is often accompanied by further organ manifestations.

Diagnostics: Pathogen detection (e.g. using PCR) is the method of choice for the diagnosis of acute urogenital *C. trachomatis* infection. In *sequelae* associated with *C. trachomatis* such as sterility or reactive arthritis, direct detection of the pathogen is mostly no longer possible. In these cases the investigation of IgA and IgG antibodies is of importance.



Since the diagnosis of *C. pneumoniae* infections in humans by means of symptoms or radiography is not entirely reliable, laboratory diagnostics play a significant role. Detection of the pathogen is useful in the diagnosis of acute infection, but often fails if the infection is older. The analysis of specific Chlamydia antibodies (IgA, IgG, IgM) can help with diagnosing primary infection and reinfection. A significant increase in the IgG antibody level or a seroconversion in two serum samples taken at an interval of several weeks indicates acute infection with *C. pneumoniae.*

Specific antibodies against Chlamydia antigens can be detected using MIF (micro-immunofluorescence) assay, ELISA or immunoblot. Since the three Chlamydia species have the same cell wall proteins (such as lipopolysaccharids, LPS) and are therefore very similar, cross-reactions cannot be ruled out. The inactivation of LPS antigens in the MIF minimises cross reactivity. Type-specific membrane proteins (MOMP: major outer membrane protein) are also suited for species-specific antibody detection.

Product overview

Method	Substrate	Application	Order number	Page
ELISA	Native MOMP (major outer membrane protein) antigen of *C. trachomatis*	Species-specific detection by use of type-specific MOMP antigen	EI 2191-9601 A/G	198
	Cell lysate of *C. pneumoniae*	Genus-specific detection; sensitive detection of anti-*C. pneumoniae* Ab	EI 2192-9601 A/G/M	198
Blot	SDS extract of *C. trachomatis* plus membrane chips with antigens of *C. trachomatis, C. pneumoniae* and *C. psittaci*	Parallel detection of Ab against the three human pathogenic (HP) Chlamydia species *C. trachomatis, pneumoniae* and *psittaci*	DY 2190-1601-1 A/G	196
IFT (MIF)	Elementary bodies of *C. trachomatis, C. pneumoniae, C. psittaci* and control BIOCHIP with non-infected cells	Species-specific detection (cross-reacting LPS Ag are inactivated); simple evaluation due to use of optimised substrates; secure differentiation between unspecific and specific fluorescences by means of control BIOCHIP	FI 2191-####-3 A/G/M FR 2191-####-3 A/G/M (EUROPattern)	209

Parameter	Application	Order number	Page
EUROArray STI - 11	PCR-based direct detection of *C. trachomatis, N. gonorrhoeae, HSV-1, HSV-2, H. ducreyi, M. genitalium, M. hominis, T. pallidum, T. vaginalis, U. parvum* and *U. urealyticum*	MN 2830-####	302

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 205).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q061 at www.euroimmun.com

Viruses

SARS-CoV-2 · EBV · HEV

For more information on this subject scan the QR code or enter the Quick Link code q168 at www.euroimmun.com

SARS-CoV-2

Clinical information: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, previously called 2019-nCoV) belongs to the family of coronaviruses and, like SARS-CoV, is classified in the genus Betacoronavirus. At the end of 2019, it caused an infection wave that rapidly spread worldwide and was declared a pandemic by the WHO in March 2020. Just a few days after the first report about patients with pneumonia of unclear origin, SARS-CoV-2 was identified as the causative pathogen and the associated disease named COVID-19. SARS-CoV-2 is mainly transmitted via aerosols during speaking, breathing, coughing or sneezing or at close contact with an infected person. The incubation period is usually three to seven, maximally 14 days. The symptoms and severity of SARS-CoV-19 infection can vary significantly. The most common symptoms encompass fever, coughing, breathing difficulties and fatigue. Therefore, in the majority of patients, the infection resembles a cold with light fever, with irregular lung infiltrates. Some patients, especially older and chronically ill persons, develop acute respiratory distress syndrome.

Diagnostics: Suitable methods for the diagnosis of SARS-CoV-2 infections are the detection of viral RNA by reverse transcriptase polymerase chain reaction (RT-PCR) or of virus protein by means primarily in sample material from the upper (nasopharyngeal or oropharyngeal swab) or lower respiratory tract (bronchoalveolar lavage fluid, tracheal secretion, sputum, etc.). The PCR allows detection of the pathogen even in subclinical or asymptomatic courses already few days after virus contact and up to 14 after onset of possible symptoms. The determination of antibodies enables confirmation of SARS-CoV-2 infection in patients with typical symptoms and in suspected cases. It also contributes to monitoring and outbreak control. For significant serological results, two patient samples should be investigated, one from the acute phase (week 1 of the illness) and one from the convalescent phase (three to four weeks later).

EUROIMMUN offers the complete range of test systems for COVID-19 diagnostics: RT-PCR for acute diagnostics, serological tests for differentiated detection of antibodies of different immunoglobulin classes and against different SARS-CoV-2 antigens, and an interferon gamma release assay (IGRA) to measure the cellular immune response.

Product overview

Method	Substrate	Application	Order number	Page
ELISA	S1 domain of the spike protein of SARS-CoV-2	Detection of IgA or IgG antibodies against SARS-CoV-2	EI 2606-#### A/G	200
	Modified nucleocapsid protein (NCP) of SARS-CoV-2	Detection of IgG antibodies against SARS-CoV-2	EI 2606-####-2 G	200
	S1 domain of the spike protein of SARS-CoV-2	Quantitative determination of IgG antibodies against SARS-CoV-2	EI 2606-9601-10 G	200
	S1 domain of the spike protein of SARS-CoV-2 and human ACE2 (liquid phase)	Surrogate virus neutralisation test (sVNT) in ELISA format	EI 2606-9601-4	200
IGRA	Based on the S1 domain of the spike protein of SARS-CoV-2	Set of SARS-CoV-2 stimulation tubes (to be combined with EQ 6841-9601)	ET 2606-3003	207
	Anti-interferon gamma antibody	Determination of the cellular immune response to SARS-CoV-2	EQ 6841-9601	207
Blot	Recombinant SARS-CoV-2 antigens: S1, S2, NP	Line blot for separate determination of IgG antibodies against antigens of SARS-CoV-2	DN 2606-####-1 G	195

Parameter	Sample material	Application	Order number	Page
EURORealTime SARS-CoV-2	RNA from throat swabs	Real-time PCR-based direct detection of SARS-CoV-2	MP 2606-####	303
EURORealTime SARS-CoV-2/ Influenza A/B	RNA from throat swabs	Real-time PCR-based direct detection of SARS-CoV-2 and influenza viruses A and B	MP 2606-####-20	303

Infection diagnostics

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q168 at www.euroimmun.com

Viruses

SARS-CoV-2 · EBV · HEV

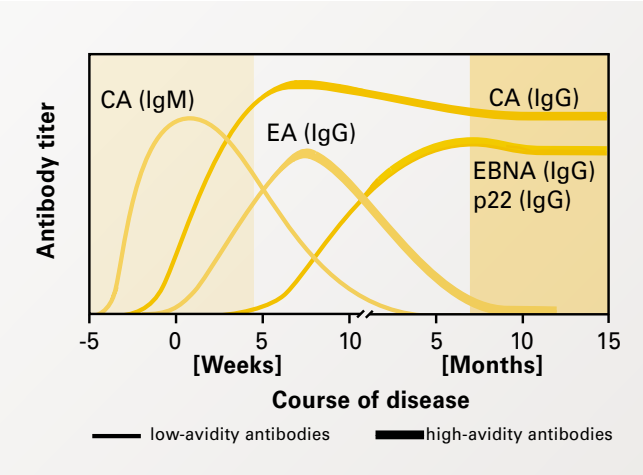
For more information on this subject scan the QR code or enter the Quick Link code q013 at www.euroimmun.com

Epstein-Barr virus

Clinical information: Epstein-Barr virus (EBV) is the causative agent of infectious mononucleosis (glandular fever), a febrile disease usually accompanied by pharyngitis and lymphadenopathy, frequently by hepatosplenomegaly and more rarely by exanthema. Recent research results have also shown a connection between EBV infection and the pathogenesis of Burkitt's lymphoma and nasopharyngeal carcinoma (NPC). In pregnancy, EBV can cause infection of the placenta, leading to damage to the foetal heart, eyes and liver. In children, accompanying infections of the kidney have been observed with symptoms from microscopic haematuria to acute kidney failure.

Diagnostics: Infectious mononucleosis must be differentiated diagnostically from cytomegaly and toxoplasmosis and, in the case of atypical progress, also from infections with HIV and other pathogens.

The main goal of routine diagnostics is to differentiate between the stages of an EBV infection, for example primary or past infection. Infections are in most cases confirmed by serological detection of antibodies. Determination of the viral load by PCR is useful in immunosuppressed patients and in chronic active EBV infections.



During the course of an EBV infection the antibodies appear successively. In the early phase of the disease, IgM and IgG antibodies against EBV capsid antigen (EBV-CA) are detectable. A positive anti-EBV-CA (IgM) result is the classic marker of an acute infection. IgG antibodies against the early antigen (EA) occur somewhat later in the acute phase and decline to an undetectable concentration after three to six months. In contrast, the CA IgG antibody level persists lifelong. Around six to eight weeks after an infection, antibodies against Epstein-Barr nuclear antigen (EBNA) are produced. Their occurrence thus indicates a past infection.

Serologically difficult constellations, such as persistent anti-EBV-CA IgM antibodies, the absence of specific anti-EBV-CA IgM antibodies in acute infections or secondary loss of anti-EBNA IgG antibodies, can be clarified by measuring the avidity of anti-EBV-CA IgG antibodies and/or by the detection of further late-phase markers by immunoblot.

Product overview

Method	Substrate	Application	Order number	Page
ELISA	Mixture of native EBV capsid antigens (EBV-CA)	IgG/IgA ELISA: complete Ag spectrum ensures high sensitivity and high specificity; avidity determination: exclusion of acute infection	EI 2791-9601 A/G EI 2791-9601-1 G	202 202
	Native EBV-CA gp125	IgM ELISA: optimal for the diagnosis of acute infection	EI 2791-9601 M	202
	Recombinant EBNA-1 antigen	High specificity for the late stage of the disease	EI 2793-9601 G	202
	Recombinant EBV early antigen D (EBV-EA-D)	Highly specific recombinant antigen	EI 2795-9601 A/G/M	202
ChLIA	Recombinant EBV capsid antigens (p18, p23, gp125)	IgG ChLIA: antigen spectrum ensures high sensitivity and specificity	LI 2791-10010 G (control set: LR 2791-20210 G	204
	Recombinant EBV capsid antigens (p18, gp125)	IgM ChLIA: optimal for the diagnosis of acute infections	LI 2791-10010 M (control set: LR 2791-20210 M)	204
	Recombinant EBNA-1 antigen	IgG ChLIA: high specificity for the late phase of the disease	LI 2793-10010 G (control set: LR 2793-20210 G)	204
Blot	EBV Profile 2: separate EBV-CA gp125, EBV-CA p19, EBNA-1, p22, EA-D	Line blot with all relevant EBV antigens for the diagnosis and differentiation of early-stage and late-stage EBV infections	DN 2790-####-2 G/M	195
IIFT	BIOCHIP sequence: EBV-CA (avidity test, IgG, IgM), EBV-EA, EBNA; infected cells	IIFT is the gold standard for EBV diagnostics; BIOCHIP sequence contains all relevant antigens; avidity determination: exclusion of acute infection	FI 2799-####-1 X	229
	EUROPLUS sequence: EBV-CA (avidity test, IgG, IgM, gp125-Ag, p19-Ag), EBV-EA, EBNA; infected cells		FI 2799-####-21 X	229

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 205).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g066 at www.euroimmun.com

Viruses

SARS-CoV-2 · EBV · HEV

For more information on this subject scan the QR code or enter the Quick Link code q026 at www.euroimmun.com

Hepatitis E virus

Clinical information: Hepatitis E virus (HEV) is the causative agent of hepatitis E, a worldwide distributed infectious disease. HEV is an uncoated RNA virus of the *Hepeviridae* family. Four human pathogenic genotypes of HEV have so far been described (1–4). While genotypes 1 and 2 are exclusively human pathogenic, genotypes 3 and 4 are found in humans and animals. The most common ways of infection include faecal-oral transmission through consumption of contaminated drinking water or food (endemic areas with low hygienic standards) and zoonotic transmission by the consumption of insufficiently cooked meat from infected animals, e.g. domestic or wild pigs (industrialised countries). Virus-contaminated blood products are also discussed as a potential source of infection for humans.

Infections with HEV usually proceed asymptomatically or mildy with unspecific symptoms such as tiredness, loss of appetite, nausea, vomiting, headache and muscle and joint pains. If liver inflammation occurs, it is often self-limiting and heals without any complications. In rare cases hepatitis E can have a fulminant course with acute liver failure. Pregnant women with a history of severe disease courses are particularly at risk. Up to 20% of HEV infections are fatal for the expectant mother (lethality in hepatitis E infections in the total population: 0.5 to 4%).

Diagnostics: Since the clinical picture of hepatitis E resembles hepatitis A as well as other hepatitides, laboratory diagnostic methods are of major importance for diagnosis. Besides PCR detection of viral RNA in blood or stool (recommended method for very early phase of infection) the serological determination of antibodies of class IgA/IgG/IgM against hepatitis E virus is the most important tool for confirming HEV infections. Pathogen-specific antibodies are often detectable at or shortly after the onset of clinical symptoms. A positive IgA and/or IgM result and a significant IgG titer increase in a serum pair (taken at an interval of 8 to 14 days) indicate an acute infection. Anti-HEV IgA and IgM titers generally decrease rapidly after infection, while anti-HEV IgG titer often persist for more than 10 years.

Product overview

Method	Substrate	Application	Order number	Page
ELISA	Recombinant target antigens of HEV genotypes 1 and 3	IgG ELISA; test for the quantitative determination of IgG antibodies against HEV	EI 2525-9601 G	199
		IgM ELISA: detection of HEV-specific antibodies of class IgM with high specificity and sensitivity	EI 2525-9601 M	199
		Screening ELISA for parallel determination of IgA, IgG and IgM antibodies against HEV	EI 2525-9601 P	199
Blot	Recombinant ORF2 antigens of the HEV genotypes 1, 2, 3 and 4	Line blot for determination of IgA, IgG or IgM anti-bodies against HEV	DN 2525-#### A/G/M	194

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g070 at www.euroimmun.com

Funguses

Aspergillus

For more information on this subject scan the QR code or enter the Quick Link code q157 at www.euroimmun.com

Aspergillus

Clinical information: Moulds of the genus Aspergillus are present in the air and soil, but also in biological waste and contaminated foods. Within the genus, which encompasses more than 300 species, some may lead to infections in humans, given the respective predisposition. Here, *Aspergillus fumigatus* plays an especially important role. Infections with other species such as *A. flavus*, *A. niger*, *A. terreus* were also described. Transmission occurs via inhalation of spores, of which humans inhale up to several hundred every day. In patients with an intact immune system, this intake does not lead to an infection since the spores can be controlled by the cellular immune system. In the beginning, a permanent load may cause hypersensitivity or allergic reactions (allergic bronchopulmonary aspergillosis, ABPA). With existing lung damage, e.g. destructed lung tissue due to tuberculosis, an aspergilloma, that is, a tumour-like growth may develop.

In patients with weakened immune system or immunosuppression, infections often lead to invasive aspergillosis. Initially, this manifests mainly in the respiratory tracts and the sinuses, but may also disseminate haematogenically and consequently affect organs such as the brain, liver and kidneys. This is usually accompanied by unspecific symptoms such as high fever and inflammation of the affected organs and may affect the central nervous system. Especially haemato-oncological and bone-marrow-transplanted patients are mostly affected. However, also other immune deficiencies, e.g. due to HIV infections or treatments with glucocorticoids, may favour an infection. In the last years, an increasing number of nosocomial infections were observed in patients in intensive care units. According to studies, up to 20 % of the group of bone-marrow-transplanted patients were affected by an invasive fungal infection. Here, aspergilloses and candidiases are the most relevant infections. Depending on the manifestation, 50 to 90 % of invasive aspergilloses are fatal.

Diagnostics: The laboratory diagnostic detection is based on cultivation or microscopy. However, cultivation is only successful in 50 % of cases. The detection of Aspergillus antigen from body fluids is nowadays an established additional method. This enables sensitive Aspergillus detection already at an early stage. Due to this reason, detection of Aspergillus antigens was included in the guidelines of the European Organization for Research and Treatment of Cancer (EORTC) and the National Institute of Allergy and Infectious Diseases Mycoses Study Group (MSD) as a criterion of a “probable” invasive aspergillosis. Established test systems are based on the detection of polysaccharides from the cell wall.

Product overview

Method	Substrate	Application	Order number	Page
Antigen ELISA	Antibodies against a glycosylated cell wall protein of Aspergillus (extracellular part)	Sensitive detection for the support to the diagnosis of acute aspergilloses	EQ 6911-9601	261
IIFT	*Candida albicans* smears	Separate detection of different antibodies classes against *Candida albicans*	FI 2861-#### A, G or M	228

Parameter	Application	Order number	Page
EUROArray Dermatomycosis	PCR-based molecular genetic direct detection of up to 50 dermatophytes and clear species identification of up to 23 dermatophytes and 6 yeasts/moulds	MN 2850-####	313

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Special infection diagnostics

CSF diagnostics · TORCH · Tropical infections

For more information on this subject scan the QR code or enter the Quick Link code q031 at www.euroimmun.com

CSF diagnostics

Clinical information: The investigation of cerebrospinal fluid (CSF) is diagnostically decisive in acute or chronic inflammatory processes of the central nervous system (CNS). Acute CNS infections manifest themselves as meningitis (inflammation of the meninges), meningoencephalitis (inflammation of the brain or meninges) or encephalitis (inflammation of the brain). These infections can be caused by bacteria (e.g. Borrelia, *Treponema pallidum*), viruses (e.g. HSV, VZV, measles virus, TBE virus, EBV) or parasites (e.g. *Toxoplasma gondii*). CSF analysis also plays a major role in the differential diagnosis of non-infectious diseases such as multiple sclerosis (MS). The detection of intrathecal synthesis of antibodies against measles, rubella and/or varicella zoster viruses (MRZ reaction) is a specific indicator of MS.

Diagnostics: When determining an infection of the CNS it is necessary to differentiate between intrathecally produced antibodies and antibodies which have migrated from the blood into CSF. This is done by measuring the concentrations of pathogen-specific antibodies, corresponding immunoglobulin classes (total IgG, IgM) and albumin in both the CSF and serum of the patient. If an infection of the central nervous system is present, pathogen-specific antibodies accumulate in the CSF. If, however, the infection is not localised in the the brain, the distribution of pathogen-specific antibodies in CSF and serum is the same as that of total IgG. The intrathecal pathogen-specific antibody production is defined by the relative CSF/serum quotient $CSQ_{rel.}$ (synonym: antibody specificity index, AI). The quotient is calculated from the amount of specific IgG antibodies in total CSF IgG/IgM in proportion to the amount of pathogen-specific antibodies in total serum IgG/IgM. A $CSQ_{rel.} > 1.5$ indicates intrathecal synthesis of pathogen-specific antibodies.

In addition to the determination of specific antibodies, also the investigation of chemokine CXCL13 in CSF is useful for the diagnosis of neuroborreliosis. In patients with acute neuroborreliosis, in early stages of the disease, high concentrations of CXCL13 are frequently observed, often even before antibodies against Borrelia are detectable. CXCL13 determination can help to close the gap between infection and positive antibody test and to diagnose neuroborreliosis at an earlier stage. Moreover, CXCL13 used as activity marker helps to differentiate between acute and past neuroborreliosis. CXCL13 is also suitable as a marker for the disease course after treatment. Its concentration in CSF decreases with successful therapy. It needs to be taken into account that increased CXCL13 values can also be observed in other diseases, in particular in CNS lymphoma, HIV infections and neurolues.

Evaluation software: EUROIMMUN CSF software is a program for automatic calculation of CSF/serum quotients. For further information see page 84.

Product overview

Method	Substrate	Application	Order number	Page
ELISA	Borrelia	Efficient standardised automation with uniform dilution and incubation conditions; 4-/6-point standard curve or recalibration with 1 calibrator (stored standard curve) for highest accuracy; very good reproducibility of results for the whole measurement range; excellent agreement with quality assessment results (INSTAND e.V.); automated calculation of results (EUROIMMUN CSF software); CSF/serum control pairs available for all ELISAs	EI 2132-9601-L G/M	197
	Measles virus		EI 2610-9601-L G	200
	Rubella virus		EI 2590-9601-L G	199
	Varicella zoster virus (VZV)		EI 2650-9601-L G	200
	Herpes simplex virus (HSV-1/2)		EI 2531-9601-1 L G	199
	Cytomegalovirus (CMV)		EI 2570-9601-L G	199
	Mumps virus		EI 2630-9601-L G	200
	Tick-borne encephalitis (TBE)		EI 2661-9601-L G/M	201
	Epstein-Barr virus (EBV-CA)		EI 2791-9601-L G	202
	Treponema pallidum		EI 2111-9601-L G	197
	Toxoplasma gondii		EI 2410-9601-L G	198
Blot	Recombinant and native Borrelia antigens	Additional test for differentiated detection of antibodies in CSF and serum	DN 2131-#### G/M DN 2131-####-2 M	194
Antigen ELISA	Anti-CXCL13 antibody	Activity and therapy marker in neuroborreliosis	EQ 6811-9601-L	207

Parameter	Application	Order number	Page
EURORealTime HSV-1/2	PCR-based direct detection of HSV-1 and -2; quantification of virus DNA; differentiation between both types	MP 2530-####	303

Infection diagnostics

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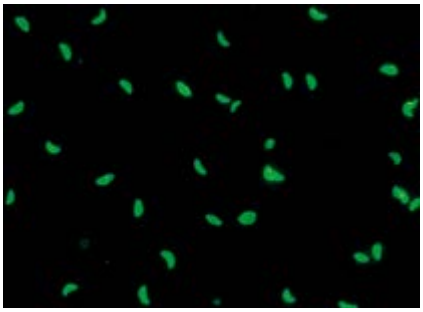
Special infection diagnostics

CSF diagnostics · TORCH · Tropical infections

For more information on this subject scan the QR code or enter the Quick Link code q043 at www.euroimmun.com

TORCH

Clinical information: The term TORCH encompasses all infectious agents that can be transferred from mother to child in the uterus, during birth or after birth via vertical infection. It includes *Toxoplasma gondii*, rubella virus, cytomegalovirus (CMV), herpes simplex virus (HSV) and other pathogens such as *Chlamydia trachomatis*, parvovirus B19, *Treponema pallidum* and varicella zoster virus (VZV). Primary infections during pregnancy are especially feared, since they are associated with an increased risk of damage to the child.



Diagnostics: Nowadays, analysis of antibodies against TORCH parameters is an essential part of pre-, peri- and postnatal care. The tests allow the immune status of the mother to be established and the risks to an existing pregnancy assessed. The diagnostic procedure depends on the patient history, special risk factors and national regulations. TORCH tests are generally performed during the first trimester of pregnancy, but they can also be carried out on the newborn if an infection is suspected. The initial investigation of antibodies against TORCH pathogens is aimed at determining the immune status of the mother in order to be able to differentiate between acute primary and past infections or reactivations during the course of pregnancy. If diagnosed early, TORCH infections can in part be effectively treated, reducing the risk of birth defects or loss of the foetus. If there is no immunity against one of the TORCH pathogens, it is very important for the mother to avoid contact with known infection sources during pregnancy.

Product overview

Methode	Substrate	Application	Order number	Page
ELISA	Native whole antigen of *Toxoplasma gondii*	Complete ag spectrum; for sensitive determination of spec. IgG, IgM or IgAGM; avidity ELISA: exclusion of primary infections	EI 2410-9601 P EI 2410-9601 G/M EI 2410-9601-1 G	198 198 198
	Purified native antigens (IgG) and glycoproteins (IgM) of rubella virus	IgG ELISA: complete ag spectrum; IgM ELISA: highest specificity through the use of viral glycoproteins; Avidity ELISA: exclusion of primary infections	EI 2590-9601 G EI 2590-9601-1 G EI 2590-9601-2 M	199 199 199
	Purified native antigens of cytomegalovirus	IgG, IgM ELISA: complete antigen spectrum; Avidity ELISA: exclusion of primary infections	EI 2570-9601 G/M EI 2570-9601-1 G	199 199
	Recombinant p52 (IgM) or glycoprotein B antigen (IgG) of cytomegalovirus	ELISA with reduced cross-reactivity (IgM) or for excluding primary infections (IgG)	EI 2570-9601-2 M EI 2570-9601-3 G	199
	Mixture of HSV-1 and -2 whole antigens	Determination of IgG or IgM antibodies against both HSV species	EI 2531-9601-1 G/M	199
	Glycoprotein C1 of HSV-1 or G2 of HSV-2	Type-specific IgG ELISA for HSV-1 and HSV-2	EI 2531-9601-2 G EI 2532-9601-2 G	199 199
ChLIA	Glycoprotein G1 of HSV-1 or G2 of HSV-2, resp.	ChLIA for type-specific determination of IgG antibodies against HSV-1 or HSV-2	LI 2531-10010 G LI 2532-10010 G (Control sets: LR 2531-20210 G LR 2532-20210 G)	204 204 204 204
Blot	Separate bands with native or recombinant antigens from different TORCH pathogens	Multiplex detection of IgG or IgM ab against up to 10 different TORCH antigens	DN 2410-1601-4 G/M DN 2410-####-11 G	194

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 205).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q100 at www.euroimmun.com

Special infection diagnostics

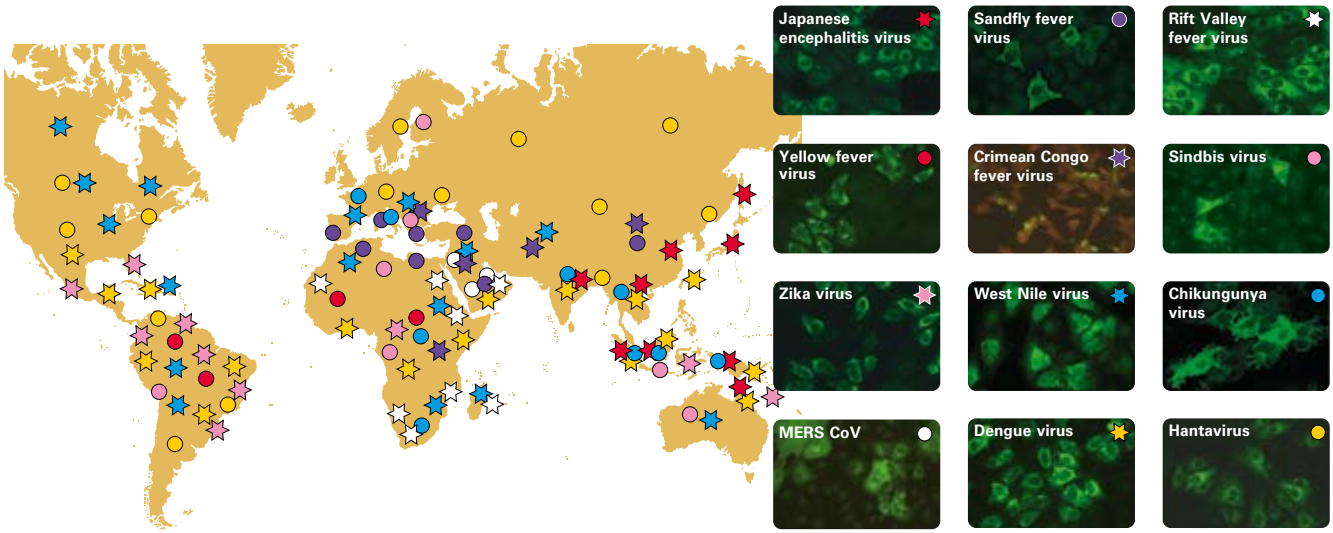
CSF diagnostics · TORCH · Tropical infections

For more information on this subject scan the QR code or enter the Quick Link code q045 at www.euroimmun.com

Tropical infections and emerging diseases

Clinical information: The term tropical diseases encompasses a range of infectious diseases, which – as the name suggests – originate in tropical regions. However, they can also occur in other regions, for example, through transmission by returning travellers. Emerging diseases are infections that are new in a population, or are already known but have increased rapidly in incidence or regional distribution. In recent years, large epidemics have mostly been caused by mosquito-borne viruses such as Zika, dengue and chikungunya viruses. These viruses generally cause febrile diseases with unspecific flu-like symptoms. In the further course of disease, severe complications such as encephalitis or haemorrhaging can occur. Moreover, neurological abnormalities in newborns are associated with Zika virus infection. In addition to viral diseases, parasitic infections, for example with Echinococcus, Plasmodium, Strongyloides, Trypanosoma or Schistosoma, also play a role in humans. The symptoms of a parasitic infection are extremely variable and sometimes occur after months or years, as is the case with echinococcosis.

Diagnostics: The diagnosis of tropical infections is a particular challenge. Over the past years it has been observed that many new viruses and other pathogens have spread worldwide, introducing unknown diseases into previously unaffected regions. For these parameters there are often no commercial diagnostic test systems available. Antibody analysis is useful for testing travellers after trips to endemic areas and for screening large population groups. EUROIMMUN offers a wide range of products for the determination of specific antibodies against many pathogens.



Product overview

Method	Substrate	Application	Order number	Page
ELISA	Recombinant nonstructural protein (NS1) of Zika virus	Hiighly specific detection of Zika virus infection	EI 2668-9601 A/ AM/G/M	201
	Preparation of dengue virus particles and rec. glycoprotein E of types 1-4	Monospecific detection of anti-dengue virus antibodies	EI 266a-9601-1 G/M	201
	Monoclonal mouse anti-dengue virus NS1 antibody	Early marker for acute dengue infections	EQ 266a-9601-1	207
	Recombinant viral structure protein from chikungunya virus	Highly specific test for the diagnosis of chikungunya fever	EI 293a-9601 G/M	202
	Purified native *Echinococcus multilocaris* vesicle fluid (EmVF)	Screening test for detection of alveolar and cystic echinococcosis	EI 2320-9601-1G	198
	Recombinant target antigens from all 5 human pathogenic Plasmodium species (*P. falciparum, P. vivax, P. malariae, P. ovale* and *P. knowlesi*)	Identification of latent, asymptomatic and chronic Plasmodium infections	EI 2260-9601 G	198
Blot	Combination of whole antigen extract (*Echinococcus multilocaris* vesicle fluid, EmVF) and specific single antigens	Differentiation between alveolar and cystic echinococcosis	DY 2321-1601-1 G	196
IFT	Flavivirus Mosaics: Zika virus, TBE virus, WNV, JEV, yellow fever virus, dengue virus types 1-4	Serological diagnosis of flavivirus infections; differential diagnostics	FI 2661-####-1 G/M FI 2661-####-2 G/M	211 211
	Arbovirus Fever Mosaics: Zika virus, chikungunya virus, dengue virus, JEV	For differential diagnosis of arbovirus infections, in particular Zika, dengue and chikungunya infections	FI 293a-####-1 G/M FI 2668-####-1 G/M FR 2668-####-1 G/M	214 211 211

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q102 at www.euroimmun.com

Products for infection diagnostics

Format

- 1601: 16 single test strips
- 1208: 12 microplate strips with 8 wells each
- 9601: 96 individual break-apart wells (12 microplate strips, 8 wells each)
- 1003: 10 slides with 3 fields each
- 1005: 10 slides with 5 fields each
- 2005: 20 slides with 5 fields each
- 1010: 10 slides with 10 fields each
- 1050: 10 slides with 50 fields each
- 1001: 10 slides to be incubated with 1 patient serum each
- 1002: 10 slides to be incubated with 2 patient sera each

EI 2132 - 9601 -2 G

Product code

Immunoglobulin class

- A: IgA
- G: IgG
- M: IgM
- O: IgGM
- P: Polyvalent (IgAGM)
- X: Low-avid ab of class IgG
- H: High-avid ab of class IgG

Product classification

- CL: Control for EUROLINE (infectious serology) ..... page 192
- CW: Control for Westernblot/EUROLINE-WB (infectious serology) ..... page 193
- DN: Test system EUROLINE (infectious serology) ..... page 194
- DY: Test system Westernblot/EUROLINE-WB (infectious serology) ..... page 195
- EI: Test system microplate ELISA (infectious serology) ..... page 197
- LI: Test system chemiluminescence test (infectious serology) ..... page 204
- LR: Control set chemiluminescence test ..... page 204
- Test system ids chemiluminescence test (infectious serology) ..... page 205
- Control set ids chemiluminescence test (infectious serology) ..... page 206
- EQ: Test system microplate ELISA (infectious diseases, antigen determination) ..... page 207
- ET: T-cell stimulation tube set (infectious diseases) ..... page 207
- CK: ELISA control (infectious CSF diagostics) ..... page 208
- FI: Test system indirect immunofluorescence (infectious serology) ..... page 209
- FK: Single slides indirect immunofluorescence (infectious serology) ..... page 209
- FR: Test system for indirect immunfluorescence (EUROPattern): Infectious serology ..... page 209
- FS: Single slides for indirect immunfluorescence (EUROPattern): Infectious serology ..... page 209

For product orders the amount, product code and test name are required. **Test kits** comprise all reagents needed to perform the serological investigation. For diagnostics in indirect immunofluorescence, for example, these include slides, FITC-labelled antibodies against human immunoglobulin, positive and negative control sera (not available for some products) as well as embedding medium, cover glasses, sachets of PBS and Tween 20. EUROSORB for the determination if IgM class antibodies and sample buffer 3 (for anti-Borrelia IIFT only) are not included in the immunofluorescence test systems.

Substrates consisting of cell cultures and tissues which do not appear in this catalogue can be made to specification. In addition, BIOCHIP mosaics can be produced according to individual requirements. Apart from the customary package sizes and slide formats, special sizes are available as well. Quotations can be provided upon request.

Controls for EUROLINE: Infectious Serology

Order No.	Control (Ready for use)	Ig Class	Format
CW2000-0001 ZA	negative control for infectious serology blot systems (IgA)	IgA	0.1 ml
CW2000-0001 ZG	negative control for infectious serology blot systems (IgG)	IgG	0.1 ml
CW2000-0001 ZM	negative control for infectious serology blot systems (IgM)	IgM	0.1 ml
CL 2050-0107 G	positive control serum: IgG, human, 50x concentrated for Bordetella pertussis	IgG	0.1 ml for EUROBlotOne
CL 2111-0107 G	positive control serum: IgG, human, 50x concentrated for Treponema pallidum	IgG	0.1 ml for EUROBlotOne
CL 2111-0107 M	positive control serum: IgM, human, 50x concentrated for Treponema pallidum	IgM	0.1 ml for EUROBlotOne
CL 2131-0107 G	positive control serum: IgG, human, 50x concentrated for Borrelia	IgG	0.1 ml for EUROBlotOne
CL 2131-0107 M	positive control serum: IgM, human, 50x concentrated for Borrelia	IgM	0.1 ml for EUROBlotOne
CL 2410-0107-4 G	positive control serum: IgG, human, 50x concentrated for TO.R.C.H. Profile	IgG	0.1 ml for EUROBlotOne
CL 2410-0107-4 M	positive control serum: IgM, human, 50x concentrated for TO.R.C.H. Profile	IgM	0.1 ml for EUROBlotOne
CL 2790-0107-12 G	positive control serum: IgG, human, 50x concentrated for EBV-Profil 2 G	IgG	0.1 ml for EUROBlotOne
CL 2790-0107-12 M	positive control serum: IgM, human, 50x concentrated for EBV-Profil 2 M	IgM	0.1 ml for EUROBlotOne

Controls for Westernblot/EUROLINE-WB: Infectious Serology

Order No.	Control (Ready for use)	Ig Class	Format
CW2000-0001 ZA	negative control for infectious serology blot systems (IgA)	IgA	0.1 ml
CW2000-0001 ZG	negative control for infectious serology blot systems (IgG)	IgG	0.1 ml
CW2000-0001 ZM	negative control for infectious serology blot systems (IgM)	IgM	0.1 ml
CW2080-5001 A	antibodies against Helicobacter pylori IgA positive control	IgA	0.1 ml
CW2080-5001 G	antibodies against Helicobacter pylori IgG positive control	IgG	0.1 ml
CW2111-5001 G	antibodies against Treponema pallidum IgG positive control	IgG	0.1 ml
CW2111-5001 M	antibodies against Treponema pallidum IgM positive control	IgM	0.1 ml
CW2131-5001 G	antibodies against Borrelia afzelii IgG positive control (Westernblot/EUROLINE-WB)	IgG	0.1 ml
CW2131-5001 M	antibodies against Borrelia afzelii IgM positive control (Westernblot/EUROLINE-WB)	IgM	0.1 ml
CW2132-5001 G	antibodies against Borrelia burgdorferi IgG positive control	IgG	0.1 ml
CW2132-5001 M	antibodies against Borrelia burgdorferi IgM positive control	IgM	0.1 ml
CW2134-5001 G	antibodies against Borrelia garinii IgG positive control	IgG	0.1 ml
CW2134-5001 M	antibodies against Borrelia garinii IgM positive control	IgM	0.1 ml
CW2173-5001 A	antibodies against Yersinia enterocolitica IgA positive control (for diagnosing various forms of arthritis)	IgA	0.1 ml
CW2173-5001 G	antibodies against Yersinia enterocolitica IgG positive control (for diagnosing various forms of arthritis)	IgG	0.1 ml
CW2321-5001 G	antibodies against Echinococcus IgG positive control	IgG	0.1 ml
CW2531-5001 G	antibodies against Herpes simplex virus (HSV) IgG positive control	IgG	0.1 ml
CW2790-5001 G	antibodies against Epstein-Barr virus (EBV) IgG positive control	IgG	0.1 ml
CW2790-5001 M	antibodies against Epstein-Barr virus (EBV) IgM positive control	IgM	0.1 ml

EUROLINE for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DL 0160-1601 G	EUROLINE validation	IgG	EUROLINE	16 strips
DN 2050-1601 A DN 2050-24001 A	Bordetella pertussis (FHA, PT, ACT separately)	IgA	EUROLINE	16 strips 240 strips
DN 2050-1601 G DN 2050-24001 G	Bordetella pertussis (FHA, PT, ACT separately)	IgG	EUROLINE	16 strips 240 strips
DN 2111-1601 G DN 2111-6401 G	Treponema pallidum (TpN15, TpN17, TmpA, TpN47 separately)	IgG	EUROLINE	16 strips 64 strips
DN 2111-1601 M DN 2111-6401 M	Treponema pallidum (TpN15, TpN17, TmpA, TpN47 separately)	IgM	EUROLINE	16 strips 64 strips
DN 2131-3201 G DN 2131-0510 G DN 2131-24001 G	EUROLINE Borrelia-RN-AT (p18, p19, p20, p21, p58, OspC (p25), p39, p83, LBb, LBa, VlsE Bg, VlsE Bb, VlsE Ba separately)	IgG	EUROLINE	32 strips 50 strips Immunoblot-PreQ 240 strips
DN 2131-3201 M DN 2131-0510 M DN 2131-24001 M	EUROLINE Borrelia-RN-AT (OspC Bg native, OspC Bb native, OspC Ba native, p39, VlsE Bb separately)	IgM	EUROLINE	32 strips 50 strips Immunoblot-PreQ 240 strips
DN 2131-3201-2 M DN 2131-0510-2 M DN 2131-24001-2 M	EUROLINE Borrelia-RN-AT-adv (OspC-adv Bsp, OspC-adv Bg, OspC-adv Bb, OspC-adv Ba, p39, VlsE Bb separately)	IgM	EUROLINE	32 strips 50 strips Immunoblot-PreQ 240 strips
DN 2173-1601 A DN 2173-6401 A	Yersinia enterocolitica Detection of antibodies against virulence factors of the Yersinia enterocolitica pathogen in human serum (for diagnosing various forms of arthritis).	IgA	EUROLINE	16 strips 64 strips
DN 2173-1601 G DN 2173-6401 G	Yersinia enterocolitica Detection of antibodies against virulence factors of the Yersinia enterocolitica pathogen in human serum (for diagnosing various forms of arthritis).	IgG	EUROLINE	16 strips 64 strips
DN 2410-1601-4 G DN 2410-6401-4 G	"TO.R.C.H. Profile" (Toxoplasma gondii, Rubella virus, CMV, HSV-1, HSV-2 separately)	IgG	EUROLINE	16 strips 64 strips
DN 2410-1601-4 M DN 2410-6401-4 M	"TO.R.C.H. Profile" (Toxoplasma gondii, ROP1, Rubella virus, CMV, HSV-1, HSV-2 separately)	IgM	EUROLINE	16 strips 64 strips
DN 2410-1601-11 G DN 2410-6401-11 G	"TO.R.C.H. 10" (Toxoplasma gondii, Rubella virus, CMV, HSV-1, HSV-2, Bordetella pertussis, Chlamydia trachomatis, Parvovirus B19, Treponema pallidum, VZV separately)	IgG	EUROLINE	16 strips 64 strips
DN 2525-1601 A DN 2525-0510 A DN 2525-6401 A	EUROLINE Hepatitis E Virus (separat: GT1 ORF2, GT2 ORF2, GT3 ORF2, GT4 ORF2)	IgA	EUROLINE	16 stripes 50 stripes Immunblot-PreQ 64 stripes
DN 2525-1601 G DN 2525-0510 G DN 2525-6401 G	EUROLINE Hepatitis E Virus (separat: GT1 ORF2, GT2 ORF2, GT3 ORF2, GT4 ORF2)	IgG	EUROLINE	16 stripes 50 stripes Immunblot-PreQ 64 stripes
DN 2525-1601 M DN 2525-0510 M DN 2525-6401 M	EUROLINE Hepatitis E Virus (separat: GT1 ORF2, GT2 ORF2, GT3 ORF2, GT4 ORF2)	IgM	EUROLINE	16 stripes 50 stripes Immunblot-PreQ 64 stripes
DN 2580-1601 G	Parvovirus B19 (VP1, VLP, VP2, NS1 separately)	IgG	EUROLINE	16 strips
DN 2580-1601 M	Parvovirus B19 (VP1, VLP, VP2, NS1 separately)	IgM	EUROLINE	16 strips

EUROLINE for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DN 2606-1601-1 G **DN 2606-0510-1 G** **DN 2606-6401-1 G**	**EUROLINE Anti-SARS-CoV-2 Profile (IgG)**	IgG	EUROLINE	16 strips 50 strips Immunblot-PreQ 64 strips
DN 278h-1601-1 G	**Hantavirus Profile 1** **(PUUV, DOBV, HTNV separately)**	IgG	EUROLINE	16 strips
DN 278h-1601-1 M	**Hantavirus Profile 1** **(PUUV, DOBV, HTNV separately)**	IgM	EUROLINE	16 strips
DN 2790-1601-2 G **DN 2790-0510-2 G** **DN 2790-6401-2 G**	**EBV Profile 2** **(VCA gp125, VCA p19,** **EBNA-1, p22, EA-D separately)**	IgG	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips
DN 2790-1601-2 M **DN 2790-0510-2 M** **DN 2790-6401-2 M**	**EBV Profile 2** **(VCA gp125, VCA p19,** **EBNA-1, p22, EA-D separately)**	IgM	EUROLINE	16 strips 50 strips Immunoblot-PreQ 64 strips

Westernblot/EUROLINE-WB for Infectious Serology (Test Systems)

Order No.	Antibodies against	Antigen and Antigen Source	Ig Class	Format
DY 2080-1601-1 A **DY 2080-3001-1 A**	**EUROLINE-WB** **Helicobacter pylori**	whole antigen of H. pylori, plus recombinant VacA and CagA antigen	IgA	16 strips 30 strips
DY 2080-1601-1 G **DY 2080-3001-1 G**	**EUROLINE-WB** **Helicobacter pylori**	whole antigen of H. pylori, plus recombinant VacA and CagA antigen	IgG	16 strips 30 strips
DY 2111-1601 G **DY 2111-2401 G**	**Treponema pallidum**	15 kDa, 17 kDa, 45 kDa (tmpA), 47 kDa	IgG	16 strips 24 strips
DY 2111-1601 M **DY 2111-2401 M**	**Treponema pallidum**	15 kDa, 17 kDa, 45 kDa (tmpA), 47 kDa	IgM	16 strips 24 strips
DY 2111-1601-1 G **DY 2111-2401-1 G**	**EUROLINE-WB** **Treponema pallidum** **plus cardiolipin**	15 kDa, 17 kDa, 45 kDa (tmpA), 47 kDa plus purified cardiolipin	IgG	16 strips 24 strips
DY 2111-1601-1 M **DY 2111-2401-1 M**	**EUROLINE-WB** **Treponema pallidum** **plus cardiolipin**	15 kDa, 17 kDa, 45 kDa (tmpA), 47 kDa plus purified cardiolipin	IgM	16 strips 24 strips
DY 2131-3001 G **DY 2131-24001 G**	**Borrelia afzelii**	whole antigen, SDS extract of Borrelia afzelii	IgG	30 strips 240 strips
DY 2131-3001 M **DY 2131-24001 M**	**Borrelia afzelii**	whole antigen, SDS extract of Borrelia afzelii	IgM	30 strips 240 strips
DY 2131-1601-1 G **DY 2131-3001-1 G** **DY 2131-0148-1 G** **DY 2131-24001-1 G**	**EUROLINE-WB** **Borrelia**	whole antigen, SDS extract of Borrelia afzelii plus VlsE	IgG	16 strips 30 strips 48 strips Immunoblot-PreQ 240 strips
DY 2131-1601-1 M **DY 2131-3001-1 M** **DY 2131-0148-1 M** **DY 2131-24001-1 M**	**EUROLINE-WB** **Borrelia**	whole antigen, SDS extract of Borrelia afzelii plus VlsE	IgM	16 strips 30 strips 48 strips Immunoblot-PreQ 240 strips
DY 2132-3001 G	**Borrelia burgdorferi**	whole antigen, SDS extract of Borrelia burgdorferi sensu stricto	IgG	30 strips
DY 2132-3001 M	**Borrelia burgdorferi**	whole antigen, SDS extract of Borrelia burgdorferi sensu stricto	IgM	30 strips

Westernblot/EUROLINE-WB for Infectious Serology (Test Systems)

Order No.	Antibodies against	Antigen and Antigen Source	Ig Class	Format
DY 2133-3001 G * **DY 2133-24001 G ***	**Borrelia burgdorferi US**	whole antigen, SDS extract of Borrelia burgdorferi	IgG	30 strips 240 strips
DY 2133-3001-1 M * **DY 2133-24001-1 M ***	**Borrelia burgdorferi US EUROLINE-WB**	whole antigen, SDS extract of Borrelia burgdorferi plus flagellin	IgM	30 strips 240 strips
DY 2134-3001 G	**Borrelia garinii**	whole antigen, SDS extract of Borrelia garinii	IgG	30 strips
DY 2134-3001 M	**Borrelia garinii**	whole antigen, SDS extract of Borrelia garinii	IgM	30 strips
DY 2173-1601 A **DY 2173-3001 A**	**Yersinia enterocolitica Detection of antibodies against virulence factors of the Yersinia enterocolitica pathogen in human serum (for diagnosing various forms of arthritis).**	isolated virulence factors (release proteins, Yop) of Yersinia enterocolitica	IgA	16 strips 30 strips
DY 2173-1601 G **DY 2173-3001 G**	**Yersinia enterocolitica Detection of antibodies against virulence factors of the Yersinia enterocolitica pathogen in human serum (for diagnosing various forms of arthritis).**	isolated virulence factors (release proteins, Yop) of Yersinia enterocolitica	IgG	16 strips 30 strips
DY 2190-1601-1 A	**EUROLINE-WB Chlamydia, human pathogen**	Chlamydia trachomatis, Chlamydia pneumoniae, Chlamydia psittaci	IgA	16 strips
DY 2190-1601-1 G	**EUROLINE-WB Chlamydia, human pathogen**	Chlamydia trachomatis, Chlamydia pneumoniae, Chlamydia psittaci	IgG	16 strips
DY 2311-1601 G	**Toxocara**	Toxocara whole lysate	IgG	16 strips
DY 2321-1601-1 G	**EUROLINE-WB Echinococcus**	Echinococcus multilocularis and Echinococcus granulosus	IgG	16 strips
DY 2531-1601-1 G	**EUROLINE-WB Herpes simplex virus 1 (HSV-1) plus HSV-2 type-specific glycoprotein G2**	whole antigen, SDS extract of HSV-1 plus purified gG2	IgG	16 strips
DY 2531-1601-1 M	**EUROLINE-WB Herpes simplex virus 1 (HSV-1) plus HSV-2 type-specific glycoprotein G2**	whole antigen, SDS extract of HSV-1 plus purified gG2	IgM	16 strips
DY 2590-2401 G	**Rubella virus**	whole antigen	IgG	24 strips
DY 2790-1601-1 G	**EUROLINE-WB Epstein Barr virus (EBV)**		IgG	16 strips
DY 2790-1601-1 M	**EUROLINE-WB Epstein Barr virus (EBV)**		IgM	16 strips

EUROMicroblot for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
KN 2131-9601 G	**EUROMicroblot Anti Borrelia (IgG)**	IgG		1 x 96, separable
KN 2131-9601 M	**EUROMicroblot Anti Borrelia (IgM)**	IgM		1 x 96, separable

* For research use only, not for in vitro diagnostic use in the sense of EU directive 98/79/EC.

Microplate ELISA for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EI 2040-9601 G	**diphtheria toxoid**	IgG	0.01/0.1/1/2 IU/ml	96 x 01
EI 2050-9601 A	**Bordetella pertussis toxin**	IgA	2/10/25/50 IU/ml	96 x 01
EI 2050-9601 G	**Bordetella pertussis toxin**	IgG	5/25/100/200 IU/ml	96 x 01
EI 2050-9601 M	**Bordetella pertussis incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2050-9601-3 A	**Bordetella FHA**	IgA	2/10/25/50 IU/ml	96 x 01
EI 2050-9601-3 G	**Bordetella FHA**	IgG	5/25/100/200 IU/ml	96 x 01
EI 2060-9601 G	**tetanus toxoid**	IgG	0,01/0,1/1/2/5 IU/ml	96 x 01
EI 2080-9601 A	**Helicobacter pylori**	IgA	semi-quantitative	96 x 01
EI 2080-9601 G	**Helicobacter pylori**	IgG	2/20/200 RU/ml	96 x 01
EI 2081-9601 A	**Helicobacter pylori (CagA)**	IgA	semi-quantitative	96 x 01
EI 2091-9601 A	**Campylobacter jejuni**	IgA	semi-quantitative	96 x 01
EI 2091-9601 G	**Campylobacter jejuni**	IgG	2/20/200 RU/ml	96 x 01
EI 2111-9601 G	**Treponema pallidum**	IgG	2/20/200 RU/ml	96 x 01
EI 2111-9601 M	**Treponema pallidum incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2111-9601 O	**Treponema pallidum Screen ELISA**	IgGM	2/20/200 RU/ml	96 x 01
EI 2111-9601-L G	**Treponema pallidum antibody determination in CSF**	IgG	5/25/50/100 U	96 x 01
EI 2132-9601 M	**Borrelia incl. IgG/RF absorbent**	IgM	2/20/200 RU/ml	96 x 01
EI 2132-9601-2 G	**Borrelia plus VlsE**	IgG	2/20/200 RU/ml	96 x 01
EI 2132-9601-5 G	**Borrelia Select: recombinant antigens with VlsE**	IgG	2/20/200 RU/ml	96 x 01
EI 2132-9601-5 M	**Borrelia Select: recombinant antigens with OspC advanced**	IgM	2/20/200 RU/ml	96 x 01
EI 2132-9601-L G	**Borrelia PLUS VlsE antibody determination in CSF**	IgG	5/25/50/100/175/230 U	96 x 01
EI 2132-9601-L M	**Borrelia antibody determination in CSF**	IgM	5/25/50/100/175 U	96 x 01
EI 2132-9601-24 O	**Lyme ELISA**	IgGM	qualitative	96 x 01
EI 2150-9601 G	**Legionella pneumophila**	IgG	2/20/200 RU/ml	96 x 01
EI 2150-9601 M	**Legionella pneumophila incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01

Microplate ELISA for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EI 2173-9601 A	**Yersinia enterocolitica**	IgA	semi-quantitative	96 x 01
EI 2173-9601 G	**Yersinia enterocolitica**	IgG	2/20/200 RU/ml	96 x 01
EI 217a-9601-1 G	**Coxiella burnetii phase 1**	IgG	semi-quantitative	96 x 01
EI 217a-9601-2 G	**Coxiella burnetii phase 2**	IgG	semi-quantitative	96 x 01
EI 217a-9601-2 M	**Coxiella burnetii phase 2**	IgM	semi-quantitative	96 x 01
EI 2189-9601 G	**Brucella abortus**	IgG	2/20/200 RU/ml	96 x 01
EI 2189-9601 M	**Brucella abortus incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2191-9601 A	**Chlamydia trachomatis**	IgA	semi-quantitative	96 x 01
EI 2191-9601 G	**Chlamydia trachomatis**	IgG	2/20/200 RU/ml	96 x 01
EI 2191-9601 M	**Chlamydia trachomatis incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2192-9601 A	**Chlamydia pneumoniae**	IgA	semi-quantitative	96 x 01
EI 2192-9601 G	**Chlamydia pneumoniae**	IgG	2/20/200 RU/ml	96 x 01
EI 2192-9601 M	**Chlamydia pneumoniae incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2202-9601 A	**Mycoplasma pneumoniae**	IgA	semi-quantitative	96 x 01
EI 2202-9601 G	**Mycoplasma pneumoniae**	IgG	2/20/200 RU/ml	96 x 01
EI 2202-9601 M	**Mycoplasma pneumoniae incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2212-9601 G	**Trypanosoma cruzi**	IgG	2/20/200 RU/ml	96 x 01
EI 2260-9601 G	**Plasmodium**	IgG	semi-quantitative	96 x 01
EI 2290-9601 G	**Strongyloides**	IgG	semi-quantitative	96 x 01
EI 2300-9601 G	**Schistosoma**	IgG	semi-quantitative	96 x 01
EI 2300-9601 M	**Schistosoma incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2311-9601 G	**Toxocara**	IgG	semi-quantitative	96 x 01
EI 2320-9601-1 G	**Echinococcus**	IgG	semi-quantitative	96 x 01
EI 2410-9601 A	**Toxoplasma gondii**	IgA	semi-quantitative	96 x 01
EI 2410-9601 G	**Toxoplasma gondii**	IgG	1/10/200 IU/ml	96 x 01
EI 2410-9601 M	**Toxoplasma gondii incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2410-9601 P	**Toxoplasma gondii Screen**	IgAGM	semi-quantitative	96 x 01
EI 2410-9601-1 G	**Toxoplasma gondii avidity determination**	IgG	1/10/200 IU/ml	96 x 01
EI 2410-9601-L G	**Toxoplasma gondii antibody determination in CSF**	IgG	5/25/50/100 U	96 x 01

Microplate ELISA for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EI 2525-9601 G	**Hepatitis E virus (HEV)**	IgG	0,2/1/10/25 IU/ml	96 x 01
EI 2525-9601 M	**Hepatitis E virus (HEV)**	IgM	semi-quantitative	96 x 01
EI 2525-9601 P	**Hepatitis E virus (HEV)**	IgAGM	semi-quantitative	96 x 01
EI 2531-9601-1 G	**Herpes simplex virus (HSV-1/2 Pool)**	IgG	2/20/200 RU/ml	96 x 01
EI 2531-9601-1 L G	**Herpes simplex virus (HSV-1/2 Pool) antibody determination in CSF**	IgG	5/25/50/100/175/230 U/ml	96 x 01
EI 2531-9601-1 M	**Herpes simplex virus (HSV-1/2 Pool) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2531-9601-2 G	**Herpes simplex virus 1 (HSV-1)**	IgG	2/20/200 RU/ml	96 x 01
EI 2532-9601-2 G	**Herpes simplex virus 2 (HSV-2)**	IgG	2/20/200 RU/ml	96 x 01
EI 2570-9601 G	**Cytomegalovirus (CMV)**	IgG	2/20/200 RU/ml	96 x 01
EI 2570-9601 M	**Cytomegalovirus (CMV) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2570-9601-1 G	**Cytomegalovirus (CMV) avidity determination**	IgG	2/20/200 RU/ml	96 x 01
EI 2570-9601-2 M	**Cytomegalovirus (CMV) p52 incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2570-9601-3 G	**Cytomegalovirus (CMV) gB**	IgG	2/20/200 RU/ml	96 x 01
EI 2570-9601-L G	**Cytomegalovirus (CMV) antibody determination in CSF**	IgG	5/25/50/100 U	96 x 01
EI 2580-9601 G	**Parvovirus B19**	IgG	1/5/25/100 IU/ml	96 x 01
EI 2580-9601 M	**Parvovirus B19 incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2590-9601 G	**Rubella virus**	IgG	1/10/50/200 IU/ml	96 x 01
EI 2590-9601-1 G	**Rubella virus avidity determination**	IgG	1/10/50/200 IU/ml	96 x 01
EI 2590-9601-2 M	**Rubella virus glycoprotein incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2590-9601-L G	**Rubella virus antibody determination in CSF**	IgG	5/25/50/100/175/230 U	96 x 01
EI 2604-9601 G	**MERS coronavirus**	IgG	semi-quantitative	96 x 01

Microplate ELISA for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EI 2606-9601 A **EI 2606-9620 A**	**SARS-CoV-2**	IgA	semi-quantitative	96 x 01 96 x 20
EI 2606-9601 G **EI 2606-9620 G**	**SARS-CoV-2**	IgG	semi-quantitative	96 x 01 96 x 20
EI 2606-9601-2 G **EI 2606-9620-2 G**	**SARS-CoV-2 NCP**	IgG	semi-quantitative	96 x 01 96 x 20
EI 2606-9601-4	**SARS-CoV-2 NeutraLISA**	IgAGM		96 x 01
EI 2606-9601-10 G	**SARS-CoV-2 QuantiVac**	IgG	1/10/20/40/80/120 RU/mL	96 x 01
EI 2610-9601 G	**Measles virus**	IgG	50/250/1000/5000 IU/l	96 x 01
EI 2610-9601 M	**Measles virus incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2610-9601-1 G	**Measles virus avidity determination**	IgG	50/250/1000/5000/5000 IU/l	96 x 01
EI 2610-9601-4 M	**Measles virus NP: recombinant nucleoprotein incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2610-9601-L G	**Measles virus antibody determination in CSF**	IgG	5/25/50/100/175/230 U	96 x 01
EI 2630-9601 G	**Mumps virus**	IgG	2/20/200 RU/ml	96 x 01
EI 2630-9601 M	**Mumps virus incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2630-9601-3 G	**Mumps virus AT: strains "Enders" and "Jeryl Lynn"**	IgG	2/20/200 RU/ml	96 x 01
EI 2630-9601-5 M	**Mumps virus G5: native antigens, genotype "G5" incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2630-9601-L G	**Mumps virus antibody determination in CSF**	IgG	5/25/50/100 U	96 x 01
EI 2650-9601 A	**Varicella zoster virus (VZV)**	IgA	semi-quantitative	96 x 01
EI 2650-9601 G	**Varicella zoster virus (VZV)**	IgG	10/100/500/5000 IU/l	96 x 01
EI 2650-9601 M	**Varicella zoster virus (VZV) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2650-9601-1 G	**Varicella zoster virus (VZV) avidity determination**	IgG	10/100/500/5000 IU/l	96 x 01
EI 2650-9601-2 M	**Varicella zoster virus (VZV) glycoprotein incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2650-9601-L A	**Varicella zoster virus (VZV) antibody determination in CSF**	IgA	5/25/50/100 U	96 x 01
EI 2650-9601-L G	**Varicella zoster virus (VZV) antibody determination in CSF**	IgG	5/25/50/100/175/230 U	96 x 01
EI 2661-9601 G	**TBE virus**	IgG	2/20/200 RU/ml	96 x 01

Microplate ELISA for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EI 2661-9601 M	**TBE virus incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2661-9601-1 G	**TBE virus avidity determination**	IgG	2/20/200 RU/ml	96 x 01
EI 2661-9601-9 G	**TBE virus Vienna**	IgG	15/150/300/1000 VIEU/ml	96 x 01
EI 2661-9601-L G	**TBE virus antibody determination in CSF**	IgG	5/25/50/100 U	96 x 01
EI 2661-9601-L M	**TBE virus antibody determination in CSF**	IgM	5/25/50/100 U	96 x 01
EI 2662-9601 G	**West Nile virus (WNV)**	IgG	2/20/200 RU/ml	96 x 01
EI 2662-9601 M	**West Nile virus (WNV) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2662-9601-1 G	**West Nile virus (WNV) avidity determination**	IgG	2/20/200 RU/ml	96 x 01
EI 2662-9601-2 G *	**West Nile virus (WNV) NS1**	IgG	2/20/200 RU/ml	96 x 01
EI 2663-9601 G	**Japanese encephalitis virus (JEV)**	IgG	2/20/200 RU/ml	96 x 01
EI 2663-9601 M	**Japanese encephalitis virus (JEV)**	IgM	semi-quantitative	96 x 01
EI 2667-9601 G	**Usutu virus**	IgG	2/20/200 RU/ml	96 x 01
EI 2668-9601 A	**Zika virus (ZIKV)**	IgA	semi-quantitative	96 x 01
EI 2668-9601 G	**Zika virus (ZIKV)**	IgG	2/20/200 RU/ml	96 x 01
EI 2668-9601 M	**Zika virus (ZIKV) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2668-9601 Q	**Zika virus (ZIKV) incl. IgG/RF absorbent**	IgAM	semi-quantitative	96 x 01
EI 266a-9601-1 G	**Dengue virus (DENV) type 1-4**	IgG	2/20/200 RU/ml	96 x 01
EI 266a-9601-1 M	**Dengue virus (DENV) type 1-4 incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 266a-9601-2 G	**Dengue virus NS1 (DENV) type 1-4**	IgG	2/20/200 RU/ml	96 x 01
EI 2670-9601 A	**Respiratory syncytial virus (RSV)**	IgA	semi-quantitative	96 x 01
EI 2670-9601 G	**Respiratory syncytial virus (RSV)**	IgG	2/20/200 RU/ml	96 x 01
EI 2670-9601 M	**Respiratory syncytial virus (RSV) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2680-9601 A	**Adenovirus**	IgA	semi-quantitative	96 x 01
EI 2680-9601 G	**Adenovirus**	IgG	2/20/200 RU/ml	96 x 01

* For research use only, not for in vitro diagnostic use in the sense of EU directive 98/79/EC.

Microplate ELISA for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EI 2680-9601 M	**Adenovirus incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2691-9601 A	**Influenza virus type A**	IgA	semi-quantitative	96 x 01
EI 2691-9601 G	**Influenza virus type A**	IgG	2/20/200 RU/ml	96 x 01
EI 2692-9601 A	**Influenza virus type B**	IgA	semi-quantitative	96 x 01
EI 2692-9601 G	**Influenza virus type B**	IgG	2/20/200 RU/ml	96 x 01
EI 2721-9601-1 A	**Parainfluenza virus types 1 - 4 (Pool)**	IgA	semi-quantitative	96 x 01
EI 2721-9601-1 G	**Parainfluenza virus types 1 - 4 (Pool)**	IgG	2/20/200 RU/ml	96 x 01
EI 2730-9601-1 A	**Enterovirus**	IgA	semi-quantitative	96 x 01
EI 2730-9601-1 G	**Enterovirus**	IgG	semi-quantitative	96 x 01
EI 2730-9601-1 M	**Enterovirus incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 277c-9601 G	**Toscana virus**	IgG	2/20/200 RU/ml	96 x 01
EI 278h-9601-1 G	**Hantavirus Pool 1 "Eurasia"**	IgG	2/20/200 RU/ml	96 x 01
EI 278h-9601-1 M	**Hantavirus Pool 1 "Eurasia" incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 278h-9601-2 G	**Hantavirus Pool 2 "America"**	IgG	2/20/200 RU/ml	96 x 01
EI 278h-9601-2 M	**Hantavirus Pool 2 "America" incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2791-9601 A	**Epstein-Barr virus capsid antigen (EBV-CA)**	IgA	semi-quantitative	96 x 01
EI 2791-9601 G	**Epstein-Barr virus capsid antigen (EBV-CA)**	IgG	2/20/200 RU/ml	96 x 01
EI 2791-9601 M	**Epstein-Barr virus capsid antigen (EBV-CA) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 2791-9601-1 G	**Epstein-Barr virus capsid antigen (EBV-CA) avidity determination**	IgG	2/20/200 RU/ml	96 x 01
EI 2791-9601-L G	**Epstein-Barr virus capsid antigen (EBV-CA) antibody determination in CSF**	IgG	5/25/50/100 U	96 x 01
EI 2793-9601 G	**Epstein-Barr virus nuclear antigen (EBNA-1)**	IgG	2/20/200 RU/ml	96 x 01
EI 2795-9601 A	**Epstein-Barr virus early antigen (EBV-EA)**	IgA	semi-quantitative	96 x 01
EI 2795-9601 G	**Epstein-Barr virus early antigen (EBV-EA)**	IgG	2/20/200 RU/ml	96 x 01
EI 2795-9601 M	**Epstein-Barr virus early antigen (EBV-EA) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 279a-9601 G	**Crimean Congo fever virus (CCHFV)**	IgG	2/20/200 RU/ml	96 x 01

Microplate ELISA for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
EI 279a-9601 M	**Crimean Congo fever virus (CCHFV) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 293a-9601 G	**Chikungunya virus (CHIKV)**	IgG	2/20/200 RU/ml	96 x 01
EI 293a-9601 M	**Chikungunya virus (CHIKV) incl. IgG/RF absorbent**	IgM	semi-quantitative	96 x 01
EI 295c-9601 G	**Mayaro virus (MAYV)**	IgG	2/20/200 RU/ml	96 x 01
EI 295c-9601 M	**Mayaro virus (MAYV)**	IgM	semi-quantitative	96 x 01

Chemiluminescence Tests for Infectious Serology (Test Systems)

Order No.	Antibodies against	Ig Class	Calibration	Format
LI 2132-10010 G	Borrelia	IgG	quantitative	100 determinations for RA Analyzer 10
LI 2132-10010 M	Borrelia	IgM	quantitative	100 determinations for RA Analyzer 10
LI 2531-10010 G	Herpes simplex virus 1 (HSV-1)	IgG	quantitative	100 determinations for RA Analyzer 10
LI 2532-10010 G	Herpes simplex virus 2 (HSV-2)	IgG	quantitative	100 determinations for RA Analyzer 10
LI 2580-10010 G	Parvovirus B19	IgG	quantitative	100 determinations for RA Analyzer 10
LI 2580-10010 M	Parvovirus B19	IgM	quantitative	100 determinations for RA Analyzer 10
LI 2606-10010-1 G	SARS-CoV-2 RBD	IgG	quantitative	100 determinations for RA Analyzer 10
LI 2791-10010 G	Epstein-Barr virus capsid antigen (EBV-CA)	IgG	quantitative	100 determinations for RA Analyzer 10
LI 2791-10010 M	Epstein-Barr virus capsid antigen (EBV-CA)	IgM	quantitative	100 determinations for RA Analyzer 10
LI 2793-10010 G	Epstein-Barr virus nuclear antigen 1 (EBNA-1)	IgG	quantitative	100 determinations for RA Analyzer 10

Control Sets for Chemiluminescence Tests

Order No.	Control Set (Ready for use)	Ig Class	Format
LR 2132-20210 G	Control set Borrelia	IgG	2 x 0.5 ml control 1/2
LR 2132-20210 M	Control set Borrelia	IgM	2 x 0.5 ml control 1/2
LR 2531-20210 G	Control set Herpes simplex virus 1 (HSV-1)	IgG	2 x 0.5 ml control 1/2
LR 2532-20210 G	Control set Herpes simplex virus 2 (HSV-2)	IgG	2 x 0.5 ml control 1/2
LR 2580-20210 G	Control set Parvovirus B19	IgG	2 x 0,5 ml control 1/2
LR 2580-20210 M	Control set Parvovirus B19	IgM	2 x 0.5 ml control 1/2
LR 2606-20210-1 G	Control set Anti-SARS-CoV-2 RBD ChLIA (IgG)	IgG	2 x 0,5 ml control 1/2
LR 2791-20210 G	Control set Epstein-Barr virus capsid antigen (EBV-CA)	IgG	2 x 0.5 ml control 1/2
LR 2791-20210 M	Control set Epstein-Barr virus capsid antigen (EBV-CA)	IgM	2 x 0.5 ml control 1/2
LR 2793-20210 G	Control set Epstein-Barr virus nuclear antigen 1 (EBNA-1)	IgG	2 x 0.5 ml control 1/2

IDS Chemiluminescence Tests for Infectious Serology (Test Systems)

IDS Order No.	Description	Format
IS-ID6101	IDS Tetanus IgG	100 determinations, calibrators incl.
IS-ID6201	IDS Borrelia Burgdorferi IgG	100 determinations, calibrators incl.
IS-ID6202	IDS Borrelia Burgdorferi IgM	100 determinations, calibrators incl.
YB500032	TGS TOXO IgG	100 determinations, calibrators incl.
YB500033	TGS TOXO IgM	100 determinations, calibrators incl.
YB500034	TGS TOXO IgG Avidity	50 determinations, calibrators incl.
IS-ID5701	IDS HSV 1/2 IgM	100 determinations, calibrators incl.
IS-ID5601	IDS HSV-1 IgG	100 determinations, calibrators incl.
IS-ID5602	IDS HSV-2 IgG	100 determinations, calibrators incl.
YB500035	TGS CMV IgG	100 determinations, calibrators incl.
YB500036	TGS CMV IgM	100 determinations, calibrators incl.
YB500037	TGS CMV IgG Avidity	50 determinations, calibrators incl.
IS-ID6301	IDS Parvovirus B19 IgG	50 determinations, calibrators incl.
IS-ID6302	IDS Parvovirus B19 IgM	50 determinations, calibrators incl.
YB500038	TGS Rubella IgG	100 determinations, calibrators incl.
YB500039	TGS Rubella IgM	100 determinations, calibrators incl.
YB500047	TGS Rubella IgG Avidity	50 determinations, calibrators incl.
CVCL100G	TGS COVID-19 IgG	100 determinations
CVCL100M	TGS COVID-19 IgM	100 determinations
IS-ID5901	IDS Measles IgG	50 determinations, calibrators incl.
IS-ID6001	IDS Measles IgM	50 determinations, calibrators incl.
IS-ID5902	IDS Mumps IgG	50 determinations, calibrators incl.
IS-ID6002	IDS Mumps IgM	50 determinations, calibrators incl.
IS-ID5903	IDS VZV IgG	50 determinations, calibrators incl.
IS-ID6003	IDS VZV IgM	50 determinations, calibrators incl.
IS-ID5801	IDS EBV VCA IgG	100 determinations, calibrators incl.
IS-ID5802	IDS EBV VCA IgM	100 determinations, calibrators incl.
IS-ID5803	IDS EBV EBNA-1 IgG	100 determinations, calibrators incl.
IS-ID5804	IDS EBV EA IgG	50 determinations, calibrators incl.

IDS Control Sets for Chemiluminescence Tests

IDS Order No.	Description	Format
IS-ID6130	IDS Tetanus IgG Control Set	2 concentrations
IS-ID6230	IDS Borrelia Burgdorferi Control Set	2 concentrations
YB500040	TGS TOXO Control Set	2 concentrations
YB500041	TGS TOXO Avidity Control Set	2 concentrations
IS-ID5730	IDS HSV 1/2 IgM Control Set	2 concentrations
IS-ID5630	IDS HSV 1/2 IgG Control Set	2 concentrations
YB500042	TGS CMV Control Set	2 concentrations
YB500043	TGS CMV Avidity Control Set	2 concentrations
IS-ID6330	IDS Parvovirus B19 Control Set	2 concentrations
YB500044	TGS Rubella Control Set	2 concentrations
YB500048	TGS Rubella Avidity Control Set	2 concentrations
CVCLCSGM	TGS COVID-19 Control Set	2 concentrations
IS-ID5930	IDS MMV IgG Control Set	2 concentrations
IS-ID6030	IDS MMV IgM Control Set	2 concentrations
IS-ID5830	IDS EBV Control Set	2 concentrations

Microplate ELISA for the Determination of Infectious Diseases, Antigen Detection (Test Systems)

Order No.	Analyte	Calibration	Format
EQ 2606-9601	**SARS-CoV-2 Antigen**	semi-quantitative	96 x 01
EQ 266a-9601-1	**Dengue virus NS1 antigen detection (DENV)**	1/10/100 RU/ml	96 x 01
EQ 6811-9601-L	**CXCL13 determination in CSF**	0-500 pg/ml	96 x 01
EQ 6841-9601	**Quan-T-Cell ELISA To be used in combination with ET 2606**	12-400 mIU/ml	96 x 01
EQ 6911-9601	**Aspergillus antigen**	0/20/50/125/312.5/625 pg/ml	96 x 01

T-Cell Stimulation Tube Sets for the Determination of Infectious Diseases

Order No.	Analyte	Calibration	Format
ET 2606-3003	**Quan-T-Cell SARS-CoV-2 To be used in combination with EQ 6841**	–	30 x 03

ELISA Controls for Infectious CSF Diagnostics

Order No.	Control (Ready for use)	Ig Class	Format
CK 2111-0220-L G	CSQ pair of controls anti-Treponema pallidum (IgG)	IgG	2 x 2 ml, ready for use
CK 2132-0220-L G	CSQ pair of controls anti-Borrelia (IgG)	IgG	2 x 2 ml, ready for use
CK 2132-0220-L M	CSQ pair of controls anti-Borrelia (IgM)	IgM	2 x 2 ml, ready for use
CK 2410-0220-L G	CSQ pair of controls anti-Toxoplasma gondii (IgG)	IgG	2 x 2 ml, ready for use
CK 2531-0220-1 L G	CSQ pair of controls anti-HSV-1/2 Pool (IgG)	IgG	2 x 2 ml, ready for use
CK 2570-0220-L G	CSQ pair of controls anti-Cytomegalovirus (IgG)	IgG	2 x 2 ml, ready for use
CK 2590-0220-L G	CSQ pair of controls anti-Rubella virus (IgG)	IgG	2 x 2 ml, ready for use
CK 2610-0220-L G	CSQ pair of controls anti-Measles virus (IgG)	IgG	2 x 2 ml, ready for use
CK 2630-0220-L G	CSQ pair of controls anti-Mumps virus (IgG)	IgG	2 x 2 ml, ready for use
CK 2650-0220-L G	CSQ pair of controls anti-VZV (IgG)	IgG	2 x 2 ml, ready for use
CK 2661-0220-9 L G	CSQ pair of controls anti-TBE virus Vienna (IgG)	IgG	2 x 2 ml, ready for use
CK 2661-0220-L G	CSQ pair of controls anti-TBE virus (IgG)	IgG	2 x 2 ml, ready for use
CK 2661-0220-L M	CSQ pair of controls anti-TBE virus (IgM)	IgM	2 x 2 ml, ready for use
CK 2791-0220-L G	CSQ pair of controls anti-EBV-CA (IgG)	IgG	2 x 2 ml, ready for use

Diagnostics for Indirect Immunofluorescence: Infectious Serology

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FI 2050-1005-1 G **FI 2050-1010-1 G**	**Bordetella pertussis** **Bordetella parapertussis**	IgG	bacterial smears (2 BIOCHIPs per field)	B. pertussis B. parapertussis	10 x 05 (test system) 10 x 10 (test system)
FI 2111-1005 G **FI 2111-1010 G** **FI 2111-1005 M** **FI 2111-1010 M**	**Treponema pallidum (FTA-ABS)**	IgG IgM	bacterial smear verification BIOCHIP (2 BIOCHIPs per field)	T. pallidum	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system)
FI 2112-1005 G **FI 2112-1010 G** **FI 2112-1005 M** **FI 2112-1010 M**	**Treponema pallidum (FTA-ABS)**	IgG IgM	bacterial smears verification BIOCHIP (3 BIOCHIPs per field)	T. pallidum T. phagedenis	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system)
FI 2136-1005-1 G **FI 2136-1010-1 G** **FI 2136-1005-1 M** **FI 2136-1010-1 M**	**EUROPLUS** **Borrelia afzelii** **Borrelia burgdorferi (USA)** **OspC antigen** **VlsE antigen**	IgG IgM	4 BIOCHIPs per field: bacterial smear bacterial smear OspC BIOCHIPs VlsE BIOCHIPs	 B. afzelii B. burgd. (USA) B. burgdorferi recombinant	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system)
FI 2141-1005-1 G **FI 2141-1010-1 G**	**Listeria monocytogenes 1/2a and 4b**	IgG	bacterial smears (2 BIOCHIPs per field)	Listeria monocytogenes 1/2a and 4b	10 x 05 (test system) 10 x 10 (test system)
FI 2191-1005-3 A **FI 2191-1010-3 A** **FI 2191-1005-3 G** **FI 2191-1010-3 G** **FI 2191-1005-3 M** **FI 2191-1010-3 M**	**Anti-Chlamydia MIF** **Chlamydia trachomatis** **Chlamydia pneumoniae** **Chlamydia psittaci**	IgA EB IgG EB IgM EB	4 BIOCHIPs per field: elementary bodies and non-infected cells	 EU 40 EU 40 EU 40	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system)
FR 2191-1005-3 A **FR 2191-1010-3 A** **FR 2191-1005-3 G** **FR 2191-1010-3 G** **FR 2191-1005-3 M** **FR 2191-1010-3 M**	**Anti-Chlamydia MIF EUROPattern** **Chlamydia trachomatis** **Chlamydia pneumoniae** **Chlamydia psittaci**	IgA EB IgG EB IgM EB	4 BIOCHIPs per field: elementary bodies and non-infected cells	 EU 40 EU 40 EU 40	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system)
FI 2191-1005-80 A **FI 2191-1005-80 G** **FI 2191-1005-80 M**	**Chlamydia trachomatis**	IgA EB IgG EB IgM EB	elementary bodies (MIF) non-infected cells (2 BIOCHIPs per field)	EU 40 EU 40	10 x 05 (test system) 10 x 05 (test system) 10 x 05 (test system)
FI 2192-1005-80 A **FI 2192-1005-80 G** **FI 2192-1005-80 M**	**Chlamydia pneumoniae**	IgA EB IgG EB IgM EB	elementary bodies (MIF) non-infected cells (2 BIOCHIPs per field)	EU 40 EU 40	10 x 05 (test system) 10 x 05 (test system) 10 x 05 (test system)
FR 2192-1005-80 A **FR 2192-1005-80 G** **FR 2192-1005-80 M**	**Chlamydia pneumoniae EUROPattern**	IgA EB IgG EB IgM EB	elementary bodies (MIF) non-infected cells (2 BIOCHIPs per field)	EU 40 EU 40	10 x 05 (test system) 10 x 05 (test system) 10 x 05 (test system)
FI 219b-1005 G **FI 219b-1010 G** **FI 219b-1005 M** **FI 219b-1010 M**	**Bartonella henselae**	IgG IgM EB	infected cells infected and non-infected cells (2 BIOCHIPs per field)	EU 70	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system)
FI 219b-1005-1 G **FI 219b-1010-1 G** **FI 219b-1005-1 M** **FI 219b-1010-1 M**	**Bartonella henselae** **Bartonella quintana**	IgG IgM EB	infected cells infected cells (2 BIOCHIPs per field) infected and non-infected cells (4 BIOCHIPs per field)	EU 70 EU 70 EU 70 EU 38	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system)
FR 219b-1005-1 G **FR 219b-1010-1 G** **FR 219b-2010-1 M**	**Bartonella henselae EUROPattern** **Bartonella quintana EUROPattern**	IgG PI IgM EB	infected cells infected cells (2 BIOCHIPs per field) infected and non-infected cells (4 BIOCHIPs per field)	EU 70 EU 70 EU 70 EU 38	10 x 05 (test system) 10 x 10 (test system) 20 x 10 (test system)

Diagnostics for Indirect Immunofluorescence: Infectious Serology

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FI 2201-1005-1 G	**Mycoplasma hominis**	IgG EB	infected cells	EU 38	10 x 05 (test system)
FI 2201-1010-1 G	**Ureaplasma urealyticum**		infected cells	EU 38	10 x 10 (test system)
FI 2201-1005-1 M		IgM EB	non-infected cells	EU 38	10 x 05 (test system)
FI 2201-1010-1 M			(3 BIOCHIPs per field)		10 x 10 (test system)
FR 2201-1005-1 G	**Mycoplasma hominis EUROPattern**	IgG EB	infected cells	EU 38	10 x 05 (test system)
FR 2201-1010-1 G	**Ureaplasma urealyticum EUROPattern**		infected cells	EU 38	10 x 10 (test system)
			non-infected cells	EU 38	
			(3 BIOCHIPs per field)		
FI 2231-1005 G	**Leishmania donovani**	IgG	protozoan	Leishmania	10 x 05 (test system)
FI 2231-1010 G	**(promastigote)**		smear	donovani	10 x 10 (test system)
FI 2231-1005 M		IgM			10 x 05 (test system)
FI 2231-1010 M					10 x 10 (test system)
FI 2300-1005 G	**Schistosoma mansoni**	IgG	frozen sections	Schistosoma mansoni, adult	10 x 05 (test system)
FI 2410-1005 G	**Toxoplasma**	IgG	protozoan	Toxoplasma	10 x 05 (test system)
FI 2410-1010 G	**gondii**		smear	gondii	10 x 10 (test system)
FI 2410-1005 M		IgM			10 x 05 (test system)
FI 2410-1010 M					10 x 10 (test system)
FI 2536-1005 G	**HHV-6**	IgG	infected cells	EU 30	10 x 05 (test system)
FI 2536-1010 G					10 x 10 (test system)
FI 2536-2005 G					20 x 05 (test system)
FI 2536-2010 G					20 x 10 (test system)
FI 2536-1005 M		IgM			10 x 05 (test system)
FI 2536-1010 M					10 x 10 (test system)
FI 2536-2005 M					20 x 05 (test system)
FI 2536-2010 M					20 x 10 (test system)
FR 2536-1005 G	**HHV-6 EUROPattern**	IgG EB	infected cells	EU 30	10 x 05 (test system)
FR 2536-1010 G					10 x 10 (test system)
FR 2536-2005 G					20 x 05 (test system)
FR 2536-2010 G					20 x 10 (test system)
FR 2536-1005 M		IgM EB			10 x 05 (test system)
FR 2536-1010 M					10 x 10 (test system)
FR 2536-2005 M					20 x 05 (test system)
FR 2536-2010 M					20 x 10 (test system)
FI 2601-1010 G	**SARS coronavirus**	IgG	infected and non-	EU 14	10 x 10 (test system)
FI 2601-1010 M		IgM	infected cells		10 x 10 (test system)
			(2 BIOCHIPs per field)		
FI 2604-1005 G	**MERS coronavirus**	IgG	infected and non-	EU 14	10 x 05 (test system)
FI 2604-1010 G			infected cells		10 x 10 (test system)
FI 2604-1005 M		IgM	(2 BIOCHIPs per field)		10 x 05 (test system)
FI 2604-1010 M					10 x 10 (test system)
FI 2620-1005 G *	**Bornavirus (BoDV)**	IgG	infected and	EU 14	10 x 05 (test system)
FI 2620-1010 G *			uninfected cells		10 x 10 (test system)
			(2 BIOCHIPs per field)		
FI 2650-1005 G	**Varicella zoster virus**	IgG	infected cells	EU 168	10 x 05 (test system)
FI 2650-1010 G	**(VZV)**				10 x 10 (test system)
FI 2650-1005 M		IgM			10 x 05 (test system)
FI 2650-1010 M					10 x 10 (test system)
FI 2661-1005 G	**TBE virus (TBEV)**	IgG	infected and non-	EU 14	10 x 05 (test system)
FI 2661-1010 G			infected cells		10 x 10 (test system)
FI 2661-1005 M		IgM	(2 BIOCHIPs per field)		10 x 05 (test system)
FI 2661-1010 M					10 x 10 (test system)

* For research use only, not for in vitro diagnostic use in the sense of EU directive 98/79/EC.

Diagnostics for Indirect Immunofluorescence: Infectious Serology

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FI 2661-1005-1 G	Flavivirus Mosaic 1	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FI 2661-1010-1 G	TBE virus (TBEV)		infected cells	EU 14	10 x 10 (test system)
FI 2661-1005-1 M	West Nile virus (WNV)	IgM	infected cells	EU 14	10 x 05 (test system)
FI 2661-1010-1 M	Japanese encephalitis virus (JEV)		infected cells	EU 14	10 x 10 (test system)
	Yellow fever virus (YFV)		infected cells	EU 14	
FI 2661-1005-2 G	Flavivirus Profile 2	IgG			10 x 05 (test system)
FI 2661-2005-2 G	upper row:				20 x 05 (test system)
FI 2661-1005-2 M	TBE virus (TBEV)	IgM	infected cells	EU 14	10 x 05 (test system)
FI 2661-2005-2 M	West Nile virus (WNV)		infected cells	EU 14	20 x 05 (test system)
	Japanese encephalitis virus (JEV)		infected cells	EU 14	
	Yellow fever virus (YFV)		infected cells	EU 14	
	bottom row:				
	Dengue virus		infected cells	EU 14	
	types 1 - 4 (DENV)				
FI 2662-1005 G	West Nile virus (WNV)	IgG	infected and non-	EU 14	10 x 05 (test system)
FI 2662-1010 G			infected cells		10 x 10 (test system)
FI 2662-1005 M		IgM	(2 BIOCHIPs per field)		10 x 05 (test system)
FI 2662-1010 M					10 x 10 (test system)
FI 2663-1005 G	Japanese encephalitis virus (JEV)	IgG	infected and non-	EU 14	10 x 05 (test system)
FI 2663-1005 M		IgM	infected cells		10 x 05 (test system)
			(2 BIOCHIPs per field)		
FI 2664-1005-2 G *	Arbovirus Mosaic America 2	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FI 2664-1010-2 G *	St. Louis encephalitis virus (SLEV)		infected cells	EU 14	10 x 10 (test system)
FI 2664-1005-2 M *	La crosse virus (LACV)	IgM	infected cells	EU 14	10 x 05 (test system)
FI 2664-1010-2 M *	Eastern equine encephalitis virus (EEEV)		infected cells	EU 14	10 x 10 (test system)
	Western equine encephalitis virus (WEEV)		infected cells	EU 14	
FI 2665-1005 G	Yellow fever virus (YFV)	IgG	infected and non-	EU 14	10 x 05 (test system)
FI 2665-1010 G			infected cells		10 x 10 (test system)
FI 2665-1005 M		IgM	(2 BIOCHIPs per field)		10 x 05 (test system)
FI 2665-1010 M					10 x 10 (test system)
FR 2665-1005 G	Yellow fever virus (YFV) EUROPattern	IgG PI	infected and non-	EU 14	10 x 05 (test system)
FR 2665-1005 M		IgM PI	infected cells		10 x 05 (test system)
			(2 BIOCHIPs per field)		
FI 2666-1005-2 G *	Arbovirus Mosaic Australia 2	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FI 2666-1005-2 M *	Murray Valley encephalitis virus (MVEV)	IgM	infected cells	EU 14	10 x 05 (test system)
	Ross River virus (RRV)		infected cells	EU 14	
	Barmah forest virus (BFV)		infected cells	EU 14	
			non-infected cells	EU 14	
FI 2668-1005 G	Zika virus (ZIKV)	IgG	infected and non-	EU 14	10 x 05 (test system)
FI 2668-1010 G			infected cells		10 x 10 (test system)
FI 2668-1005 M		IgM	(2 BIOCHIPs per field)		10 x 05 (test system)
FI 2668-1010 M					10 x 10 (test system)
FR 2668-1005 G	Zika virus (ZIKV) EUROPattern	IgG PI	infected and non-	EU 14	10 x 05 (test system)
FR 2668-1010 G			infected cells		10 x 10 (test system)
FR 2668-1005 M		IgM PI	(2 BIOCHIPs per field)		10 x 05 (test system)
FR 2668-1010 M					10 x 10 (test system)
FI 2668-1005-1 G	Arbovirus Fever Mosaic 2	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
FI 2668-1010-1 G	Zika virus (ZIKV)		infected cells	EU 14	10 x 10 (test system)
FI 2668-1005-1 M	Chikungunya virus (CHIKV)	IgM	infected cells	EU 14	10 x 05 (test system)
FI 2668-1010-1 M	Dengue virus types 1 - 4 (DENV)		infected cells	EU 14	10 x 10 (test system)
FR 2668-1005-1 G	Arbovirus Fever Mosaic 2 EUROPattern	IgG PI	6 BIOCHIPs per field:		10 x 05 (test system)
FR 2668-1010-1 G	Zika virus (ZIKV)		infected cells	EU 14	10 x 10 (test system)
FR 2668-1005-1 M	Chikungunya virus (CHIKV)	IgM PI	infected cells	EU 14	10 x 05 (test system)
FR 2668-1010-1 M	Dengue virus types 1 - 4 (DENV)		infected cells	EU 14	10 x 10 (test system)

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Diagnostics for Indirect Immunofluorescence: Infectious Serology

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FI 2668-1005-3 G	**Arbovirus Profile 3**	IgG			10 x 05 (test system)
FI 2668-1005-3 M	**upper row :**	IgM			10 x 05 (test system)
	Zika virus (ZIKV)		infected cells	EU 14	
	Chikungunya virus (CHIKV)		infected cells	EU 14	
	Dengue virus types 1 - 4 (DENV)		infected cells	EU 14	
	bottom row:				
	TBE virus (TBEV)		infected cells	EU 14	
	West Nile virus (WNV)		infected cells	EU 14	
	Japanese encephalitis virus (JEV)		infected cells	EU 14	
	Yellow fever virus (YFV)		infected cells	EU 14	
FI 266a-1005-1 G	**Mosaic Dengue virus**	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FI 266a-1010-1 G	**types 1 - 4 (DENV)**		infected cells	EU 14	10 x 10 (test system)
FI 266a-2005-1 G					20 x 05 (test system)
FI 266a-1005-1 M		IgM			10 x 05 (test system)
FI 266a-1010-1 M					10 x 10 (test system)
FI 266a-2005-1 M					20 x 05 (test system)
FR 266a-1005-1 G	**Mosaic Dengue virus**	IgG PI	4 BIOCHIPs per field:		10 x 05 (test system)
FR 266a-1010-1 G	**types 1 - 4 (DENV) EUROPattern**		infected cells	EU 14	10 x 10 (test system)
FR 266a-1005-1 M		IgM PI			10 x 05 (test system)
FR 266a-1010-1 M					10 x 10 (test system)
FI 2730-1005-2 G	**Mosaic Coxsackie virus A types**	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FI 2730-2005-2 G	**types A7, A9, A16, A24**		infected cells	EU 38	20 x 05 (test system)
FI 2730-2010-2 G					20 x 10 (test system)
FI 2730-1005-2 M		IgM			10 x 05 (test system)
FI 2730-2005-2 M					20 x 05 (test system)
FI 2730-2010-2 M					20 x 10 (test system)
FR 2730-2010-2 G	**Coxsackie virus screen (types A) EUROPattern**	IgG PI	4 BIOCHIPs per field:		20 x 10 (test system)
FR 2730-2010-2 M	**types A7, A9, A16, A24**	IgM PI	infected cells	EU 38	20 x 10 (test system)
FI 2730-2005-3 G	**Mosaic Coxsackie virus B types**	IgG	6 BIOCHIPs per field:		20 x 05 (test system)
FI 2730-2005-3 M	**types B1, B2, B3, B4, B5, B6**	IgM	infected cells	EU 38	20 x 05 (test system)
FR 2730-2010-3 G	**Coxsackie virus screen (types B) EUROPattern**	IgG PI	6 BIOCHIPs per field:		20 x 10 (test system)
FR 2730-2010-3 M	**types B1, B2, B3, B4, B5, B6**	IgM PI	infected cells	EU 38	20 x 10 (test system)
FI 277a-1005-1 G	**Sandfly fever virus Mosaic 1**	IgG	4 BIOCHIPs per field:		10 x 05 (test system)
FI 277a-1010-1 G	**types Sicilian, Naples,**		infected cells	EU 14	10 x 10 (test system)
FI 277a-1005-1 M	**Toscana, Cyprus**	IgM			10 x 05 (test system)
FI 277a-1010-1 M					10 x 10 (test system)
FR 277a-1005-1 G	**Sandfly fever virus Mosaic 1**	IgG PI	4 BIOCHIPs per field:		10 x 05 (test system)
FR 277a-1005-1 M	**EUROPattern**	IgM PI			10 x 05 (test system)
	types Sicilian, Naples, Toscana, Cyprus		infected cells	EU 14	
FI 278h-1005-1 G	**Hantavirus Mosaic 1**	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
FI 278h-1010-1 G	**types Hantaan (HTNV), Sin Nombre**		infected cells	EU 14	10 x 10 (test system)
FI 278h-1005-1 M	**(SNV), Puumala (PUUV),**	IgM			10 x 05 (test system)
FI 278h-1010-1 M	**Dobrava (DOBV), Seoul (SEOV), Saaremaa (SAAV)**				10 x 10 (test system)
FR 278h-1005-1 G	**Hantavirus Mosaic 1 EUROPattern**	IgG PI	6 BIOCHIPs per field:		10 x 05 (test system)
FR 278h-1005-1 M	**types Hantaan (HTNV), Sin Nombre (SNV), Puumala (PUUV), Dobrava (DOBV), Seoul (SEOV), Saaremaa (SAAV)**	IgM PI	infected cells	EU 14	10 x 05 (test system)
FI 278h-1005-2 G	**Hantavirus Mosaic 2 Eurasia**	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
FI 278h-1010-2 G	**types Hantaan (HTNV), Puumala**		infected and non-	EU 14	10 x 10 (test system)
FI 278h-1005-2 M	**(PUUV),**	IgM	infected cells		10 x 05 (test system)
FI 278h-1010-2 M	**Dobrava (DOBV), Seoul (SEOV), Saaremaa (SAAV)**				10 x 10 (test system)

Diagnostics for Indirect Immunofluorescence: Infectious Serology

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FI 278m-1005-3 G **FI 278m-1005-3 M**	**Hantavirus Mosaic 3: America types Sin Nombre (SNV), Andes (ANDV)**	IgG IgM	2 BIOCHIPs per field: infected cells	EU 14	10 x 05 (test system) 10 x 05 (test system)
FR 278m-1005-3 G **FR 278m-1005-3 M**	**Hantavirus Mosaic 3: America EUROPattern types Sin Nombre (SNV), Andes (ANDV)**	IgG PI IgM PI	2 BIOCHIPs per field: infected cells	EU 14	10 x 05 (test system) 10 x 05 (test system)
FI 2791-1005 G **FI 2791-1010 G** **FI 2791-2010 G** **FI 2791-1005 M** **FI 2791-1010 M** **FI 2791-2005 M**	**Epstein-Barr virus capsid antigen (EBV-CA)**	IgG EB IgM EB	expressing cells	P3HR1	10 x 05 (test system) 10 x 10 (test system) 20 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system) 20 x 05 (test system)
FR 2791-1005 G **FR 2791-1010 G** **FR 2791-2010 G** **FR 2791-1010 M**	**Epstein-Barr virus capsid antigen (EBV-CA) EUROPattern Anti-EBV-CA IIFT EUROPattern (IgM)**	IgG PI IgM PI	expressing cells	P3HR1	10 x 05 (test system) 10 x 10 (test system) 20 x 10 (test system) 10 x 10 (test system)
FI 2793-1010 C	**Epstein-Barr virus nuclear antigen (EBNA, complement-fixing antibodies)**	C3c EB	expressing cells	Raji	10 x 10 (test system)
FR 2793-1010 C	**Epstein-Barr virus nuclear antigen (EBNA) EUROPattern**	C3c PI	expressing cells	Raji	10 x 10 (test system)
FI 2795-1005 G **FI 2795-1010 G**	**Epstein-Barr virus early antigen (EBV-EA)**	IgG EB	expressing cells	EU 33	10 x 05 (test system) 10 x 10 (test system)
FR 2795-1005 G **FR 2795-1010 G**	**Epstein-Barr virus early antigen (EBV-EA) EUROPattern**	IgG PI	expressing cells	EU 33	10 x 05 (test system) 10 x 10 (test system)
FI 2799-1001-1 X **FI 2799-1002-1 X** **FI 2799-2001-1 X** **FI 2799-2002-1 X**	**BIOCHIP Sequence EBV fields A and B: EBV-CA (IgG) field C: EBV-CA (IgM) field D: EBV-EA field E: EBNA format 1001: per slide one patient format 1002: per slide two patients**	avidity test	 expressing cells expressing cells expressing cells expressing cells	 P3HR1 P3HR1 EU 33 Raji	10 x 01 (test system) 10 x 02 (test system) 20 x 01 (test system) 20 x 02 (test system)
FI 2799-1001-21 X **FI 2799-1002-21 X** **FI 2799-2001-21 X** **FI 2799-2002-21 X**	**EUROPLUS BIOCHIP Sequence EBV field A: EBV-CA (IgG), gp125 ag, p19 ag field B: EBV-CA (IgG) field C: EBV-CA (IgM), gp125 ag, p19 ag field D: EBV-EA field E: EBNA format 1001: per slide one patient format 1002: per slide two patients**	avidity test	 expr. cells, gp125/p19/ ag-free BIOCHIP expressing cells expressing cells expr. cells, gp125/p19/ ag-free BIOCHIP expressing cells	 P3HR1, native/rec. EU 120 P3HR1 P3HR1, native/rec. EU 120 EU 33 Raji	10 x 01 (test system) 10 x 02 (test system) 20 x 01 (test system) 20 x 02 (test system)
FI 279a-1005-2 G **FI 279a-1010-2 G** **FI 279a-2010-2 G** **FI 279a-1005-2 M** **FI 279a-1010-2 M** **FI 279a-2010-2 M**	**Crimean Congo fever virus Mosaic 2 CCHFV-GPC CCHFV-N**	IgG EB IgM EB	3 BIOCHIPs per field: transfected cells transfected cells control transfection	 EU 90 EU 90 EU 90	10 x 05 (test system) 10 x 10 (test system) 20 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system) 20 x 10 (test system)
FI 280a-1005 G **FI 280a-1010 G** **FI 280a-1005 M** **FI 280a-1010 M**	**Rift Valley fever virus (RVFV)**	IgG IgM	infected and non-infected cells (2 BIOCHIPs per field)	EU 14	10 x 05 (test system) 10 x 10 (test system) 10 x 05 (test system) 10 x 10 (test system)

Diagnostics for Indirect Immunofluorescence: Infectious Serology

Order No.	Antibodies against	Ig Class	Substrate	Species	Format Slides x Fields
FI 291a-1005 G *	**Sindbis virus (SINV)**	IgG	infected and non-	EU 14	10 x 05 (test system)
FI 291a-1010 G *			infected cells		10 x 10 (test system)
FI 291a-1005 M *		IgM	(2 BIOCHIPs per field)		10 x 05 (test system)
FI 291a-1010 M *					10 x 10 (test system)
FI 293a-1005 G	**Chikungunya virus (CHIKV)**	IgG	infected and non-	EU 14	10 x 05 (test system)
FI 293a-1010 G			infected cells		10 x 10 (test system)
FI 293a-2005 G			(2 BIOCHIPs per field)		20 x 05 (test system)
FI 293a-1005 M		IgM			10 x 05 (test system)
FI 293a-1010 M					10 x 10 (test system)
FI 293a-2005 M					20 x 05 (test system)
FR 293a-1005 G	**Chikungunya virus (CHIKV) EUROPattern**	IgG PI	infected and non-	EU 14	10 x 05 (test system)
FR 293a-1010 G			infected cells		10 x 10 (test system)
FR 293a-1005 M		IgM PI	(2 BIOCHIPs per field)		10 x 05 (test system)
FR 293a-1010 M					10 x 10 (test system)
FI 293a-1005-1 G	**Arbovirus Fever Mosaic 1**	IgG	6 BIOCHIPs per field:		10 x 05 (test system)
FI 293a-1010-1 G	**Chikungunya virus (CHIKV)**		infected cells	EU 14	10 x 10 (test system)
FI 293a-1005-1 M	**Japanese encephalitis virus (JEV)**	IgM	infected cells	EU 14	10 x 05 (test system)
FI 293a-1010-1 M	**Dengue virus types 1 - 4 (DENV)**		infected cells	EU 14	10 x 10 (test system)

Infection diagnostics

* For research use only, not for in vitro diagnostic use in the sense of EU directive 98/79/EC.
For individual test kit controls please contact your respective sales representative.

Allergy diagnostics

Specific IgE

Inhalation · Food · Atopy · Anti-CCD absorbent

For more information on this subject scan the QR code or enter the Quick Link code q002 at www.euroimmun.com

Inhalation

Clinical information: In the case of inhalation allergies, the allergens enter the body through the air and through the mucous membranes, leading to measurable IgE concentrations against a specific allergen source. Seasonal allergens (pollen from trees, grasses and herbs) play a role, as do also indoor allergens (house dust mites, domestic animals and mould spores) which occur the whole year round. The symptoms generally occur shortly after contact with the allergen. These allergies are therefore called immediate type reactions, which can be found in more than 15% of the population in industrialised countries. If a systemic allergic reaction occurs, serious, even life-threatening reactions can result (anaphylactic shock). Typical allergic reactions are rhinitis, conjunctivitis and allergic asthma. Allergic rhinitis is increasing worldwide, with a prevalence of 10 to 40% in various regions.

Diagnostics: A confirmed allergy diagnosis demands an extensive patient anamnesis and various diagnostic methods (in vivo and in vitro tests), depending on the patient's clinical symptoms. In vitro diagnostics are based on the detection of total and specific IgE (sIgE) in serum or plasma. In individual cases, provocation tests can be additionally performed to help with the diagnosis. The results of the various diagnostic methods are of equal value and complement each other. All individual results must always be interpreted within the context of the anamnesis and the clinical findings.

Various **inhalation profiles** (EUROLINE) are available for the clarification of inhalation allergies. Depending on the test system, these permit semi-quantitative or quantitative in vitro determination of human IgE antibodies against the most frequent inhalation allergens in serum or plasma. Moreover, **country-specific inhalation profiles** are available, which offer different allergen compositions optimised with regard to regional relevance.

In addition, the total IgE concentration in the serum can be determined using the Total IgE ELISA to allow differentiation between allergic and intrinsic asthma, between allergic and vasomotor rhinitis and between atopic and seborrhoeic dermatitis.

Product overview

Method	Substrate	Application	Order number	Page
EUROLINE*	Inhalation (g1, g3, g6, g12, t2, t3, t4, t7, w1, w6, w9, d1, d2, e1, e2, e3, m1, m2, m3, m6, CCD)	Efficient screening for sIgE against the most important inhalation allergens	DP 3110-1601 E	233
	Paediatric Inhalation (g6, g12, t2, t3, t4, w6, w8, w9, d1, d2, e1, e2, e3, e6, e82, e84, m1, m2, m3, m6, CCD)	Efficient screening for sIgE against inhalation allergens relevant in childhood	DP 3111-1601 E	233
ELISA	Total IgE	ELISA for quantitative determination of human IgE in serum	EV 3840-9601 E	146

* Further profiles from page 233

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 239).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q074 at www.euroimmun.com

Specific IgE

Inhalation · Food · Atopy · Anti-CCD absorbent

For more information on this subject scan the QR code or enter the Quick Link code q003 at www.euroimmun.com

Food

Clinical information: In food allergies, the IgE-induced immune reaction can lead to symptoms such as burning or itching in the oral cavity, nausea, gastrointestinal spasms, diarrhoea and skin rashes within a short period after ingesting the food. Severe reactions can also result in asthma attacks, breathlessness, increased heart rate or in panic attacks and confusion. In rare cases, an anaphylactic shock can occur. Foods that most frequently cause allergic reactions include nuts and peanuts, soy, wheat, fish, milk and eggs. With a prevalence of 5 to 10%, primary allergic sensitisations to foods play an important role, particularly in babies and infants. Food allergies in adults occur with a prevalence of 1 to 5%.

Diagnostics: Various food allergy profiles (EUROLINE) are available for the clarification of food allergies. These enable semi-quantitative in vitro determination of human IgE antibodies against the most frequent food allergens in serum or plasma. Moreover, country-specific food allergy profiles are available which have been developed with regard to the regional eating habits.

In addition, the total IgE concentration in the serum can be determined using the Total IgE ELISA.

Product overview

Method	Substrate	Application	Order number	Page
EUROLINE*	Food (f1, f75, f2, f45, f4, f5, f9, f13, f14, f17, f20, f49, f84, f237, f25, f31, f35, f85, f3, f23, CCD)	Efficient screening for IgE antibodies against the most important food allergens	DP 3410-1601 E	234
	Food "Gulf" (f1, f75, f2, f105, f4, f14, f45, fs36, f13, f92, f33, f44, f93, f25, f31, f48, f83, f88, f3, f23, CCD)	Efficient screening for sIgE against the relevant regional food allergens	DP 3416-1601 E	235
	Food "Turkey 1" (f1, f75, f2, f169, f78, f4, f79, f9, f14, f10, f13, f17, f144, u87, f222, f73, f33, f44, f49, f92, f84, f146, f328, f25, f31, f35, f48, f95, f97, f122, f132, fs14, fs10, fs43, f83, CCD)		DP 3420-1601-11 E	235
ELISA	Total IgE	ELISA for quantitative determination of human IgE in serum	EV 3840-9601 E	146

* Further profiles from page 233

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 239).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q081 at www.euroimmun.com

Specific IgE

Inhalation · Food · Atopy · Anti-CCD absorbent

For more information on this subject scan the QR code or enter the Quick Link code q001 at www.euroimmun.com

Atopy

Clinical information: Atopy is a genetic predisposition to allergic hypersensitivity reactions which can have various clinical manifestations. The allergens responsible for the reaction enter the body either through the air and the mucous membranes (in the case of inhalation allergies), or through food ingestion (in the case of food allergies). However, allergic reactions to foods of plant origin can also be caused by cross-reacting IgE antibodies. These reactions, termed cross-allergies, are based on the structural similarity between proteins which are present in both the food as well as in the corresponding inhalation allergens of plant origin. An example of this is the phenomenon known as "oral allergy syndrome" (OAS). Accordingly, patients with a primary birch pollen allergy can also develop allergic reactions to apple, celery, hazelnut, potato or kiwi. Multiple sensitisations to allergens of different origin are therefore not uncommon.

Diagnostics: Various **atopy profiles** (EUROLINE) are available for the clarification of multiple sensitisations. These permit the simultaneous in vitro determination of human IgE antibodies against the most frequent inhalation and food allergens in serum or plasma. Moreover, **country-specific profiles** are available which take into account the characteristics of the regional allergen exposure.

In addition, the total IgE concentration in the serum can be determined using the Total IgE ELISA.

Product overview

Method	Substrate	Application	Order number	Page
EUROLINE*	Atopy (g6, g12, t3, w6, d1, e1, e2, e3, m2, m6, f1, f2, f3, f4, f9, f14, f17, f31, f35, f49, CCD)	Efficient screening for sIgE antibodies against the most important inhalation and food allergens	DP 3710-1601 E	237
	Paediatrics (gx, t3, w6, d1, d2, e1, e2, e3, m2, m3, m6, f1, f75, f2, f3, f76, f77, f78, e204, f4, f9, f14, f13, f17, f31, f35, f49, CCD)	Efficient screening for sIgE against inhalation and food allergens relevant in childhood	DP 3712-1601 E	237
ELISA	Total IgE	ELISA for quantitative determination of human IgE in serum	EV 3840-9601 E	146

* Further profiles from page 233

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 239).

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Specific IgE

Inhalation · Food · Atopy · Anti-CCD absorbent

For more information on this subject scan the QR code or enter the Quick Link code q161 at www.euroimmun.com

Anti-CCD absorbent

Background: Anti-CCD absorbent is an additional reagent designed for the incubation with blot-based allergy profiles. The absorbent eliminates anti-CCD IgE antibodies from patient serum, which increases the specificity of test results if these antibodies are present in the sample.

Anti-CCD IgE antibodies are directed against sugar structures on proteins and can be detected in around 25% of allergy patients as well as in non-allergic individuals. They generally have no clinical relevance.

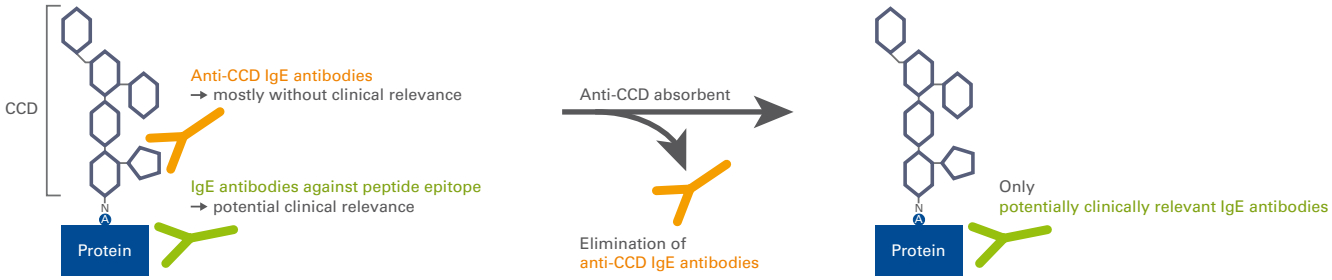
In extract-based in vitro allergy diagnostics, these antibodies complicate the interpretation of positive results because the following cases cannot be differentiated:

- positive reaction caused by IgE antibodies against peptide epitopes
- positive reaction caused by anti-CCD IgE antibodies
- positive reaction caused by a combination of the two antibody types

Differentiation between the described reactions is possible if the absorbent is used and the anti-CCD IgE antibodies are eliminated.

Indication: The anti-CCD absorbent is useful if the patient sample demonstrably contains IgE antibodies against CCD structures. This is indicated by a positive CCD band on the incubated allergy profile. In this case, the serum should be retested using the anti-CCD absorbent.

Test principle: The patient sample is incubated with anti-CCD absorbent for 60 minutes at room temperature according to the instructions provided with the reagent. Afterwards, the sample can be tested directly using the desired allergy profiles.



Product overview

Method	Substrate	Application	Order number	Page
EUROLINE	Anti-CCD absorbent	Increases the specificity of test results in allergy profiles, if the patient sample contains anti-CCD IgE antibodies	ZD 3001_0101 ZD 3001_0401	306

Molecular allergy diagnostics

DPA-Dx (Defined partial allergen diagnostics) · Insect venoms

For more information on this subject scan the QR code or enter the Quick Link code q039 at www.euroimmun.com

DPA-Dx (Defined partial allergen diagnostics)

Indication: Allergy sufferers frequently exhibit specific IgE antibodies to various allergen sources. Such multiple sensitisation patterns are often caused by **cross-reactions** of IgE antibodies against single, structurally similar proteins (components) from the allergen sources.
In defined partial allergen diagnostics (DPA-Dx), in contrast to classic extract-based allergy diagnostics, single purified allergen components are used. This approach allows identification of the components responsible for the sensitisation and enables, for example:

– Assessment of the risk of a severe systemic reaction to the allergen

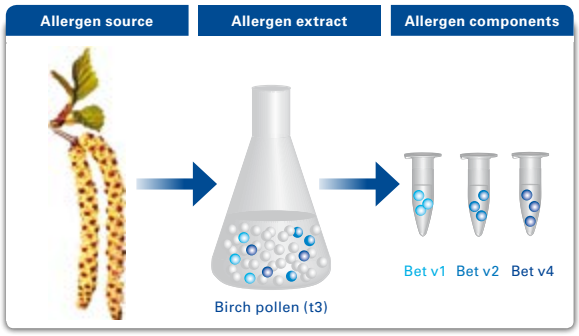
– Differentiation of a primary sensitisation from cross-reactivity. In the latter the patient should be advised about the allergen sources that could trigger a reaction.

– Selection of a specific immunotherapy (SIT) for the patient

– Evaluation of the likelihood of tolerance induction

Diagnostics: Use of DPA-Dx systems is especially relevant for the differential diagnosis of inhalation, food and insect venom allergies.

Inhalation allergy: In allergy patients with multiple pollen sensitisations, DPA-Dx offers the possibility to differentiate between primary and cross sensitisations. This differentiation delivers important information for the targeted selection of suitable immunotherapy. For the analysis of multiple pollen sensitisations, allergen components of birch (Bet v 1 (t215), Bet v 2 (t216), Bet v 4 (t220) and Bet v 6 (t225)) and grasses (Phl p 1 (g205), Phl p 5 (g215), Phl p 7 (g210) and Phl p 12 (g212)) have been defined as markers for primary or cross sensitisation.



Food allergy: In the area of food allergies, allergen components allow assessment of the risk of a severe reaction and evaluation of the possible development of tolerance. Moreover, primary allergies can be differentiated from pollen-associated food allergies. This allows a targeted statement concerning therapy and food elimination.

Insect venom allergy: 50 % of insect venom allergy sufferers show a double sensitisation to bee and wasp venom in extract-based allergy diagnostics. In these cases it is necessary to determine if the patient has a genuine primary sensitisation to both venoms or if the result is due to cross-reactivity. The use of species-specific components in DPA-Dx provides diagnostic clarification, enabling selection of a suitable immunotherapy.

Product overview

Method	Substrate	Application	Order number	Page
EUROLINE*	DPA-Dx Pollen 1 (t3, g6, t215, t216, t220, t225, g205, g215, g210, g212, CCD)	Component-resolved differential diagnostics for multiple pollen sensitisations (birch, timothy grass)	DP 3210-1601-1 E	233
	DPA-Dx Paediatrics 1 (f427, f424, f423, f422, f356, f323, f233, f232, e204, f334, f78, f77, f76, t215, CCD)	Component-resolved differential diagnostics for food allergies (milk, egg, peanut) in infants	DP 3812-1601-1 E	238
	DPA-Dx Peanut 1 (t215, f422, f423, f424, f427, f429, f444, f445, CCD)	Component-resolved differential diagnostics for peanut allergies	DP 3511-1601-1 E	236
	DPA-Dx Insect Venoms 2 (i1, i208, i211, i213, i216, i3, i209, CCD)	Component-resolved differential diagnostics for insect venom allergies	DP 3850-1601-2 E	238

* Further profiles from page 233

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 239).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g079 at www.euroimmun.com

Molecular allergy diagnostics

DPA-Dx (Defined partial allergen diagnostics) · Insect venoms

For more information on this subject scan the QR code or enter the Quick Link code q028 at www.euroimmun.com

Insect venoms

Clinical information: Localised pain, swelling, itching and redness occur as normal reactions to an insect bite. However, insect venoms can also cause allergic reactions which manifest within minutes or not until hours later. The faster the symptoms occur, the more severe the allergic reaction. With further insect bites, the symptoms can continuously worsen.

According to estimations, around 1 to 7% of the population in Central Europe react to insect venoms. In persons who are allergic to insect venoms, severe systemic reactions can occur, which manifest with the formation of urtica, swelling, itching and redness at sites other than the puncture, swelling of the throat and tongue, difficulty in breathing, nausea, gastrointestinal cramps, diarrhoea, neurological deficiencies with confusion, dizziness and gait disorder, as well as raised pulse and fall in blood pressure. In the worst case, the reaction leads to a life-threatening anaphylactic shock.

Diagnostics: In suspected cases of insect venom allergy, differential diagnostics is recommended for exact identification of the allergy-inducing species. Specific IgE antibodies against bee and wasp venom, as the most common insect venoms, can be detected with the help of multiparameter tests. Besides the previously used natural **insect venom extracts**, recombinant **species-specific allergy components** (defined partial allergen diagnostics, DPA-Dx) are also available for a refined serological diagnosis. Using the EUROLINE DPA-Dx Insect Venoms 2, antibodies against the natural insect venom extracts and against specific molecular antigens for bee and wasp venom (rApi m1, rApi m2, rApi m10, rVes v1 and rVes v5), as well as against CCD (cross-reactive carbohydrate determinant) as a marker for cross-reactivity between the insect venoms can be determined simultaneously in one process. The detection of a primary sensitisation to bee or wasp venom, or of a genuine double sensitisation with comparison to a cross-reaction is made with this test.

In addition, the total IgE concentration in the serum can be determined using the Total IgE ELISA.

Product overview

Method	Substrate	Application	Order number	Page
EUROLINE*	Insect Venoms (i1, i3, CCD)	Extract-based differentiation of bee and wasp venom allergies	DP 3720-1601 E	237
	DPA-Dx Insect Venoms 2 (i1, i208, i211, i213, i216, i3, i209, CCD)	Component-resolved differential diagnostics for insect venom allergies	DP 3850-1601-2 E	238
ELISA	Total IgE	ELISA for quantitative determination of human IgE in serum	EV 3840-9601 E	146

* Further profiles from page 233

In addition to EUROIMMUN products, you will also find innovative test systems from Immunodiagnostic Systems ids for this indication in the following product lists (page 239).

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q075 at www.euroimmun.com

Products for allergy diagnostics

Format

- 0501: 5 slides to be incubated with 1 patient serum each
- 0502: 5 slides to be incubated with 2 patient sera each
- 1001: 10 slides to be incubated with 1 patient serum each
- 1601: 16 single test strips

DP 3210 - 1601 -1 E

Immunoglobulin class

E: IgE

Product code

Product classification

- DE: Test system EUROASSAY (allergy diagnostics) ..... page 232
- DP: Test system EUROLINE (allergy diagnostics) ..... page 233
- Test system ids chemiluminescence test (allergy diagnostics) ..... page 239
- Control set ids chemiluminescence test (allergy diagnostics) ..... page 241

For product orders the amount, product code and test name are required. **Test kits** comprise all reagents needed to perform the serological investigation.

Test systems which do not appear in this catalogue can be made to specification. Apart from the customary package sizes and slide formats, special sizes are available as well. Quotations can be provided upon request.

EUROASSAY for Allergy Diagnostics (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DE 3110-1001 E	**inhalation (g1, g3, g6, g12, t2, t3, t4, t7, w1, w8, w6, w9, d1, d2, es4, e2, e3, e6, e1, e82, e84, m1, m2, m3, m6, CCD)**	IgE	EUROASSAY strip with allergens	10 x 01
DE 3110-1001-2 E	**inhalation 2 (t3, t4, t15, t2, gx2, g12, d1, w6, w1, d2, e1, e2, m6, m2, t7, t11, t23, g6, i6, d70, w21, w9, d71, e3, u85, d72, m3, m1, CCD)**	IgE	EUROASSAY strip with allergens	10 x 01
DE 3210-0501-1 E	**DPA-Dx pollen 1 (t3, g6, t215, t216, t220, t225, g205, g215, g210, g212, CCD)**	IgE	EUROASSAY strip with allergens	05 x 01
DE 3410-1001 E	**food (f1, f75, f2, f78, f45, f4, f5, f9, f14, f10, f13, f17, f20, f84, f95, f237, f25, f31, f35, f85, f3, f23, f49, CCD)**	IgE	EUROASSAY strip with allergens	10 x 01
DE 3410-1001-2 E	**food 2 (f47, f26, f75, f90, f10, f78, f89, u87, f35, f95, f329, f84, f24, f20, f1, f13, f5, f2, f14, f4, f25, f85, f31, f33, f92, f49, f17, f3, CCD)**	IgE	EUROASSAY strip with allergens	10 x 01
DE 3712-1001 E	**pediatrics/atopy (g6, g12, t3, w6, d1, d2, e1, e2, e3, m2, m3, m6, f1, f75, f3, f2, f76, f77, f78, e204, f4, f9, f14, f13, f17, f31, f35, f49, CCD)**	IgE	EUROASSAY strip with allergens	10 x 01
DE 3712-1001-2 E	**pediatrics/atopy 2 (t3, t4, t15, t2, gx2, g12, d1, w6, w1, d2, e1, e2, m6, m2, f1, f13, f5, f2, f14, f4, f25, f85, f31, f33, f92, f49, f17, f3, CCD)**	IgE	EUROASSAY strip with allergens	10 x 01
DE 3812-1001-1 E	**DPA-Dx pediatrics 1 (t215, f76, f77, f78, f334, e204, f232, f233, f323, f356, f422, f423, f424, f427, CCD)**	IgE	EUROASSAY strip with allergens	10 x 01
DE 3850-0501-3 E	**DPA-Dx insect venoms 3 (i1, i3, i75, i208, i213, i216, i209, i211, CCD)**	IgE	EUROASSAY strip with allergens	05 x 01

EUROLINE for Allergy Diagnostics (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DP 3110-1601 E DP 3110-6401 E DP 3110-1601 SE DP 3110-6401 SE	**inhalation (g1, g3, g6, g12, t2, t3, t4, t7, w1, w6, w9, d1, d2, e1, e2, e3, m1, m2, m3, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01 64 x 01 16 x 01 64 x 01
DP 3110-1601-1 E	**inhalation 2 (g6, g12, t2, t3, t4, w6, w9, d1, d2, e1, e2, e3, e6, e82, e84, es4, m1, m2, m3, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3110-1601-3 E	**inhalation 3 (t3, t4, t7, t9, t11, t15, t23, g2, g3, g6, g8, g12, g101, u85, w1, w6, w9, w21, e1, e5, e3, e82, m3, m5, m6, i6, d1, d2, d70, d201, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3111-1601 E	**pediatric inhalation (g6, g12, t2, t3, t4, w6, w8, w9, d1, d2, e1, e2, e3, e6, e82, e84, m1, m2, m3, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3112-1601 E	**Mediterranean inhalation (g2, g6, t3, t4, t9, t11, t23, t210, w1, w6, w9, w19, d1, d2, d70, e1, e2, e3, m2, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3112-1601-2 E	**Mediterranean inhalation 2 (d1, d2, d70, d71, d201, e1, e2, e3, m2, m3, m6, i6, g2, g3, g5, g6, g8, g12, t2, t3, t4, t9, t11, t23, w1, w6, w9, w10, w11, w19, w21, u85, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3113-1601 E	**inhalation "South East Asia" (ts19, t19, t223, u85, gs1, ds1, i6, u134, e1, e2, es172, e6, e71, e82, e84, ms1, ms4, m5, m12, m45, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3116-1601-2 E	**inhalation "China 2" (ds1, h1, i6, e1, e2, ms1, ts20, u80, w1, w6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3118-1601 E	**inhalation "Gulf" (g6, g12, t2, t3, t7, t9, w1, w6, d1, d2, i6, e1, e2, e3, e17, m1, m2, m3, m5, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3119-1601-11 E	**inhalation "Turkey 1" (gs12, gs15, gs21, g12, ts23, ts24, t9, t70, ws18, ws19, ws20, d1, d2, i6, es2, es172, e1, e2, e3, e4, e80, e81, e84, ms11, ms12, m1, m2, m3, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3120-1601 E	**inhalation "India" (g6, g12, g20, t18, w4, w27, w29, ds1, d2, i6, e1, e2, e11, e85, m3, m37, u81, u126, u129, u140, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3120-1601-2 E	**inhalation "India 2" (g2, g6, g10, g12, g20, t18, t20, w6, w10, w13, w14, w27, w29, ds1, d2, i6, m1, m2, m3, m4, m5, m6, m11, m16, m37, e1, e2, e11, e85, u81, u126, u129, u140, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3122-1601-2 E	**inhalation "France 2" (t3, t7, t9, t11, t23, t15, g6, g2, g101, g8, g12, w9, w6, w21, w1, e1, e5, e82, m3, m6, i6, d1, d2, d70, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3123-1601-2 E	**inhalation "Lebanon 2" (g6, g2, g12, g101, w7, w19, w21, ws24, t2, t3, t7, t9, t16, t23, ts32, m1, m2, m3, m5, m6, d1, d2, e1, e2, e3, e85, es170, es172, u85, u140, i1, i3, i6, i71, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3124-1601 E	**inhalation "Screen South Africa" (ts19, ts29, gs1, ws21, e1, e2, hs12, ms1, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01

EUROLINE for Allergy Diagnostics (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DP 3126-1601 E	**inhalation "Mexico"** **(g2, g5, g6, g10, g14, t3, t7, t19, t210, t20, t14, t15, w1, w4, w6, w8, w10, w11, w14, w15, w100, d1, d2, h1, i6, e1, e2, es4, m1, m2, m3, m6, m20, m5, m11, m14, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3127-1601-1 E	**inhalation "Ukraine 1"** **(d1, d2, e1, e2, e3, e6, e82, e84, t2, t3, t4, t7, g6, g12, w6, w9, m1, m2, m3, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3128-1601 E	**inhalation trees** **(t1, t2, t3, t4, t5, t7, t15, t12, t14, t16, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3129-1601 E	**inhalation grass and weeds** **(g1, g3, g6, g12, w1, w6, w9, w10, w103, w203, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3130-1601 E	**inhalation animals** **(e1, e2, e3, e6, e71, e73, e82, e84, es7, es172, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3131-1601 E	**inhalation indoor allergens** **(ds1, es2, i6, e7, m1, m2, m3, m5, m6, m37, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3132-1601 E	**inhalation "Maghreb"** **(g2, g3, g6, g8, g12, t3, t5, t7, t9, t11, t15, t18, t19, t23, w1, w4, w6, w7, w9, w10, w21, d1, d2, i6, e1, e2, e3, m3, m5, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3133-1601-1 E	**inhalation "Iran 1"** **(e1, e2, e3, e4, e81, es2, es172, g1, g3, g12, g14, g16, w6, w9, w10, w11, w14, w17, w28, w100, t1, t15, t16, t70, ts22, ts26, i1, i6, h1, d1, d2, m1, m2, m3, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3135-1601-1 E	**inhalation "Venezuela 1"** **(g2, g5, g10, w6, w8, w9, w14, e1, e2, e78, e85, e86, e111, u85, m1, m2, m3, m5, m6, d1, d2, d201, i1, i2, i3, i4, i70, i71, i100, p1, p2, p4, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3138-1601-1 E	**inhalation "Iraq 1"** **(e1, e2, e3, e4, e81, es2, es172, g1, g3, g12, g14, g16, w6, w9, w10, w11, w14, w17, w28, w100, t1, t15, t16, t70, ts22, ts26, i1, i6, h1, d1, d2, m1, m2, m3, m6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3139-1601-1 E	**inhalation "Central Africa 1"** **(d1, d2, d70, d201, e1, e2, e7, e80, m1, m2, m3, m5, m6, i6, u85, u140, g2, g6, w1, t102, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3210-1601-1 E	**DPA-Dx pollen 1** **(t3, g6, t215, t216, t220, t225, g205, g215, g210, g212, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3211-1601-1 E	**DPA-Dx pollen "Southern Europe 1"** **(t3, t9, t23, g6, w21, m6, t215, t226, w211, g205, g215, g210, g212, t224, t231, t235, m229, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3410-1601 E DP 3410-6401 E DP 3410-1601 SE DP 3410-6401 SE	**food** **(f1, f75, f2, f45, f4, f5, f9, f13, f14, f17, f20, f49, f84, f237, f25, f31, f35, f85, f3, f23, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01 64 x 01 16 x 01 64 x 01
DP 3410-1601-1 E	**food 2** **(f1, f75, f2, f78, f4, f5, f14, f10, f13, f17, f20, f49, f84, f95, f25, f31, f35, f85, f3, f23, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01

EUROLINE for Allergy Diagnostics (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DP 3410-1601-3 E	food 3 (f13, f17, f20, f158, f12, f14, f89, f96, f25, f47, f48, f85, f49, f84, f92, f95, f26, f27, f83, f3, f23, f24, f40, f4, f8, f9, f10, f45, f2, f78, f218, f1, f75, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3411-1601 E	food "South East Asia 1" (f1, f75, f2, f4, f9, f10, f14, f13, f17, f63, f64, f83, fs10, fs14, f23, f24, f80, f234, f105, f336, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3414-1601-2 E	food "China 2" (f1, f2, f13, f14, f23, f24, fs33, fs34, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3415-1601-2 E	food "Middle East 2" (f2, f169, f245, f233, f13, f17, f20, f144, f253, f256, f10, f361, f36, f9, f4, f292, fs82, fs83, fs43, f83, f12, f14, f132, f159, fx20, f33, f49, f92, f97, f237, fs48, f50, f72, f93, f96, f191, f329, f25, f35, f38, f47, f244, f262, fx15, fs77, fs78, f273, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3416-1601 E	food "Gulf" (f1, f75, f2, f105, f4, f14, f45, fs36, f13, f92, f33, f44, f93, f25, f31, f48, f83, f88, f3, f23, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3420-1601-11 E	food "Turkey 1" (f1, f75, f2, f169, f78, f4, f79, f9, f14, f10, f13, f17, f144, u87, f222, f73, f33, f44, f49, f92, f84, f146, f328, f25, f31, f35, f48, f95, f97, f122, f132, fs14, fs10, fs43, f83, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3421-1601 E	food "India" (f2, f75, f168, f4, f9, f14, f13, f36, f49, f50, f35, f38, f48, f244, f83, f89, f74, f240, f23, f24, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3421-1601-2 E	food "India 2" (f1, f75, f2, f168, f360, f4, f79, f7, f9, f14, f13, f33, f36, f49, f50, f12, f25, f35, f38, f47, f48, f159, f212, f244, f262, f370, f364, f367, f27, f83, f88, f89, f74, f105, f240, fs81, f3, f23, f24, f371, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3422-1601-2 E	food "France 2" (f20, f17, f25, f12, f13, f14, f85, f92, f96, f49, f84, f89, f27, f26, f24, f23, f40, f3, f45, f10, f4, f2, f75, f1, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3423-1601-3 E	food "Lebanon 3" (f23, f24, f40, f41, fs79, f45, f1, f2, f76, f77, f78, f334, e204, f4, f9, f10, f12, f13, f14, f20, fs39, f44, f49, f84, f95, fs80, f25, f31, f35, f47, f48, f86, f96, f159, f292, f273, fs78, f27, f83, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3424-1601 E	food "Screen South Africa" (f1, f2, f4, f13, f14, fs36, f3, fs12, fs58, fs53, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3425-1601 E	food "Mexico" (f1, f75, f2, f78, f95, f96, f44, fs32, f4, f7, f9, f45, f13, f14, f20, fs35, f12, f15, f49, f292, f25, f31, f35, f92, f216, f191, f263, f105, f284, f83, f26, f27, fs27, f24, f40, fs12, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3426-1601-2 E	food "Ukraine 2" (f4, f6, f9, f11, f13, f361, f45, f47, f73, f81, fs32, f25, f35, f26, f27, f83, f3, f40, f41, f206, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3427-1601 E	food dairy products and nuts (f1, f2, f75, f78, f13, f256, f17, f20, f73, f336, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3428-1601 E	food flour and meat (f4, f5, f7, f9, f26, f27, f83, f79, f3, f24, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3429-1601 E	food vegetables (f10, f14, f86, f25, f31, f35, f85, f46, f244, f292, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01

EUROLINE for Allergy Diagnostics (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DP 3430-1601 E	food fruits (f44, f49, f84, f92, f95, f97, f122, f237, f329, fs32, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3431-1601 E	food "Maghreb" (f1, f75, f2, f78, f4, f9, f10, f12, f13, f14, f17, f20, f33, f44, f49, f92, f25, f35, f47, f48, f85, f45, f73, f27, f83, f3, f40, f41, f23, f24, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3432-1601-1 E	food "Iran 1" (f1, f75, f2, f78, f4, f5, f9, fs13, f10, f13, f14, f17, f20, f144, f256, f79, f44, f49, f50, f84, f92, f93, f95, f97, f87, fs32, f25, f35, f46, f47, f85, f262, f83, fs28, f24, fs12, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3433-1601-1 E	food "Venezuela 1" (f1, f232, f233, f75, f2, f76, f77, f78, f105, f4, f5, f6, f7, f9, f14, f292, f79, f13, f17, f20, f256, f3, f24, f37, f40, f41, f308, f155, f45, f25, f31, f35, f32, f33, f44, f49, f72, f92, f26, f27, f83, f81, f205, f218, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3436-1601-1 E	food "Iraq 1" (f1, f75, f2, f78, f4, f5, f9, fs13, f10, f13, f14, f17, f20, f144, f256, f79, f44, f49, f50, f84, f92, f93, f95, f97, f87, fs32, f25, f35, f46, f47, f85, f262, f83, fs28, f24, fs12, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3439-1601-1 E	food "Central Africa 1" (f2, fs84, f245, f45, f83, fs43, f3, fs85, f4, f10, f13, fs86, f14, f235, fs87, f25, f35, f262, fs912, fs88, CCD)	IgE	membrane strip with allergens	16 x 01 (EUROLINE)
DP 3510-1601-1 E DP 3510-1601-1 SE	DPA-Dx milk 1 (f2, f76, f77, f78, f334, e204, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01 16 x 01
DP 3511-1601-1 E	DPA-Dx peanuts 1 (t215, f422, f423, f424, f429, f445, f444, f427, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3702-1601-1 E	atopy "Chile 1" (d1, d2, e1, e2, es2, g2, g4, g5, m2, m3, m6, t11, t14, t15, t19, w9, w100, f1, f75, f78, f2, f40, f41, fs12, f4, f9, f13, f14, f25, f33, f49, f92, f83, f96, f105, f292, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3702-1601-2 E	atopy "Chile 2" (d1, d2, e1, e2, es2, gs2, m5, i6, t1, t7, t11, t14, t19, ts30, ws23, f1, f2, f4, f6, f7, f13, f17, f36, f256, f14, f74, f105, f292, f26, f27, f83, f88, f3, f40, f41, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3703-1601-1 E	atopy "Ukraine 1" (d1, d2, e1, e2, IgE, h1, is6, m6, g6, g12, ts3, t7, w1, w6, f1, f2, f14, f95, f23, fs59, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3703-1601-2 E	atopy "Ukraine 2" (d1, d2, e1, e2, e3, g6, t3, w6, m2, m3, f1, f75, f2, f3, f4, f13, f14, f31, f35, f49, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3704-1601-1 E	atopy "Venezuela 1" (f1, f75, f3, f24, f40, f308, f4, f5, f6, f7, f9, f14, f292, f79, f13, f17, f20, f2, f76, f77, f78, f105, f218, f25, f32, f33, f44, f49, f72, f26, f27, f83, f155, f45, u85, d1, d2, d201, e1, e2, e85, m1, m2, m3, m5, m6, g2, w8, i1, i3, i70, i71, i100, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3706-1601-1 E	atopy "Caribbean 1" (g6, g12, t3, t20, w6, e1, e2, e3, d1, m2, m6, f1, f2, f79, f4, f9,f14, f13, f31, f35, f292, f49, f362, f64, f3, f24, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3707-1601-1 E	atopy "Indonesia 1" (g2, g6, gs1, t19, t223, u85, d1, d2, d4, d72, d73, d201, e1, e2, e3, e204, es2, u134, i1, i6, m5, ms1, f4, f79, f13, f14, f17, f20, f45, f336, f1, f2, f76, f77, f78, fs10, f3, f40, f41, f23, f24, f80, f157, f63, f64, f83, f88, f81, f25, f47, f44, f84, f74, f105, CCD)	IgE	membrane strip with allergens (EUROLINE)	16 x 01

EUROLINE for Allergy Diagnostics (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DP 3709-1601-1 E	**atopy "Thailand 1" (g2, g6, g10, e1, e2, e84, d1, d2, i6, i100, m2, m3, m6, u85, f1, f75, f2, f3, f23, f24, f41, f177, f234, f258, f232, f233, f76, f77, f78, f4, f79, f13, f423, f427, f14, f36, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3709-1601-2 E	**atopy "Thailand 2" (d1, d2, e1, e2, e71, e82, e84, e85, e86, u81, u85, g2, g6, g10, t18, t19, i6, i100, m1, m2, m3, m6, f1, f75, f2, f4, f10, f13, f14, f20, f158, f31, f35, f45, f336, f23, f24, f234, f40, f41, f3, f436, f324, f37, f258, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3710-1601 E	**atopy (g6, g12, t3, w6, d1, e1, e2, e3, m2, m6, f1, f2, f3, f4, f9, f14, f17, f31, f35, f49, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3710-1601-4 E	**atopy 4 (f13, f17, f12, f14, f4, f85, f96, f26, f3, f24, f1, f2, f49, f84, f95, t3, t7, t9, t11, t15, t23, g6, w1, w6, w9, w21, e1, e5, m3, m6, d1, d2, i6, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3710-1601-13 E	**Atopy: 13 (d1, d2, d4, t2, t3, t4, t15, gs2, w6, w9, e1, e2, e3, m1, m2, m3, m6, f13, f17, f20, f144, f158, f256, f4, f5, f11, f99, f10, f14, f1, f75, f2, f76, f77, f78, f3, f84, f49, f25, w1, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3712-1601 E DP 3712-6401 E DP 3712-1601 SE DP 3712-6401 SE	**pediatrics (gx, t3, w6, d1, d2, e1, e2, e3, m2, m3, m6, f1, f75, f2, f3, f76, f77, f78, e204, f4, f9, f14, f13, f17, f31, f35, f49, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01 64 x 01 16 x 01 64 x 01
DP 3713-1601 E DP 3713-6401 E	**atopy "China" (ts20, w1, w6, ds1, h1, e1, e2, i6, ms1, u80, f1, f2, f13, f14, f27, f88, fs33, f24, f23, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01 64 x 01
DP 3713-1601-5 E	**atopy "China 5" (ds1, h1, i6, e1, e2, ms1, w1, w6, f1, f2, f13, f14, f23, f24, fs33, u80, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3713-1601-7 E	**atopy "China 7" (ds1, h1, i6, e1, e2, ms1, w1, w6, f1, f2, fs33, u80, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3715-1601-3 E	**atopy "South East Asia 3" (ts20, w1, w6, ds1, h1, e1, e2, i6, ms1, u80, f1, f2, f13, f14, f27, f88, fs33, fs34, f24, f23, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3716-1601 E	**atopy "Peru" (e1, e2, e3, e7, e11, e82, e84, es172, i1, i3, i6, m1, m2, m3, m6, t18, u85, w29, w28, d1, d2, f75, f79, f1, f2, f23, f206, f13, f14, f104, f105, f26, fs32, f44, f49, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3717-1601-2 E	**"Mix France 2" (f85, f14, f13, f12, f4, f24, f3, f2, f1, f17, f49, f84, t3, t7, t9, t15, t23, g6, w9, w6, w21, w1, e1, e5, m3, m6, d1, d2, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3718-1601 E DP 3718-1601 SE	**atopy "Lithuania" (w6, w9, w103, w203, t3, t4, t11, g6, gs21, e1, e2, e3, e4, e82, es2, ds1, ms1, m5, f73, f245, f2, f81, f13, f14, f17, f256, f4, f12, f15, f44, fs32, f26, f27, f83, f49, f3, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01 16 x 01
DP 3720-1601 E	**insect venoms (i1, i3, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01

EUROLINE for Allergy Diagnostics (Test Systems)

Order No.	Antibodies against	Ig Class	Substrate	Format
DP 3790-1601 E	**atopy screen (d1, d2, i1, i3, i6, h1, e1, e2, e3, m1, m2, m3, m6, g1, g3, g6, g12, t2, t3, t4, t7, t23, w1, w6, w9, u85, f25, f31, f35, f85, f1, f75, f2, f3, f23, f24, e204, f76, f77, f78, f27, f88, f45, f4, f5, f9, f14, f10, f13, f17, f20, f49, f84, f237, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3812-1601-1 E	**DPA-Dx pediatrics 1 (t215, f76, f77, f78, f334, e204, f232, f233, f323, f356, f422, f423, f424, f427, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3812-1601-2 E	**DPA-Dx pediatrics 2 (f76, f77, f78, f334, e204, f232, f233, f323, f356, f422, f423, f424, f429, f445, f444, f427, t215, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3850-1601-2 E	**DPA-Dx insect venoms 2 (i1, i208, i213, i216, i3, i209, i211, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3850-1601-3 E	**DPA-Dx insect venoms 3 (i1, i3, i75, i208, i213, i216, i209, i211, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01
DP 3851-1601-1 E	**DPA-Dx insect venoms "Southern Europe 1" (i1, i3, i75, i77, i208, i213, i216, i210, i209, i220, i211, CCD)**	IgE	membrane strip with allergens (EUROLINE)	16 x 01

IDS Chemiluminescence Test for Allergy Diagnostics (Test Systems)

IDS Order No.	Description	Format
IS-1TIGE900	IDS Total / Specific IgE Reagent Kit	50 / 200 determinations
IS-1D001	IDS Specific IgE (D001) House dust mite	50 determinations
IS-1D002	IDS Specific IgE (D002) House dust mite	50 determinations
IS-1D202	IDS Specific IgE (D202) rDer p 1	20 determinations
IS-1D203	IDS Specific IgE (D203) rDer p 2	20 determinations
IS-1D205	IDS Specific IgE (D205) rDer p 10	20 determinations
IS-1E001	IDS Specific IgE (E001) Cat dander	50 determinations
IS-1E003	IDS Specific IgE (E003) Horse dander	50 determinations
IS-1E005	IDS Specific IgE (E005) Dog dander	50 determinations
IS-1E094	IDS Specific IgE (E094) nFel d 1	20 determinations
IS-1E101	IDS Specific IgE (E101) nCan f 1	20 determinations
IS-1F001	IDS Specific IgE (F001) Egg white	50 determinations
IS-1F002	IDS Specific IgE (F002) Cow's Milk	50 determinations
IS-1F003	IDS Specific IgE (F003) Fish (cod)	50 determinations
IS-1F013	IDS Specific IgE (F013) Peanut	50 determinations
IS-1F014	IDS Specific IgE (F014) Soybean	50 determinations
IS-1F017	IDS Specific IgE (F017) Hazelnut	50 determinations
IS-1F020	IDS Specific IgE (F020) Almond	50 determinations
IS-1F037	IDS Specific IgE (F037) Mussel	50 determinations
IS-1F075	IDS Specific IgE (F075) Egg yolk	50 determinations
IS-1F076	IDS Specific IgE (F076) Alpha-lactalbumin	50 determinations
IS-1F077	IDS Specific IgE (F077) Beta-lactoglobulin	50 determinations
IS-1F078	IDS Specific IgE (F078) Casein	50 determinations
IS-1F084	IDS Specific IgE (F084) Kiwi	50 determinations
IS-1F202	IDS Specific IgE (F202) Cashew nut	50 determinations
IS-1F203	IDS Specific IgE (F203) Pistachio	50 determinations
IS-1F233	IDS Specific IgE (F233) nGal d 1	20 determinations
IS-1F245	IDS Specific IgE (F245) Hen's Egg	50 determinations
IS-1F256	IDS Specific IgE (F256) Walnut	50 determinations
IS-1F351	IDS Specific IgE (F351) rPen a 1	20 determinations
IS-1F423	IDS Specific IgE (F423) rAra h 2	20 determinations
IS-1F427	IDS Specific IgE (F427) rAra h 9	20 determinations
IS-1F428	IDS Specific IgE (F428) rCor a 1	20 determinations
IS-1F434	IDS Specific IgE (F434) rMal d 1	20 determinations

IDS Chemiluminescence Test for Allergy Diagnostics (Test Systems)

IDS Order No.	Description	Format
IS-1G001	IDS Specific IgE (G001) Sweet vernal grass	50 determinations
IS-1G002	IDS Specific IgE (G002) Bermuda grass	50 determinations
IS-1G003	IDS Specific IgE (G003) Cocksfoot	50 determinations
IS-1G004	IDS Specific IgE (G004) Meadow fescue	50 determinations
IS-1G005	IDS Specific IgE (G005) Rye-grass	50 determinations
IS-1G006	IDS Specific IgE (G006) Timothy grass	50 determinations
IS-1G007	IDS Specific IgE (G007) Common reed	50 determinations
IS-1G008	IDS Specific IgE (G008) Meadow grass	50 determinations
IS-1G012	IDS Specific IgE (G012) Cultivated rye	50 determinations
IS-1G013	IDS Specific IgE (G013) Velvet grass	50 determinations
IS-1G014	IDS Specific IgE (G014) Cultivated oat	50 determinations
IS-1G015	IDS Specific IgE (G015) Cultivated wheat	50 determinations
IS-1G201	IDS Specific IgE (G201) Barley	50 determinations
IS-1G205	IDS Specific IgE (G205) rPhl p 1	20 determinations
IS-1G213	IDS Specific IgE (G213) rPhl p 1, rPhl p 5b	20 determinations
IS-1G215	IDS Specific IgE (G215) rPhl p 5b	20 determinations
IS-1GX03	IDS Specific IgE (GX03) Grass mix 3	50 determinations
IS-1I001	IDS Specific IgE (I001) Honey bee	50 determinations
IS-1I003	IDS Specific IgE (I003) Wasp	50 determinations
IS-1K082	IDS Specific IgE (K082) Latex	50 determinations
IS-1M003	IDS Specific IgE (M003) Aspergillus fumigatus	50 determinations
IS-1M006	IDS Specific IgE (M006) Alternaria alternata	50 determinations
IS-1M229	IDS Specific IgE (M229) rAlt a 1	20 determinations
IS-1T002	IDS Specific IgE (T002) Alder	50 determinations
IS-1T003	IDS Specific IgE (T003) Common silver birch	50 determinations
IS-1T004	IDS Specific IgE (T004) Hazel	50 determinations
IS-1T009	IDS Specific IgE (T009) Olive	50 determinations
IS-1T025	IDS Specific IgE (T025) European ash	50 determinations
IS-1T215	IDS Specific IgE (T215) rBet v 1	20 determinations
IS-1T216	IDS Specific IgE (T216) rBet v 2	20 determinations
IS-1T224	IDS Specific IgE (T224) rOle e 1	20 determinations
IS-1W001	IDS Specific IgE (W001) Common ragweed	50 determinations
IS-1W006	IDS Specific IgE (W006) Mugwort	50 determinations

IDS Chemiluminescence Test for Allergy Diagnostics (Test Systems)

IDS Order No.	Description	Format
IS-1W009	IDS Specific IgE (W009) Plantain	50 determinations
IS-1W230	IDS Specific IgE (W230) nAmb a 1	20 determinations
IS-1W231	IDS Specific IgE (W231) nArt v 1	20 determinations

IDS Control Sets for Chemiluminescence Tests

IDS Order No.	Description	Format
IS-1F003-30	IDS Positive Specific IgE Control (F003) Cod	1 concentration
IS-1G006-30	IDS Positive Specific IgE Control (G006) Timothy Grass	1 concentration
IS-1SIGE930	IDS Negative Specific IgE Control (F003/G006) Cod/Timothy Grass	1 concentration
IS-1TIGE930	IDS Total IgE Control Set	3 concentrations

Antigen detection

Neurodegenerative diseases

Beta-amyloid, tau protein · Neurofilaments

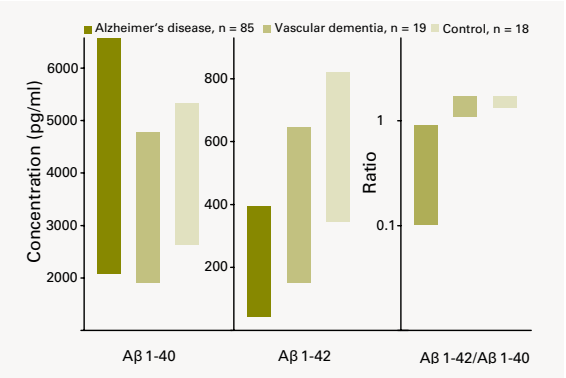
For more information on this subject scan the QR code or enter the Quick Link code q032 at www.euroimmun.com

Beta-amyloid, tau proteins

Clinical information: Alzheimer's disease, which was first described in 1906, is with 60 to 70 % the most common cause of dementia in old age. The prevalence doubles for around every five years of age – 30 % of persons over 90 suffer from this disease. In contrast to the age-dependent, sporadic form of Alzheimer's, the familial, genetically caused form can also occur in young adults from 30 years of age. The disease is divided into three consecutive phases: the preclinical stage, the MCI (mild cognitive impairment) stage and the dementia stage. In Alzheimer's disease neurofibrillary tangles accumulate in the nerve cells (in particular in the cortical and limbic brain regions). Outside of the nerve cells, deposits of beta-amyloid (Aβ) in the form of so-called **neuritic plaques** are observed. These contain predominantly the peptides beta-amyloid 1-40 (Aβ 1-40) and beta-amyloid 1-42 (Aβ 1-42). The intracellular **neurofibrillary tangles** consist of hyperphosphorylated tau proteins.

Diagnostics: Definitive diagnosis of Alzheimer's disease can only be established by brain autopsy to detect the neuropathological changes (plaques and neurofibrillary tangles). In vivo diagnosis (probable Alzheimer's disease) is based primarily on clinical identification of dementia syndrome and exclusion of possible reversible causes (e.g. endocrinopathies, vitamin deficiency diseases, chronic infections, etc.).

Clinical diagnosis is unreliable, particularly in the early disease stages, and requires additional measurable biomarkers with high diagnostic reliability. The concentrations of soluble Aβ 1-42 and phosphorylated tau protein (pTau(181)) in the **cerebrospinal fluid (CSF)** reflect the Alzheimer's-specific neuropathological changes in the brain. The CSF of persons who will later develop Alzheimer's disease exhibits a significant **decrease in the Aβ 1-42 concentration** already 5 to 10 years before the start of cognitive changes. In contrast, the **concentrations of total tau and pTau(181)** in the CSF **increase** when patients show advanced neurodegeneration and cognitive impairment. Thus, discrimination from healthy persons is possible. The **ratio Aβ 1-42 / Aβ 1-40** in CSF can, in addition, contribute to the differentiation of Alzheimer's disease from vascular dementia (see figure).



Imaging techniques such as MRT, SPECT, or PET (amyloid detection) can also be used to support early and differential diagnostics. Results from CSF-based neurochemical analyses and results from imaging procedures should only be assessed in the context of all available diagnostic information.

Product overview

Method	Analyte	Sample material	Application	Order number	Page
ELISA	Beta-amyloid (1-40)	CSF	Quantitative detection of beta-amyloid (1-40)	EQ 6511-9601-L	260
	Beta-amyloid (1-40)*	Plasma		EQ 6511-9601	260
	Beta-amyloid (1-42)	CSF	Quantitative detection of beta-amyloid (1-42)	EQ 6521-9601-L	260
	Beta-amyloid (1-42)*	Plasma		EQ 6521-9601	260
	Total tau	CSF	Quantitative detection of total tau protein	EQ 6531-9601-L	260
	Phospho tau	CSF	Specific detection of threonine 181 phos-phorylated tau protein (pTau(181))	EQ 6591-9601-L	261
	BACE-1*	CSF	Quantitative detection of BACE-1	EQ 6541-9601-L	261
	Neurogranin*	CSF	Quantitative detection of truncated neurogranin P75	EQ 6551-9601-L	261
	Alpha-synuclein*	CSF	Quantitative detection of alpha-synuclein	EQ 6545-9601-L	261
ChLIA	Beta-amyloid (1-40)	CSF	Quantitative detection of beta-amyloid (1-40)	LQ 6511-10100-L (control set: LR 6511-20210-L)	263
	Beta-amyloid (1-42)	CSF	Quantitative detection of beta-amyloid (1-42)	LQ 6521-10100-L (control set: LR 6521-20210-L)	263
	Total tau	CSF	Quantitative detection of total-tau protein	LQ 6531-10100-L (control set: LR 6531-20210-L)	263
	Phosphot tau	CSF	Quantitative detection of of threonine 181 phos-phorylated tau protein (pTau(181))	LQ 6591-10100-L (control set: LR 6591-20210-L)	263

* For research use only, not for in vitro diagnostic use in the sense of EU directive 98/79/EC.

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g083 at www.euroimmun.com

Neurodegenerative diseases

Beta-amyloid, tau protein · Neurofilaments

For more information on this subject scan the QR code or enter the Quick Link code q160 at www.euroimmun.com

Neurofilaments

Clinical information: Neurofilaments (Nf) are intermediary filaments consisting of the neurofilament light chain (Nf-L), medium chain (Nf-M) and heavy chain (pNf-H). Nf-M and pNf-H, in particular, are subject to considerable posttranslational modifications (phosphorylation, O-glycosylation). Neurofilaments are expressed exclusively in neurons. As the most important structural elements, they are involved, among other things, in axonal transport.

Diagnostics: Neurofilaments are released in case of neuroaxonal damage, which leads to an increase in the concentration of Nf-subunits in the CSF and blood. CSF and blood Nf levels correlate with each other. However, measurement in the CSF is diagnostically more conclusive since the CSF concentration is 10 times higher than that in blood. In rapidly progressing neurodegenerative diseases, such as amyotrophic lateral sclerosis (ALS) or Creutzfeldt-Jakob disease (CJD), the Nf levels are approximately ten times higher than those in healthy individuals.

The concentration of Nf in the CSF and blood of ALS patients is already significantly increased at an early, prediagnostic stage of the disease. The Nf level correlates with the degree of degeneration of the motor neurons. Furthermore, Nf is a prognostic biomarker for the life expectancy of ALS patients. While high concentrations are associated with an unfavourable and rapid disease course, patients who live longer generally exhibit lower Nf values. In studies comparing Nf-L and pNf-H in ALS diagnosis, a higher sensitivity and specificity were observed for pNf-H.

Product overview

Method	Analyte	Sample material	Application	Order number	Page
ELISA	Neurofilament (pNf-H)	CSF and serum	Quantitative detection of phosphorylated neurofilament heavy chain (pNf-H)	EQ 6561-9601	261
	Neurofilament (pNf-H) highly sensitive	Serum and plasma		EQ 6562-9601	261

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q083 at www.euroimmun.com

Kidney markers

Uromodulin · Soluble CD163 (sCD163)

For more information on this subject scan the QR code or enter the Quick Link code q125 at www.euroimmun.com

Uromodulin

Clinical information: In the human body, uromodulin is exclusively produced in the kidneys by the tubule cells of the thick ascending limb of Henle's loop and secreted both into the lumen of the tubule and the blood stream. In the distal tubule lumen, uromodulin is present polymerised to the epithelium, offering protection against kidney stone formation. Due to its polymer structure, the uromodulin which is secreted via the urine is only to a small extent suitable for measurement. Uromodulin in serum, on the other hand, is exclusively present as a monomer and therefore can be more reliably quantified.

Moreover, uromodulin concentrations in urine only have a weak association with the estimated glomerular filtration rate (eGFR). In contrast, the uromodulin in serum (sUmod) correlates strongly with the eGFR.

The sUmod concentration allows identification of early stages of chronic kidney insufficiency already in the symptom-free phase as opposed to established glomerular markers, such as creatinine and cystatin C. A decrease of sUmod concentration in progressing kidney insufficiency shows a loss in function and integrity of the kidney parenchyma.

Based on the sUmod level, also long-term complications can be deduced. Epidemiological studies show that low sUmod concentrations are associated with an increased overall mortality, cardiovascular morbidity, heart insufficiency and the progression of kidney insufficiency. With respect to transplantations, low sUmod concentrations are predicative for long-term function loss of the transplant.

Diagnostics: Serum uromodulin presents a sensitive marker of tubular function with a large potential for the prediction and early recognition of descreasing kidney function. This applies especially to diseases in which mainly the kidney tubules are damaged.

Product details

Analyte	Sample material	Application	Order number	Page
Uromodulin	Serum/plasma	Sensitive marker for a loss in kidney function	EQ 6821-9601	261

Kidney markers

Uromodulin · Soluble CD163 (sCD163)

For more information on this subject scan the QR code or enter the Quick Link code q162 at www.euroimmun.com

Soluble CD163 (sCD163)

Clinical information: CD163 is a membrane protein that is produced exclusively on the cells of the immune system, i.e. monocytes and macrophages. If these come into contact with inflammation-promoting stimuli, for instance, bacterial molecules, CD163 is enzymatically cleaved off of the immune cell membrane, which results in the formation of soluble CD163 (sCD163). In glomerulonephritis, macrophages migrate into the tissue and release sCD163 into the urine via the Bowman's capsule. The biomarker can then be measured in the urine.

The more serious the inflammation, the more macrophages migrate into the tissue. This means that the concentration of sCD163 in urine directly provides information about the severity of the glomerulonephritis. The sCD163 level correlates with the disease activity. The higher its concentration, the more severe the inflammation.

Diagnostics: The sCD163 ELISA is particularly suited for monitoring patients with diagnosed AAV with renal involvement. Contrary to systemic inflammation markers, the sCD163 level is a specific indicator of renal inflammation and reacts quickly under treatment or in case of fluctuations in the inflammatory activity.

If, during regular testing, the sCD163 concentrations increase again after having been normal for some time, this can point to a renewed outbreak of the kidney inflammation. The treatment can then be adjusted at an early stage, preventing irreversible kidney damage in the patient.

Product details

Analyte	Sample material	Application	Order number	Page
sCD163	Urine	Sensitive marker that reflects the inflammation in the glomeruli (glomerulo-nephritis) depending on the migrated M2 macrophages.	EQ 6851-9601-U	261

Inflammatory bowel diseases

Calprotectin

For more information on this subject scan the QR code or enter the Quick Link code q127 at www.euroimmun.com

Calprotectin

Clinical information: Calprotectin is a calcium- and zinc-binding protein which is produced by neutrophil granulocytes and monocytes and has bactericidal and fungicidal properties. In the case of an inflammatory intestinal disease, granulocytes move into the gut lumen where they release calprotectin, which is secreted with stool. The calprotectin concentration in stool shows the extent of an inflammation in the intestine.

Diagnostics: The non-invasive determination of calprotectin levels in stool is useful for:

Differential diagnostic delimitation of an irritable colon (irritable bowel syndrome) from acute and chronic inflammations of the intestine (e.g. viral or bacterial infections, Crohn's disease, ulcerative colitis). The calprotectin level in stool is increased in chronic inflammatory bowel diseases (CIBD) and malignant intestinal tumors with an inflammatory component, but not in intestinal polyps, benign intestinal tumors, and irritable colon.

Monitoring the disease course and therapy response in patients with CIBD. With successful treatment, the originally increased calprotectin level decreases significantly. In the case of a relapse, it increases again. The level correlates very well with the histological and endoscopical findings. Owing to the non-invasive calprotectin determination, patients can be spared biopsies and other complicated procedures.

Product details

Method	Analyte	Sample material	Application	Order number	Page
ELISA	Calprotectin	Stool	Ideally suited for differentiation of chronic inflammatory bowel disease and irritable bowel syndrome and for monitoring the disease course	EQ 6831-9601 W	261
ChLIA	Calprotectin	Stool		LQ 6831-10010 W (control set: LR 6831-20210 W)	263

Additional material	Order number
Stool dosage tubes (SDT), prefilled with extraction buffer, 45 pieces	ZE 6010-4501
Stool dosage tubes (SDT), not prefilled with extraction buffer, 100 pieces	ZE 6010-0100-1

IDS products

Bone turnover markers · calcium metabolism

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For more information on this subject scan the QR code or enter the Quick Link code q076 at www.euroimmun.com

Bone turnover markers

Clinical information: Bone is a metabolically active organ that undergoes continuous remodelling throughout life. Bone turnover markers are products derived from the bone remodelling process which are released as a result of the action of the cells involved (osteoblasts and osteoclasts). Depending on their involvement in the remodelling process, they are categorised into bone formation or resorption markers.

Diagnostics: Osteoporosis is the most common bone metabolism disorder. It is characterised by a weakening of the bone structure. According to the recommendation of a consensus group of the International Osteoporosis Foundation (IOF), osteoporosis therapy can be monitored using bone turnover markers. Their targeted determination makes it possible to assess whether the patient is responding to the treatment. A useful approach would be to establish baseline levels before starting therapy and measure serum levels after three months and every 12 months thereafter. Subsequent yearly measurements, preferably at the same time as DXA controls, will help to identify patients developing poor adherence.

Similarly, according to the Canadian Consensus Conference on Osteoporosis, analysis of bone turnover markers can be used to quickly assess adherence and effectiveness of drug therapies. According to the organisation, bone mineral density (BMD) should not be considered the only indicator of treatment success, as therapy is not necessarily associated with a significant increase in BMD.

In addition to osteoporosis, there are many other conditions affecting bone, such as chronic kidney disease (CKD) and other metabolic bone diseases. Utilisation of the bone turnover markers in these cases can be beneficial to support clinicians in the management of patients.

Product details

Method	Analyte	Sample material	Application	Order number	Page
ELISA	Serum CrossLaps® (CTX-I)	Serum/plasma	Detection of C-terminal telopeptides of type I collagen – a marker of bone resorption	AC-02F1	262
	Urine CrossLaps® (CTX-I)	Urine		AC-03F1	262
	Alpha CrossLaps® (CTX-I)	Urine		AC-04F1	262
	Urine BETA Cross-Laps® (CTX-I)	Urine		AC-05F1	262
	N-MID® Osteocalcin	Serum/plasma	Detection of N-MID osteocalcin – a marker of bone formation	AC-11F1	262
	Ostase® (BAP)	Serum	Detection of bone-specific alkaline phosphatase – a marker of bone formation	AC-20F1	262
ChLIA	CrossLaps® (CTX-I)	Serum/plasma	Detection of C-terminal telopeptides of type I collagen – a marker of bone resorption	IS-3000 IS-3030 (control set)	264 265
	N-MID® Osteocalcin	Serum/plasma	Detection of N-MID osteocalcin – a marker of bone formation	IS-2900 IS-2930 (control set)	264 265
	Ostase® (BAP)	Serum/plasma	Detection of bone-specific alkaline phosphatase – a marker of bone formation	IS-2800 IS-2830 (control set)	264 265
	BoneTRAP® (TRAcP 5b)	Serum/plasma	Tartrate-resistant acid phosphatase – a marker of bone resorption	IS-4100 IS-4130 (control set)	264 265
	Intact PINP	Serum/plasma	Intact N terminal propeptide of type I pro-collagen – a marker of bone formation	IS-4000 IS-4030 (control set)	264 265

IDS products

Bone turnover markers · calcium metabolism

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For more information on this subject scan the QR code or enter the Quick Link code q076 at www.euroimmun.com

Calcium metabolism

Clinical information: Calcium metabolism or calcium homeostasis is the regulation of calcium levels within the body. An important aspect of this is the maintenance of circulating calcium levels in the blood within a narrow range. The body maintains very tight control over the calcium circulating in the blood at any given time. The equilibrium is maintained by an interplay of calcium absorbed from the intestines, movement of calcium into and out of the bones, and the kidney's reclamation and excretion of calcium into the urine. The body regulates calcium through the parathyroid hormone (PTH), vitamin D, and, to a lesser extent, calcitonin.

If the serum calcium level falls, the parathyroid glands release parathyroid hormone (PTH) into the blood and this signals cells in bone (osteoclasts) to release calcium from the bone surfaces. PTH also signals the kidney to reclaim more calcium before it is excreted in the urine and stimulates synthesis of the active form of vitamin D, calcitriol (1,25-dihydroxy vitamin D).

Vitamin D_3 is made in the skin from 7-dehydrocholesterol under the influence of UV light. Vitamin D_2 (ergocalciferol) is derived from the plant sterol ergosterol. Vitamin D_3 and D_2 are converted to 25-hydroxy vitamin D (25-OH vitamin D) in the liver, then to the active form 1,25-dihydroxy vitamin D mostly by the kidneys.

Diagnostics: The determination of the total amount of circulating 25-OH vitamin D is particularly suitable for assessing the vitamin D supply status or for determining vitamin D insufficiency.

Because 1,25-dihydroxy vitamin D is the active form of vitamin D, it is often mistakenly assumed that the determination of 1,25-dihydroxy vitamin D allows accurate assessment of the vitamin D status and the detection of vitamin D deficiency. However, 1,25-dihyroxy vitamin D has little or no relationship to vitamin D stores. It is primarily regulated by PTH. The PTH concentration in turn depends on calcium and thus also on 25-OH vitamin D. The 1,25-dihydroxy vitamin D blood tests are useful in patients with kidney disease.

Elevated PTH levels, as can occur in vitamin D deficiency due to lowered calcium levels, stimulate bone resorption due to the maturation of osteoclasts that digest the bone matrix, which can lead to an increased risk of fractures, osteopenia, and osteoporosis. Increased levels of PTH can also cause demineralisation of the skeleton, e.g. osteomalacia, because of the increased renal loss of phosphorus. It is therefore necessary for individuals to maintain sufficient levels of 25-OH vitamin D to avoid elevations in PTH.

Product details

Method	Analyte	Sample material	Application	Order number	Page
ELISA	25-OH vitamin D	Serum/plasma	ELISA with an analytical specificity of 100 % for 25-OH vitamin D_2 and D_3	EQ 6411-9601	261
	Intact parathyroid hormone (iPTH)	Serum/plasma	Specific detection by combination of N and C terminus-specific antibodies	EQ 6421-9601	260
	1,25-Dihydroxy vitamin D	Serum/plasma	Detection of 1,25-$(OH)_2$ vitamin D	AC-62F1	262
ChLIA	25-OH vitamin D	Serum/plasma	Fully automated detection of total 25-OH vitamin D – a CDC VDSCP certified test	IS-2500N IS-2530N (control set)	263
	1,25-Dihydroxy vitamin D	Serum	Fully automated detection of 1,25-$(OH)_2$ vitamin D	IS-2000 IS-2030 (control set)	264 265
	1,25-Dihydroxy vitamin D	Serum/plasma	Semi-automated detection of 1,25-$(OH)_2$ vitamin D	IS-2400 IS-2430 (control set)	264 265
	Intact PTH	Serum/plasma	Fully automated detection of intact PTH	IS-3200 IS-3230 (control set)	264 265

Products for antigen detection

Format
9601: 96 individual break-apart wells (12 microplate strips, 8 wells each)

EQ 6141 - 9601 [ ] S

Product code

Sample material
- L: CSF
- S: Saliva
- U: Urine
- W: Stool

Product classification
- EQ: Test system microplate ELISA (hormones and proteins) ..... page 260
- Test system ids microplate ELISA (hormones and proteins) ..... page 262
- LQ: Test system chemiluminescence test (hormones and proteins) ..... page 263
- LR: Control set chemiluminescence test ..... page 263
- Test system ids chemiluminescence test (hormones and proteins ..... page 264
- Control set ids chemiluminescence test ..... page 265

For product orders the amount, product code and test name are required. **Test kits** comprise all reagents needed to perform the investigation.

Microplate ELISA for the Determination of Hormones and Proteins (Test Systems)

Order No.	Analyte	Calibration	Format
EQ 1016-9601	**free triiodothyronine (FT3)**	0/2/4/8/16/40 pg/ml	96 x 01
EQ 1016-9601-9	**reverse triiodothyronine (RT3)**	0/0.02/0.1/0.4/1/2 ng/ml	96 x 01
EQ 1017-9601	**free thyroxine (FT4)**	0/2/6/20/80 pg/ml	96 x 01
EQ 2606-9601	**SARS-CoV-2 Antigen**	semi-quantitative	96 x 01
EQ 266a-9601-1	**Dengue virus NS1 antigen detection (DENV)**	1/10/100 RU/ml	96 x 01
EQ 6141-9601 S	**cortisol determination in saliva**	0/0.3/1/3/10/30 ng/ml	96 x 01
EQ 6143-9601	**aldosterone**	0/15/50/200/500/1000 pg/ml	96 x 01
EQ 6151-9601	**free testosterone**	0/0.1/1/5/20/60 pg/ml	96 x 01
EQ 6151-9601-1	**total testosterone**	0/0.08/0.42/1.67/5/16.7 ng/ml	96 x 01
EQ 6152-9601-1	**Dihydrotestosteron**	0/25/100/250/500/1000/2500 pg/ml	96 x 01
EQ 6153-9601	**androstenedione**	0/0.1/0.3/1/3/10 ng/ml	96 x 01
EQ 6154-9601	**dehydroepiandrosterone (DHEA)**	0/0.2/1/5/15/40 ng/ml	96 x 01
EQ 6155-9601	**dehydroepiandrosterone sulfate (DHEA-S)**	0/0,005/0,02/0,1/0,5/2,5/10 µg/ml	96 x 01
EQ 6156-9601	**3alpha-androstanediol glucuronid (3alpha-adiol G)**	0/0.25/1/3/10/50 ng/ml	96 x 01
EQ 6160-9601-1	**total estrogens**	0-2500 pg/ml	96 x 01
EQ 6163-9601	**17-OH-progesterone**	0/0.15/0.5/1.5/3/7.5/20 ng/ml	96 x 01
EQ 6164-9601	**pregnenolone**	0/0.1/0.4/1.6/6.4/25.6 ng/ml	96 x 01
EQ 6165-9601-1	**estrone**	0/20/60/200/600/2000 pg/ml	96 x01
EQ 6167-9601	**Free Estriol ELISA**	0/0,05/0,25/1/5/30 ng/ml	96 x 01
EQ 6179-9601	**sex hormone-binding globulin (SHBG)**	0/3.3/12.5/55/160/295 nmol/l	96 x 01
EQ 6411-9601	**25-OH vitamin D**	0/4/10/25/60/120 ng/ml	96 x 01
EQ 6421-9601	**intact PTH**	0-500 pg/ml	96 x 01
EQ 6431-9601	**calcitonin**	0-500 pg/ml	96 x 01
EQ 6444-9601	**leptin**	0/1/5/10/20/50/100 ng/ml	96 x 01
EQ 6446-9601	**adiponectin**	0/2/5/10/25/50 ng/ml	96 x 01
EQ 6511-9601 *	**beta-amyloid (1-40) determination in plasma**	0-75 pg/ml	96 x 01
EQ 6511-9601-L	**beta-amyloid (1-40) determination in CSF**	0-900 pg/ml	96 x 01
EQ 6521-9601 *	**beta-amyloid (1-42) determination in plasma**	0-40 pg/ml	96 x 01
EQ 6521-9601-L	**beta-amyloid (1-42) determination in CSF**	0-1800 pg/ml	96 x 01
EQ 6531-9601-L	**total tau determination in CSF**	0-1500 pg/ml	96 x 01

* For research use only, not for in vitro diagnostic use in the sense of EU directive 98/79/EC.

Microplate ELISA for the Determination of Hormones and Proteins (Test Systems)

Order No.	Analyte	Calibration	Format
EQ 6541-9601-L *	**BACE-1 determination in CSF**	0-12000 pg/ml	96 x 01
EQ 6545-9601-L *	**alpha-synuclein determination in CSF**	0-6000 pg/ml	96 x 01
EQ 6551-9601-L *	**neurogranin determination in CSF**	0-1300 pg/ml	96 x 01
EQ 6561-9601	**neurofilament (pNf-H) determination in CSF and serum**	0/0,125/0,5/2/5/10 ng/ml	96 x 01
EQ 6562-9601	**neurofilament (pNf-H) highly sensitive determination in serum and plasma**	0/20/50/200/500/1000 pg/ml	96 x 01
EQ 6591-9601-L	**pTau(181) determination in CSF**	0-200 pg/ml	96 x 01
EQ 6811-9601-L	**CXCL13 determination in CSF**	0-500 pg/ml	96 x 01
EQ 6821-9601	**uromodulin determination in serum**	0/25/50/100/200/400 ng/ml	96 x 01
EQ 6825-9602	**Plasma Renin Activity (PRA)**	0/0,2/0,5/1,5/4/10/25/60 ng/ml	96 x 02
EQ 6831-9601 W	**calprotectin determination in stool**	0/15/60/240/960/2100 µg/g	96 x 01
EQ 6841-9601	**Quan-T-Cell ELISA To be used in combination with ET 2606**	12-400 mIU/ml	96 x 01
EQ 6851-9601-U	**sCD163 determination in urine**	0-12 ng/ml	96 x 01
EQ 6911-9601	**Aspergillus antigen**	0/20/50/125/312.5/625 pg/ml	96 x 01

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IDS Microplate ELISA for the Determination of Hormones and Proteins (Test Systems)

IDS Order No.	Description	Format
AC-57SF1	25-Hydroxy Vitamin D S EIA	96 x 01
AC-62F1	1,25-Dihydroxy Vitamin D EIA	96 x 01
AC-20F1	Ostase® BAP EIA	96 x 01
AC-02F1	Serum CrossLaps® (CTX-I) ELISA	96 x 01
AC-03F1	Urine CrossLaps® (CTX-I) EIA	96 x 01, determination in urine
AC-04F1	Urine Alpha CrossLaps® (CTX-I) EIA	96 x 01, determination in urine
AC-05F1	Urine BETA CrossLaps® (CTX-I) ELISA	96 x 01, determination in urine
SB-TR201A	BoneTRAP® (TRAcP 5b) ELISA	96 x 01
AC-11F1	N-MID® Osteocalcin ELISA	96 x 01
AC-10F1	Urine CartiLaps® (CTX-II) EIA	96 x 01, determination in urine
AN-14-1006-71	Human COMP® ELISA	96 x 01

Chemiluminescence Tests for the Determination of Hormones and Proteins (Test Systems)

Order No.	Analyte	Calibration	Format
LQ 6511-10010-L	**beta-amyloid (1-40) determination in CSF**	0-20000 pg/ml	100 determinations for RA Analyzer 10
LQ 6521-10010-L	**beta-amyloid (1-42) determination in CSF**	0-2000 pg/ml	100 determinations for RA Analyzer 10
LQ 6531-10010-L	**Total Tau determination in CSF**	0-2000 pg/ml	100 determinations for RA Analyzer 10
LQ 6591-10010-L	**pTau (181) determination in CSF**	0-400 pg/ml	100 determinations for RA Analyzer 10
LQ 6831-10010 W	**calprotectin determination in stool**	0-1000 µg/g	100 determinations for RA Analyzer 10

Control Sets for Chemiluminescence Tests

Order No.	Control Set (Ready for use)	Format
LR 6511-20210-L	**Control set beta-amyloid (1-40) determination in CSF**	2 x 0.5 ml control 1/2
LR 6521-20210-L	**Control set beta-amyloid (1-42) determination in CSF**	2 x 0.5 ml control 1/2
LR 6531-20210-L	**Control set Total Tau determination in CSF**	2 x 0.5 ml control 1/2
LR 6591-20210-L	**Control set pTau (181) determination in CSF**	2 x 0.5 ml control 1/2
LR 6831-20210 W	**Control set calprotectin determination in stool**	2 x 0.5 ml control 1/2

IDS Chemiluminescence Tests for the Determination of Hormones/Proteins (Test Systems)

IDS Order No.	Description	Format
IS-4600	IDS Cortisol	100 determinationss
IS-4900	IDS Salivary Cortisol	100 determinations, calibrators incl.
IS-3300	IDS Aldosterone	100 determinations, calibrators incl.
IS-4500N	IDS ACTH	100 determinations
IS-5300	IDS Free Testosterone	100 determinations, calibrators incl.
IS-5000	IDS Total Testosterone	100 determinations, calibrators incl.
IS-5100	IDS 17-OH Progesterone	100 determinations, calibrators incl.
IS-5600	IDS SHBG	100 determinations, calibrators incl.
IS-3700	IDS human Growth Hormone (hGH)	100 determinations, calibrators incl.
IS-3900	IDS Insulin-like Growth Factor-I (IGF-I)	100 determinations, calibrators incl.
IS-4400	IDS Insulin-like Growth Factor Binding Protein-3 (IGFBP-3)	100 determinations, calibrators incl.
IS-4700	IDS InaKtif MGP (dp-uc MGP)	100 determinations, calibrators incl.
IS-2500N	IDS 25 VitD S	100 determinations
IS-2000	IDS 1,25 VitD Xp	100 determinations, calibrators incl.
IS-2400	IDS 1,25-Dihydroxy Vitamin D	100 determinations, calibrators incl.
IS-2800	IDS Ostase® BAP	100 determinations, calibrators incl.
IS-3000	IDS CTX-I (CrossLaps®)	100 determinations, calibrators incl.
IS-4100	IDS TRAcP 5b (BoneTRAP®)	100 determinations, calibrators incl.
IS-2900	IDS N-MID® Osteocalcin	100 determinations, calibrators incl.
IS-3200	IDS Intact PTH	100 determinations, calibrators incl.
IS-4000	IDS Intact PINP	100 determinations, calibrators incl.
IS-3400	IDS Direct Renin	100 determinations, calibrators incl.
IS-5900	IDS ACE	100 determ., calibrators/controls incl.
IS-6000	IDS Calprotectin	100 determinations

IDS Control Sets for Chemiluminescence Tests

IDS Order No.	Description	Format
IS-4620	IDS Cortisol Calibrator Set	6 concentration levels
IS-4630	IDS Cortisol Control Set	2 concentration levels
IS-4930	IDS Salivary Cortisol Control Set	3 concentration levels
IS-3330	IDS Aldosterone Control Set	3 concentration levels
IS-4520N	IDS ACTH Calibrator Set	6 concentration levels
IS-4530N	IDS ACTH Control Set	3 concentration levels
IS-5030	IDS Total Testosterone Control Set	3 concentration levels
IS-5330	IDS Free Testosterone Control Set	3 concentration levels
IS-5130	IDS 17-OH Progesterone Control Set	3 concentration levels
IS-5630	IDS SHBG Control Set	3 concentration levels
IS-3930	IDS Insulin-like Growth Factor-I (IGF-I) Control Set	3 concentration levels
IS-4430	IDS Insulin-like Growth Factor Binding Protein-3 (IGFBP-3) Control Set	3 concentration levels
IS-4730	IDS InaKtif MGP (dp-uc MGP) Control Set	3 concentration levels
IS-2520N	IDS 25 VitD S Calibrator Set	6 concentration levels
IS-2530N	IDS 25 VitD S Control Set	2 concentration levels
IS-2030	IDS 1,25 VitD Xp Control Set	2 concentration levels
IS-2430	IDS 1,25-Dihydroxy Vitamin D Control Set	2 concentration levels
IS-2830	IDS Ostase® BAP Control Set	3 concentration levels
IS-3030	IDS CTX-I (CrossLaps®) Control Set	3 concentration levels
IS-4130	IDS TRAcP 5b (BoneTRAP®) Control Set	3 concentration levels
IS-2930	IDS N-MID® Osteocalcin Control Set	3 concentration levels
IS-3230	IDS Intact PTH Control Set	3 concentration levels
IS-4030	IDS Intact PINP Control Set	3 concentration levels
IS-3430	IDS Direct Renin Control Set	3 concentration levels
IS-6020	IDS Calprotectin Calibrator Set	5 concentration levels
IS-6030	IDS Calprotectin Control Set	2 concentration levels

Molecular genetic diagnostics

Molecular genetics

ApoE · F V / II / MTHFR · HLA-B27 · HLA-B57:01 · HLA-Cw6 · HLA-DQ2/8 · HFE · LCT

For more information on this subject scan the QR code or enter the Quick Link code q142 at www.euroimmun.com

ApoE

Clinical information: The molecular genetic determination of the APOE alleles ε2, ε3 and ε4 is used in particular for the differential diagnosis and/or early identification of Alzheimer's disease (AD) and type III hyperlipoproteinaemia.

Apolipoprotein E (ApoE) is a component of lipoproteins in blood and plays an important role in fat metabolism, but also in blood coagulation, the immune response, and the protection from oxidative processes. ApoE binds to the amyloid β peptide, which plays a central role in neurodegeneration in Alzheimer's patients. There are three different APOE alleles: ε2, ε3 and ε4. From these alleles, three different isoforms of the ApoE protein (E2, E3 and E4) are produced, which differ in the amino acids at positions 112 and 158.

The APOE allele ε4 occurs in Alzheimer's patients around three times more frequently than in the normal population (36.7% versus 13.7%). In contrast, the APOE allele ε2 is rarer in Alzheimer's patients than in the normal population (3.9% versus 8.4%). Correspondingly, carriers of an APOE ε4 allele have an increased risk of developing Alzheimer's disease, while the APOE allele ε2 is associated with a reduced risk. In families with the late form of Alzheimer's disease, the disease risk and the average age of disease onset is strongly dependent on the ε4 gene dosage: 20% and 84 years for non ε4 carriers, 47% and 76 years for heterozygote and 91% and 68 years for homozygote carriers of the ε4 allele.

Homozygosity for the APOE allele ε2 has been identified as the primary molecular cause of type III hyperlipidaemia (familial dysbetalipoproteinaemia), which leads to a greatly increased risk of arteriosclerosis.

Alongside its significance for differential diagnosis, the determination of APOE alleles has an increasing pharmacological significance in the development of new medications against Alzheimer's disease.

Diagnostics: The EUROArray APOE Direct was especially developed for specific determination of the APOE gene variants ε2, ε3 and ε4 and enables fast and simple analysis of the APOE alleles in a single test. In the unique direct procedure, whole-blood samples can be used directly without the need for DNA isolation, which saves time and costs. Data analysis, data interpretation and archiving are done completely automated by means of the EUROArrayScan software. In the results it is exactly distinguished between homozygous and heterozygous presence of the different possible genotypes. In the context of Alzheimer's diagnostics, the EUROArray APOE Direct is a good complement to the antibody-based test systems offered by EUROIMMUN.

Product overview

Parameter	Sample material	Application	Order number	Page
APOE Direct	Whole blood/ genomic DNA	Molecular biological in vitro determination of disease-associated APOE alleles in human genomic DNA for diagnosis of Alzheimer's disease, type III hyperlipoproteinaemia and other diseases associated with alleles ε2, ε3 and/or ε4 of the APOE gene.	MN 5710-####-V	300

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g080 at www.euroimmun.com

Molecular genetics

ApoE · F V / II / MTHFR · HLA-B27 · HLA-B57:01 · HLA-Cw6 · HLA-DQ2/8 · HFE · LCT

For more information on this subject scan the QR code or enter the Quick Link code q135 at www.euroimmun.com

Factor V / Factor II / MTHFR

Clinical information: Deep and superficial venous thrombosis and thromboembolism of the brain, lung and coronary vessels are among the most frequent causes of death in western industrialised countries. These conditions result from a combination of genetic and exogenous factors. More than half of all thromboembolic cases are caused by genetic risk factors, particularly if the disease occurs before the age of 45 without any noticeable external factors or at an atypical location. The most important and most frequent genetic risk factors are the factor V Leiden (1691G>A) and the factor II 20210G>A mutations. Furthermore, two polymorphisms in the methylene tetrahydrofolate reductase (MTHFR) gene are associated with an increase in the homocystein level (hyperhomocysteinaemia), which is also a risk factor for thrombosis. An increased homocysteine level is also associated with an increased risk of neural tube defects, premature delivery, abortion and implantation failure in in vitro fertilisation.

The mutated factor V can be only insufficiently inactivated by activated protein C (APC). This so-called APC resistance results in an increased thrombosis tendency. The factor II (prothrombin) 20210G>A mutation leads to increased prothrombin plasma levels, resulting in an increased risk of thrombosis. If these mutations are present in both genes, the risk of venous thrombosis is 20 times higher. If these genetic risk factors are accompanied by other genetic predisposing gene variants such as mutations in the MTHFR gene, the total risk of thromboembolism is expected to be increased even further.

Diagnostics: The **EUROArray FV / FII+ / MTHFR Direct** has been designed to provide secure determination of the most important genetic thrombosis risk factors and is easy to perform. In the direct procedure, the blood sample is treated with two extraction reagents and can then be used directly in the PCR. The time-consuming and cost-intensive DNA isolation is no longer necessary. Data analysis, data interpretation and archiving are fully automated using the **EUROArrayScan software**. Due to integrated mutation controls, the EUROArray FV / FII+ / MTHFR Direct ensures the highest possible reliability of results, even for rare genotypes. The controls indicate whether the analysed DNA contains further known mutations in direct proximity to the investigated sequence variants that may affect the binding to the probes and, consequently, the test result. Different EUROArray test systems are available for the determination of the FV Leiden and FII 20210G>A mutations and the polymorphisms 677C>T and 1298A>C in the MTHFR gene. Thus, the determinations can be performed separately or together in one test run, depending on the analysis request.

Product overview

Parameter	Sample material	Application	Order number	Page
FV/FII+/MTHFR Direct	Whole blood/ genomic DNA	Molecular biological in vitro determination of point mutations or single-nucleotide polymorphisms in the factor V gene (factor V Leiden, 1691G>A), factor II (prothrombin) gene (20210G>A) and/or MTHFR gene (677C>T and 1298A>C) in human genomic DNA to assess the genetic thrombosis risk	MN 5820-####-V	300
FV/FII+ Direct	Whole blood/ genomic DNA		MN 5821-####-V	301
FV Leiden Direct	Whole blood/ genomic DNA		MN 5822-####-V	301
FII+ Direct	Whole blood/ genomic DNA		MN 5823-####-V	301
MTHFR Direct	Whole blood/ genomic DNA		MN 5824-####-V	301

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q080 at www.euroimmun.com

Molecular genetics

ApoE · F V / II / MTHFR · HLA-B27 · HLA-B57:01 · HLA-Cw6 · HLA-DQ2/8 · HFE · LCT

For more information on this subject scan the QR code or enter the Quick Link code q130 at www.euroimmun.com

HLA-B27

Clinical information: Human leukocyte antigens (HLA) are tissue antigens of the human major histocompatibility complex (MHC). HLA-B belongs to the HLA antigens of class I (also called MHC I antigens) which are present on all nucleus-containing cells of the body. Their function is the control of the T-cell-mediated immune response. Due to an extreme genetic polymorphism there are a large number of HLA phenotypes. For HLA-B over 1000 different alleles have been described. The HLA-B*27 allele alone has 130 subtypes (B*27:01 to B*27:105), which differ only in a few bases. The membrane-bound HLA-B27 protein is associated with the occurrence of several autoimmune diseases, such as ankylosing spondylitis (Bechterew's disease). Around 3 to 6 % of HLA-B*27 carriers develop ankylosing spondylitis. Around 90 % of ankylosing spondylitis patients are carriers of this tissue antigen, in particular subtypes B*27:02, B*27:04 and B*27:05. The subtypes B*27:06 and B*27:09 on the other hand are not associated with ankylosing spondylitis. Therefore, subtype differentiation is necessary for confirmation of diagnosis in particular populations.

Diagnostics: HLA-B27 can be determined accurately and precisely with molecular biological methods via the detection of the corresponding allele (HLA-B*27) in the genomic DNA of the patient. Due to the cross reactivity that occurs with antibodies (with e.g. HLA-B7) and possible false negative results in immunophenotyping when HLA-B*27 expression is low, molecular genetic determination of HLA-B*27 is more specific and sensitive than serological methods. Especially the PCR method using allele-specific primers has the potential to provide reliable results, particularly for the various HLA-B*-27 subtypes.

The HLA-B*27 primers for this test system have been chosen and optimised so that all currently known HLA-B*27 subtypes are detected. Furthermore, when a positive result is obtained, it is indicated whether subtypes HLA-B*27:06 or HLA-B*27:09 could be involved. These two subtypes are not associated with ankylosing spondylitis. With the unique direct procedure, the DNA does not have to be isolated. The blood sample is treated with two extraction reagents and can then be used directly in the PCR. Data analysis, data interpretation and archiving are fully automated using the **EUROArrayScan software**. Numerous controls on the **EUROArray HLA-B27** verify the correctness of the results. For every reaction it is verified that human DNA was present in the PCR and that the primers for the amplification were functional, which is particularly relevant when negative HLA-B27 results are obtained. All of these controls ensure a reliable test result with just one PCR reaction.

Product overview

Parameter	Sample material	Application	Order number	Page
HLA-B27 Direct	Whole blood/ genomic DNA	Molecular biological in vitro determination of disease-associated HLA-B*27 alleles in human genomic DNA in the diagnosis of rheumatic diseases, in particular ankylosing spondylitis (Bechterew's disease)	MN 5110-####-V	300

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g080 at www.euroimmun.com

Molecular genetics

ApoE · F V / II / MTHFR · HLA-B27 · HLA-B57:01 · HLA-Cw6 · HLA-DQ2/8 · HFE · LCT

For more information on this subject scan the QR code or enter the Quick Link code q131 at www.euroimmun.com

HLA-B57:01

Clinical significance: Genetic testing for HLA-B*57:01 is useful for preventing hypersensitivity reactions against the HIV chemo-pharmaceutic agent abacavir. All HIV-infected patients should be tested for the presence of the HLA-B*57:01 allele before starting treatment with drugs containing abacavir sulphate.

Symptoms of a hypersensitivity reaction are fever, exanthema, pruritus, occasionally gastrointestinal and respiratory problems, joint pain and increased liver/kidney parameters with a progressive course up to death, especially with re-exposure. Depending on the ethnic group, a significant part of the treated patients are affected. Reactions have proven to occur in 8 to 16% of black Africans, 20 to 22% of Hispanics and 48 to 61% of Caucasians. Around 8% of people carry the HLA-B*57:01 allele. The prevalence ranges between 0.1% (e.g. Japanese) and 19.6% (e.g. South Africans).

Diagnostics: The EUROArray HLA-B57:01 Direct enables fast and simple detection of HLA-B*57:01 alleles – no in-depth knowledge of molecular biology is required. The primers and probes employed in this test system were selected and optimised such that all HLA-B*57:01 alleles known worldwide can be sensitively and specifically detected in a single reaction. The direct method enables the direct use of whole blood samples. Therefore, a time- and cost-consuming DNA isolation is no longer required. The evaluation, generation and archiving of results are carried out fully automatically with the **EUROArrayScan software.**

Product overview

Parameter	Sample material	Application	Order number	Page
HLA-B57:01 Direct	Whole blood/ genomic DNA	Molecular genetic in vitro determination of HLA-B*57:01 alleles in human genomic DNA, associated with hypersensitivity reactions during treatment with abacavir.	MN 5210-####-V	300

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q080 at www.euroimmun.com

Molecular genetics

ApoE · F V / II / MTHFR · HLA-B27 · HLA-B57:01 · HLA-Cw6 · HLA-DQ2/8 · HFE · LCT

For more information on this subject scan the QR code or enter the Quick Link code q132 at www.euroimmun.com

HLA-Cw6

Clinical information: Human leukocyte antigens (HLA) are tissue antigens of the human major histocompatibility complex (MHC), which is localised on the short arm of chromosome 6. HLA-C belongs to the HLA antigens of class I (also called MHC I antigens), which are represented on all nucleus-containing cells of the body. Their function is the control of the T-cell-mediated immune response.

HLA-C*06 alleles are the genetic component for the disposition to the autoimmune reactions that result in psoriasis. There is a strong genetic component to psoriasis; around 40 % of cases are familial. Monozygotic twins show a concordance rate of 62 to 70 % and dizygotic twins of 21 to 23 %. Total-genome association studies have confirmed that of all gene sites HLA-C shows the highest association with psoriasis, and HLA-C*06 can be considered as by far the most powerful genetic marker for the disease. Around 67 % of psoriasis patients carry the HLA-C*06 allele compared to a prevalence of around 10 to 20 % for the HLA-Cw6 antigen in the general population. Caucasians with the HLA-C*06 allele have a 10-fold increased risk of developing psoriasis. An association of psoriatic arthritis with HLA-Cw6 has also been described. The detection of the allele can therefore also be used to support the diagnosis. This can enable the differentiation from other arthritides especially in psoriatic arthritis patients with ambiguous skin changes or in patients with an unavailable family anamnesis.

Diagnostics: The **EUROArray HLA-Cw6 Direct** has been specifically designed for the determination of HLA-C*06 alleles coding for HLA-Cw6. It is therefore particularly easy to perform compared to other molecular biological methods for the detection of HLA-C*06. With the unique direct procedure, the DNA does not have to be isolated. The whole blood sample is merely treated with two extraction reagents and can then be used directly in the PCR.

In chronic inflammatory skin diseases the determination of HLA-C*06 is of great significance for differential diagnostics, since the presence of the HLA-Cw6 antigen is associated in particular with type 1 psoriasis vulgaris (OR 16.0) and psoriasis guttata (OR 33.6), but is only comparatively weakly associated (OR 2.6) with type 2 psoriasis vulgaris. In type 1 psoriasis vulgaris around 83 % of patients carry the HLA-C*06 allele, whereas in type 2, which has a milder course, the proportion of HLA-Cw6-positive patients is only 44 %. In the EUROArray HLA-Cw6 Direct the PCR primers have been chosen and optimised so that all relevant HLA-C*06 subtypes are detected. Data analysis, data interpretation and archiving are fully automated using the **EUROArrayScan software**. For every reaction the presence of isolated human genomic DNA is verified. Moreover, the functionality of the primers for HLA-Cw6 is verified, providing additional security with negative results.

Product overview

Parameter	Sample material	Application	Order number	Page
HLA-Cw6 Direct	Whole blood/ genomic DNA	Molecular genetic in vitro determination of disease-associated HLA-C*06 alleles in human genomic DNA in the diagnosis of psoriasis with skin manifestation (in particular type 1 psoriasis vulgaris, psoriasis guttata, type 2 psoriasis vulgaris), joint manifestation (in particular psoriatic arthritis) etc.	MN 5410-####-V	300

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q080 at www.euroimmun.com

Molecular genetics

ApoE · F V / II / MTHFR · HLA-B27 · HLA-B57:01 · HLA-Cw6 · HLA-DQ2/8 · HFE · LCT

For more information on this subject scan the QR code or enter the Quick Link code q133 at www.euroimmun.com

HLA-DQ2/DQ8

Clinical information: The determination of HLA-DQ2/DQ8 is important to diagnostically exclude coeliac disease, an autoimmune disease which occurs in predisposed individuals as a reaction to gluten sensitivity. Almost 100% of coeliac disease patients possess the genetic risk factors HLA-DQ2 or HLA-DQ8. These are heterodimeric surface receptors consisting of an alpha and a beta chain, which are coded by the HLA-DQA1 and HLA-DQB1 alleles of human leukocyte antigens (HLA).

The determination of HLA-DQ2 and HLA-DQ8 is, above all, significant for the following: doubtful biopsy results, ambiguous serology (especially in children under 2 years old), patients on a gluten-free diet with inconclusive diagnosis, clarification of the genetic predisposition of first-degree relatives of coeliac disease patients, and differentiation from other intestinal diseases. Around 95% of coeliac disease patients have the HLA-DQ2 genotype, which is subdivided into HLA-DQ2.5 and HLA-DQ2.2. HLA-DA2.5 is composed of the allele HLA-DQA1*05:01 (or DQA1*05:05) coding for the alpha chain and the allele HLA-DQB1*02:01 (or DQB1*02:02) coding for the beta chain. HLA-DQ2.2 consists of the allele HLA-DQA1*02 coding for the alpha chain and the allele HLA-DQB1*02:02 coding for the beta chain. Those patients who are not HLA-DQ2 positive exhibit the genotype HLA-DQ8, which, according to the ESPGHAN guidelines, is determined by the presence of the alleles HLA-DQA1*03:01 and HLA-DQB1*03:02. In many studies which investigated the relation between the presence of HLA-DQ and coeliac disease, the alleles HLA-DQA1*03:01/02/03 are not differentiated and therefore all classed as alpha subunit of DQ8.

Moreover, the differentiation between homo- and heterozygous presence of the alleles coding for the alpha and beta subunits of HLA-DQ2.2 and -DQ2.5 enables an improved risk assessment.

Diagnostics: The detection of the two leukocyte antigens is important in the diagnosis of coeliac disease, since almost 100% of coeliac disease patients are positive for either DQ2 or DQ8. Although these markers are not particularly specific – around 50% of the healthy population also carries one of these two antigens – the absence of these risk factors is an important exclusion criterion as they possess a negative predictive value of near to 100%. If neither DQ2.2, DQ2.5, nor DQ8 are detected in a patient, then coeliac disease can be as good as excluded.

The **EUROArray HLA-DQ2/DQ8 Direct** has been specifically optimised for the determination of the disease-associated HLA-DQA1 and HLA-DQB1 alleles coding for the subunits of HLA-DQ2.2, -DQ2.5 and -DQ8. The test system **EUROArray HLA-DQ2/DQ8-h Direct** enables more comprehensive diagnostics since it includes the determination of the homo- and heterozygous presence of the alleles coding for HLA-DQ2.2 or -DQ2.5. Both analyses are extremely easy to perform. Owing to the unique direct procedure, the DNA no longer needs to be isolated. The blood sample is treated with two extraction reagents and can then be directly used in the PCR. The PCR primer and microarray probes are selected and optimised in such way that all relevant HLA-DQA1 and HLA-DQB1 alleles can be reliably detected. Data analysis, data interpretation and archiving are fully automated using the **EUROArrayScan Software**. The exact analysis of the alpha and beta subunits of the DQ2 and DQ8 molecules ensures reliable and unambiguous results. In combination with antibody diagnostics (see page 114): Anti-

Endomysium IIFT, Anti-Tissue Transglutaminase ELISA and the new highly specific tests Anti-Gliadin (GAF-3X) ELISA and EUROPLUS Anti-Gliadin (GAF-3X) IIFT, the EUROArray HLA-DQ2/DQ8 offers accurate and reliable diagnostics for coeliac disease and dermatitis herpetiformis.

Product overview

Parameter	Sample material	Application	Order number	Page
HLA-DQ2/DQ8 -h Direct	Whole blood/ genomic DNA	Molecular genetic in vitro determination of disease-associated HLA-DQA1 and HLA-DQB1 alleles in human genomic DNA in the diagnosis of gluten-sensitive enteropathy (coeliac disease, sprue) and dermatitis herpetiformis.	MN 5320-####-V	300
HLA-DQ2/DQ8 Direct	Whole blood/ genomic DNA	Molecular genetic in vitro determination of disease-associated HLA-DQA1 and HLA-DQB1 alleles in human genomic DNA in the diagnosis of gluten-sensitive enteropathy (coeliac disease, sprue) and dermatitis herpetiformis.	MN 5321-####-V	300

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g080 at www.euroimmun.com

Molecular genetics

ApoE · F V / II / MTHFR · HLA-B27 · HLA-B57:01 · HLA-Cw6 · HLA-DQ2/8 · HFE · LCT

For more information on this subject scan the QR code or enter the Quick Link code q134 at www.euroimmun.com

HFE gene (haemochromatosis)

Clinical information: Hereditary haemochromatosis is the most frequent autosomal, recessive inherited metabolic disorder and results from increased resorption of iron in the upper small intestine. In affected individuals the iron uptake from food leads to an increase in the total iron content in the body from approximately 2 to 6 g (normal value) to up to 80 g. The iron then deposits in the liver, pancreas, spleen, thyroid gland, pituitary gland, heart and joints. In untreated patients irreversible damage occurs, resulting in an increased risk of cardiomyopathy, arthropathy, diabetes mellitus, liver cirrhosis and liver and pancreas carcinoma. In Germany, it is estimated that more than 200,000 people suffer from hereditary haemochromatosis, which is one of the most common genetic diseases in northern Europe.

Two mutations in the HFE gene are directly associated with this disease. They lead to a loss or reduction of the physiological function of the Hfe protein. The two mutations result in the amino acid substitutions C282Y and H63D, which represent the most frequent haemochromatosis-associated mutations (90 %). Besides C282Y and H63D, there are two further rare mutations in the HFE gene that are also associated with the development of haemochromatosis. These cause either a change in the amino acid sequence (S65C) of the Hfe protein or early termination of protein synthesis (E168X).

New studies show that 90 to 100 % of haemochromatosis patients exhibit homozygous gene defects. However, even a mutation in one HFE allele is sufficient to cause at least minor abnormalities in iron metabolism. By determining the mutations in the HFE gene, the predisposition to hereditary haemochromatosis can already be detected in childhood, so that preventive measures can be taken at an early stage (e.g. reduced consumption of foods with a high iron content).

Diagnostics: The **EUROArray Haemochromatosis (2 SNP+) Direct** enables reliable determination of the two most common haemochromatosis-associated mutations, C282Y and H63D, in the HFE gene. A more comprehensive investigation, additionally encompassing the more rarely occurring mutations, is offered by the test system **EUROArray Haemochromatosis (4 SNP+) Direct**, which comprises the analysis of C282Y, H63D, S65C and E168X. With the unique direct procedure, the time-consuming and cost-intensive DNA isolation is no longer required. The blood sample is merely treated with two extraction reagents and can then be used directly in the PCR. The PCR primers and microarray probes in these test systems have been chosen so that the mutations in the HFE gene described above are clearly identified. Data analysis, data interpretation and archiving are fully automated using the **EUROArrayScan software**. When a positive result is obtained, the system differentiates between homozygous and heterozygous mutations. Unique integrated controls indicate whether the analysed DNA contains further known mutations in addition to the investigated sequence variants that may affect the binding to the probes and, consequently, the test result. Thus, the EUROArray Haemochromatosis (4 SNP+ or 2 SNP+) Direct ensures the highest possible reliability of results even for rare genotypes.

Product overview

Parameter	Sample material	Application	Order number	Page
Haemochromatosis (4 SNP+) Direct	Whole blood/ genomic DNA	Molecular genetic in vitro determination of two or four mutations in the HFE (high iron) gene in human genomic DNA in the detection or exclusion of the genetically caused iron overload disorder hereditary haemochromatosis in cases of conspicuous patient or family anamnesis	MN 5520-####-V	300
Haemochromatosis (2 SNP+) Direct	Whole blood/ genomic DNA		MN 5521-####-V	300

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q080 at www.euroimmun.com

Molecular genetics

ApoE · F V / II / MTHFR · HLA-B27 · HLA-B57:01 · HLA-Cw6 · HLA-DQ2/8 · HFE · LCT

For more information on this subject scan the QR code or enter the Quick Link code q150 at www.euroimmun.com

Lactose intolerance (LCT gene) and hereditary fructose intolerance

Clinical information: Primary lactose intolerance is based on a genetically caused deficiency in the intestinal enzyme lactase, which is responsible for breaking down lactose into glucose and galactose. Unbroken lactose is fermented by bacteria in the ileum and colon. The resulting fermentation products lead to digestive problems and typical symptoms of lactose intolerance. These include abdominal pain, nausea, meteorism and diarrhoea. In the long term, primary lactose intolerance can lead to deficiencies and, as a result, unspecific symptoms such as fatigue, chronic fatigue and depression. Around 20 % of Europeans and almost 100 % of the entire population in many parts of Asia and in southern Africa suffer from primary lactose intolerance. However, mutations leading to a constantly increased lactase production and thus to lactose tolerance (lactase persistence) have also been observed.

The two most frequent mutations associated with primary lactose intolerance are the polymorphisms 13910 C/T and 22018 G/A, which are located in the promotor region of the lactase (LCT) gene. According to the current state of knowledge, 13910 C/C and 22018 G/G homozygous carriers develop symptoms of lactose intolerance, while 13910 C/T and 22018 G/A heterozygous carriers only have symptoms in case of stress or intestinal infection. 13910 T/T and 22018 A/A homozygous carriers are lactase persistent and show no symptoms at all. In addition to genetic lifelong primary lactose intolerance (with a lactase activity of less than 50 %), there is also secondary lactose intolerance, which generally disappears after several months. Differentiation and clarification of the exact cause of the disorders is essential for patients. Secure and exact diagnosis requires a genetic diagnostic test in addition to the evaluation of the clinical symptoms.

Hereditary fructose intolerance (HFI) is a rare, autosomal recessive inherited metabolic disorder that is caused by mutations in the aldolase B gene (ALDOB gene). The four most frequent mutations in Europe lead to the amino acid replacements A149P, A174D and N334K as well as to the formation of premature stop codons (del4E4). For manifest HFI both alleles must be affected. Aldolase B is an enzyme that is essential for fructose metabolism and is located predominantly in the liver cells. It catalyses the decomposition of fructose 1 phosphate (F-1-P) to dihydroxyacetone phosphate and glyceraldehyde. If the enzyme is defect, F-1-P accumulates and, due to its toxicity, causes nausea, vomiting and gastrointestinal complaints in combination with indigestion and, in the long term, liver damage. Indirectly, gluconeogenesis and glycogen decomposition are inhibited, which may result in severe hypoglycaemia with shaking, sweating, pallor, lethargy and cramps and, in the worst case, in death.

HFI should be clinically differentiated from the much more frequent intestinal fructose intolerance (also called fructose malabsorption; prevalence ~30 %). Fructose malabsorption is generally diagnosed by means of the hydrogen breath test. First, a defined amount of fructose is taken up by the patient, then the H2 concentration in

the breath is measured. However, in case of HFI, administration of fructose-containing food may lead to a severe hypoglycaemic reaction. There, before carrying out a hydrogen breath test, the patient should be investigated for HFI using a molecular genetic test.

■ **Diagnostics:** The **EUROArray Lactose/Fructose Intolerance Direct** test was designed specifically for reliable determination of the most important genetic risk factors of primary lactose intolerance and HFI and is extremely easy to perform. With the unique direct procedure, the DNA no longer needs to be isolated. The blood sample is treated with two extraction reagents and can then be used directly in the PCR. The PCR primers and microarray probes have been carefully selected so that the polymorphisms 13910 C/T and 22018 G/A or mutations A149P, A174D, N334K and del4E4 are clearly identified. Data analysis, data interpretation and archiving are fully automated using the **EUROArrayScan Software**. When a positive result is obtained, the system differentiates between homozygous and heterozygous mutations. The EUROArray Lactose/Fructose Intolerance Direct ensures a high result security even for rare genotypes. For this purpose, the test system comes with unique controls that indicate whether the investigated DNA contains further known mutations in direct proximity to the sequence variants being analysed which may affect the binding to the probes and compromise the detection.

Product overview

Parameter	Sample material	Application	Order number	Page
Lactose/Fructose Intolerance Direct	Whole blood/ genomic DNA	Molecular genetic in vitro determination of the most relevant single nucleotide polymorphisms in the LCT gene or point mutations in the aldolase B gene in human genomic DNA for the diagnosis of primary lactose intolerance and/or hereditary fructose intolerance	MN 5350-####-V	300
Lactose Intolerance Direct	Whole blood/ genomic DNA		MN 5351-####-V	300
Fructose Intolerance Direct	Whole blood/ genomic DNA		MN 5352-####-V	300

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g080 at www.euroimmun.com

Molecular infection diagnostics

Dermatomycosis · HPV · GynTect · STI · SARS-CoV-2 · Zika Virus · Tuberculosis

For more information on this subject scan the QR code or enter the Quick Link code q158 at www.euroimmun.com

Dermatomycosis

Clinical information: Dermatomycoses are infections of the skin, hair and nails, which are caused in most cases by dermatophytes, and in rarer cases by yeasts and moulds. The dermatophytes encompass fungi of the genera *Trichophyton, Epidermophyton, Nannizzia, Paraphyton, Lophophyton, Microsporum* and *Arthroderma*. Depending on the main host or transmission route, dermatophytes are divided into anthropophilic (humans), zoophilic (animals) and geophilic (soil) species. Human pathogenic yeasts and moulds include *Candida* spec., *Scopulariopsis brevicaulis*, *Fusarium* spec. and *Aspergillus fumigatus.*

Fungal infections of the skin are the most frequently occurring infectious diseases with high relapse rates. Worldwide, approximately 20 to 25 % of the population is affected by fungal skin diseases. Around 70 % of all human dermatophyte infections are caused by anthropophilic species. Zoophilic dermatophytes often cause severe inflammatory reactions in humans. The transmission of zoophilic dermatophytes to humans occurs via close contact, especially with pets, which are often asymptomatic carriers. Geophilic dermatophytes less frequently cause disease in humans. Contact with e.g. *Nannizzia gypsea*, however, can lead to infections on the hands and arms in gardeners or farm workers.

The clinical image of dermatomycoses is very heterogeneous and cannot always be differentiated from other dermatoses, such as eczema, psoriasis, erysipelas, or autoimmune diseases. Further, a simultaneous bacterial infection, pretreatment with corticosteroid-containing preparations or secondary contact allergy can hinder identification of dermatomycoses. Dermatomycoses must always be treated. Before starting therapy, a positive pathogen detection result should be present. This allows the different activity spectra of antifungal drugs to be taken into account and the oftentimes lengthy therapy to be designed in the most effective way.

Diagnostics: Standard laboratory diagnostics of dermatomycoses encompass the microscopic detection of fungus and the attempt to culture the pathogen from clinical material. Culturing is generally time-consuming and may be hindered by antimycotic therapy started before taking the sample. Especially in mixed infections, false diagnoses are often made based on culture methods, since slowly growing species are overlooked or overgrown by other pathogens in the sample.

The EUROArray Dermatomycosis combines a multiplex PCR with a microarray and enables detection of up to 50 dermatophytes as well as clear species identification of up to 23 dermatophytes and 6 yeasts/moulds in one reaction. The detection is highly specific and sensitive, even after the start of therapy, and offers a huge time advantage over detection by culture. The EUROArray Dermatomycosis thus contributes significantly to improved identification of dermatomycosis pathogens and finding the respective specific treatment. It also aids quick determination of the infection source.

The EUROArray Dermatomycosis offers fast, reliable and precise detection of dermatophytes, yeasts and moulds. The test is very easy to perform – no in-depth molecular biology knowledge is required. Data analysis, data interpretation and archiving are fully automated using EUROArrayScan software.

Product overview

Parameter	Sample material	Application	Order number	Page
Dermatomycosis	DNA	PCR-based molecular genetic direct detection of up to 50 dermatophytes and clear species identification of up to 23 dermatophytes and 6 yeasts/ moulds	MN 2850-####	302

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q080 at www.euroimmun.com

Molecular infection diagnostics

Dermatomycosis · HPV · GynTect · STI · SARS-CoV-2 · Zika Virus · Tuberculosis

For more information on this subject scan the QR code or enter the Quick Link code q136 at www.euroimmun.com

Human papillomavirus

Clinical information: Genital human papillomaviruses (HPV) are the most frequently sexually transmitted viruses. The prevalence of HPV in Europe amounts to 8% to 15%. Worldwide, it is estimated to be 2% to 45%, varying considerably between the different age and population groups in each country. HPV only infect epithelial cells, where they replicate in the cell nuclei. HPV can cause unregulated tumour-like growth of the host cells, which can be either benign, with warts forming at the site of infection, or malignant, especially resulting in cervical carcinoma.

So far, 30 genital HPV types have been described. They are divided into two groups according to their oncogenic potential: high-risk and low-risk HPV. While high-risk HPV are involved in the development of carcinoma and can be detected in over 99% of cervical carcinomas, low-risk HPV alone are only found in non-malignant tissue changes. The WHO has officially classified genotypes 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 66 as oncogenic and thus as high-risk HPV. HPV 16 can be detected in 50 to 60% and HPV 18 in 10 to 20% of cervical carcinomas. However, other HPV, such as 26, 53, 68, 73 and 82 have also been found in cervical carcinoma and should therefore also be considered as high-risk HPV. Low-risk viruses include HPV 6 and 11, the main causative agents of genital warts (Condylomata acuminata, fig warts). Further low-risk types are 40, 42, 43, 44, 54, 61, 70, 72, 81 and 89 (CP6108). Although infections with low-risk HPV are not potentially lethal, the consequences of the infection, e.g. benign genital warts, can represent a physical and mental impairment for the patient. In Germany, around 1% of people between 15 and 49 years of age are affected.

For assessment of the course of HPV infection and the risks involved it is not only important to differentiate between high-risk and low-risk viruses but also to discriminate between the different viruses in the high-risk group.

Diagnostics: Alongside cytology (Pap smear), direct detection methods for HPV play a very important role in the early diagnosis of cervical carcinoma. They are based on the detection of viral DNA, mainly using PCR, or the detection of viral RNA produced by the host cells. Whereas the Pap smear is used to investigate cervical cells for pathological changes, a PCR-based test is able to detect an HPV infection before morphological cell changes have occurred.

While HPV tests based on conserved genes require only a few primer systems, the detection of the oncogenes E6/E7, which vary considerably in the different HPV, is much more complex. The disadvantage of using conserved genes for HPV detection is that the genes may be lost during integration of viral DNA into the host DNA. PCR systems based on these sequences can therefore lead to false negatives despite viral DNA being present. The **EUROArray HPV** is based on the detection of the oncogenes E6/E7 and thus provides the highest possible sensitivity even after integration of the virus DNA into the host DNA.

The use of subtype-specific primer systems and probes in the **EUROArray HPV** allows the detection and typing of all 30 relevant genital HPV in one test run – namely 18 high risk HPV (16, 18, 26, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 68, 73, 82) and 12 low risk HPV (6, 11, 40, 42, 43, 44, 54, 61, 72, 81, 89, 70). The **EUROArray HPV** is easy to peform in comparison to other molecular biological methods – no in-depth molecular biology knowledge is required. Data analysis, data interpretation and archiving are fully automated using the **EUROArrayScan software**.

Product overview

Parameter	Sample material	Application	Order number	Page
Human papillomavirus (HPV)	DNA	PCR-based direct detection of human papillomaviruses (HPV), which are involved in the development of neoplasms, in particular cervical carcinoma	MN 2540-####	302

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q080 at www.euroimmun.com

Molecular infection diagnostics

Dermatomycosis · HPV · GynTect · STI · SARS-CoV-2 · Zika Virus · Tuberculosis

For more information on this subject scan the QR code or enter the Quick Link code q174 at www.euroimmun.com

GynTect® – cervical cancer test

Clinical information: An increasing number of countries are changing their **cervical cancer screening** from cytological examinations to HPV screening tests, or a combination of both, at longer intervals. However, only few HPV infections actually lead to lesions that develop into cancer. The majority are overcome by the immune system.

As a result of this new screening strategy, however, **more and more women are being confronted with a positive test result**, which in turn can cause great fear of having cancer. Since conventional screening methods have no prognostic value, there is no way to predict whether an HPV infection will develop into cancer. For this reason, standard screening often leads to unnecessary treatment, including costly surgical procedures that can cause preterm births or miscarriages in women of reproductive age during an existing or subsequent pregnancy. In addition, an inaccurate diagnosis leads to unnecessarily lengthy and intensive monitoring, which is often accompanied by psychological stress for the patient.

Diagnostics: The GynTect® test was developed for improved patient management in cervical cancer screening. It is used to specifically **detect changes in DNA methylation that affect six specific genes** (ASTN1, DLX1, ITGA4, RXFP3, SOX17, ZNF671) **and occur in the development of cervical cancer**. The test can therefore be used to distinguish HPV infections that cause cervical cancer from those that do not and therefore do not require treatment. Accordingly, the GynTect® test is much more specific for high-grade lesions than HPV tests and is an excellent way to determine whether a colposcopy or treatment is needed following a positive HPV test result.

In general, the GynTect® test is particularly suitable for women with a positive (HPV) or abnormal (cytology) cervical cancer screening result who are
- pregnant or would like to conceive
- prefer a non-invasive diagnostic procedure
- want to avoid long monitoring or waiting times for the result of a confirmatory test or
- prefer to continue treatment with their gynaecologist rather than being referred directly to a specialist.

Sales restrictions: This test is only available in Canada, Italy, Poland, Portugal and Turkey.

Product overview

Method/Parameter	Sample material	Application	Order number	Page
GynTect® DNA Methylation test	Bisulphite-converted DNA	PCR-based detection of methylated DNA regions that occur specifically in cervical cancer and its precancerous stages, but not in healthy cervical tissue	MN 254a-####	302

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g080 at www.euroimmun.com

Molecular infection diagnostics

Dermatomycosis · HPV · GynTect · STI · SARS-CoV-2 · Zika Virus · Tuberculosis

For more information on this subject scan the QR code or enter the Quick Link code q143 at www.euroimmun.com

STI – Sexually transmitted infections

Clinical significance: Infections with sexually transmitted pathogens, in particular Chlamydia, Neisseria, Mycoplasma, Ureaplasma and Trichomonas, often lead to inflammation of the urogenital tract. Untreated, they may ascend and eventually lead to infertility. Some pathogens, e.g. *Treponema pallidum*, can spread in the whole body and eventually lead to death. Infections with sexually transmitted pathogens often proceed asymptomatically in the early stage, so that they may remain undetected and only become obvious when they have turned chronic. Infections with the herpes simplex viruses (HSV) -1 and -2 persist lifelong, but only show in acute breakouts by formation of blisters in the facial/labial or genital area. In severe courses they may even lead to encephalitis or meningitis.

In addition to the direct consequences for the patient, infections with most of the above pathogens during pregnancy can lead to intrauterine death, premature birth or damage to the foetus. Moreover, many pathogens can be transmitted to the newborn during birth, causing severe postnatal infections. Herpes virus infections in newborns may lead to neonatal herpes encephalitis or disseminated forms which are associated with high mortality rates.

Diagnostics: The methods which are commonly used for detection of infections with sexually transmitted pathogens encompass culturing, indirect detection by determination of pathogen-specific antibodies and direct detection, in which the pathogen itself is detected immunologically or by means of PCR. Since detection by culturing is especially time-consuming or even impossible for Chlamydia, Mycoplasma, Ureaplasma and Treponema, use of other detection methods, e.g. PCR-based procedures, is generally recommended or required.

The **EUROArray STI-11** enables simultaneous detection of 11 sexually transmitted pathogens in one reaction: *Chlamydia trachomatis, Neisseria gonorrhoeae,* HSV-1 and -2*, Haemophilus ducreyi, Mycoplasma genitalium* and *hominis, Treponema pallidum, Trichomonas vaginalis,* and *Ureaplasma parvum* and *urealyticum*. Timely detection of these pathogens and subsequent targeted treatment can prevent consequential damage, which can lead to severe chronic diseases or infertility. The detection using the EUROArray STI-11 is highly specific and sensitive and significantly faster than determination by culture. Moreover, the combined detection of these pathogens with the EUROArray STI-11 is especially useful for clarifying ambiguous clinical findings, identifying asymptomatic infections in pregnancy care, and identifying multiple infections with different sexually transmitted pathogens. The EUROArray STI-11 therefore contributes substantially to improving diagnosis of sexually transmitted infections.

The data analysis, interpretation and archiving for the EUROArray STI-11 are fully automated by the **EUROArrayScan software**. There are different EUROArray STI test systems available for the detection of different pathogen combinations, also of smaller pathogen ranges, so that the determination can be performed according to the individual requirements (see table).

The **EURORealTime HSV-1/2** test allows highly specific and sensitive detection of HSV-1 and/or HSV-2 as well as quantification of viral DNA by means of real-time PCR. It is suitable both for early diagnosis of HSV-1 and HSV-2 infections and differentiation of the two virus types. Analysis of raw data, evaluation, report generation and archiving are fully automated by means of the **EURORealTime Analysis Software**. The standard curves used for automatic quantification of the viral load can be saved in the software and, if required, used again in future runs.

Product overview

Method / Parameter	Sample material	Application	Order number	Page
EUROArray STI - 11	DNA	PCR-based direct detection of *C. trachomatis, N. gonorrhoeae,* HSV-1, HSV-2, *H. ducreyi, M. genitalium, M. hominis, T. pallidum, T. vaginalis, U. parvum* and *U. urealyticum*	MN 2830-####	302
EUROArray STI -7	DNA	PCR-based direct detection of *H. ducreyi, M. genitalium, M. hominis, T. pallidum, T. vaginalis, U. parvum* and *U. urealyticum*	MN 2830-####-1	302
EUROArray STI - CT/NG	DNA	PCR-based direct detection of *C. trachomatis* and *N. gonorrhoeae*	MN 2830-####-2	302
EUROArray HSV1/2 VZV	DNA	PCR-based direct detection of HSV-1, HSV-2 and varicella zoster virus	MN 2530-####-1	302
EURORealTime HSV-1/2	DNA	Real-time PCR-based quantitative direct detection of HSV-1 and HSV-2	MP 2530-0125	303

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g080 at www.euroimmun.com

Molecular infection diagnostics

Dermatomycosis · HPV · GynTect · STI · SARS-CoV-2 · Zika Virus · Tuberculosis

For more information on this subject scan the QR code or enter the Quick Link code q168 at www.euroimmun.com

SARS-CoV-2

Clinical significance: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2, previously called 2019-nCoV) belongs to the family of coronaviruses and, like SARS-CoV, is classified in the genus *Betacoronavirus*. At the end of 2019, SARS-CoV-2 caused an infection wave which quickly spread worldwide and was declared a pandemic by the WHO in March 2020. Just a few days after the first report about patients with pneumonia of unclear origin, SARS-CoV-2 was identified as the causative pathogen and the associated disease named COVID-19.

SARS-CoV-2 is mainly transmitted via aerosols during speaking, breathing, coughing or sneezing or at close contact with an infected person. The incubation period is usually three to seven, maximally 14 days. The symptoms and severity of SARS-CoV-19 infection can vary significantly. The most common symptoms encompass fever, coughing, breathing difficulties and fatigue. Therefore, in the majority of patients, the infection resembles a cold with light fever, with irregular lung infiltrates. Some patients, especially older and chronically ill persons, develop severe acute respiratory distress syndrome.

Diagnostics: Suitable methods for the diagnosis of SARS-CoV-2 infections are the detection of viral RNA by reverse transcriptase polymerase chain reaction (RT-PCR) or of virus protein by means primarily in sample material from the upper (nasopharyngeal or oropharyngeal swab) or lower respiratory tract (bronchoalveolar lavage fluid, tracheal secretion, sputum, etc.). The RT-PCR allows detection of the pathogen even in subclinical or asymptomatic courses already few days after virus contact and up to 14 days after onset of possible symptoms.

The EURORealTime-SARS-CoV-2 test enables highly specific and sensitive direct detection of SARS-CoV-2 by reverse-transcriptase real-time PCR. Reverse transcription, amplification and detection of the SARS-CoV-2 cDNA are performed in a single test. For differential diagnostics of symptoms which can be associated with COVID-19 as well as influenza, EUROIMMUN offers a combined tests for the parameters SARS-CoV-2, influenza virus type A and influenza virus type B: EURORealTime SARS-CoV-2/Influenza A/B. Optionally, the analysis of raw data, interpretation of data, generation of result reports and archiving of results including all internal and external controls, can be completely automated via the EURORealTime Analysis software. The required data processing steps are thus significantly simplified and accelerated. The software also provides convenient guidance through the entire work procedure, thus preventing errors. The software also provides convenient guidance through the entire work procedure, thus preventing the occurrence of errors.

Moreover, EUROIMMUN's product portfolio for COVID-19 diagnostics encompasses serological tests for differentiated detection of antibodies of different immunoglobulin classes and against different SARS-CoV-2 antigens, an antigen ELISA for acute diagnostics and an interferon gamma release assay (IGRA) to measure the cellular immune response.

Product overview

Method / parameter	Sample material	Application	Order number	Page
EURORealTime SARS-CoV-2	RNA from throat swabs or saliva	Real-time PCR-based direct detection of SARS-CoV-2	MP 2606-####	303
EURORealTime SARS-CoV-2/Influenza A/B	RNA from throat swabs	Real-time PCR-based direct detection of SARS-CoV-2, influenza virus type A and influenza virus type B	MP 2606-20-####	303
Further serological products see page 177				

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q168 at www.euroimmun.com

Molecular infection diagnostics

Dermatomycosis · HPV · GynTect · STI · SARS-CoV-2 · Zika Virus · Tuberculosis

For more information on this subject scan the QR code or enter the Quick Link code q147 at www.euroimmun.com

Zika Virus

Clinical significance: Zika virus (ZIKV) is an arbovirus of the *Flaviviridae* family. The virus is generally transmitted by mosquitos of the genus *Aedes*. Transmission via sexual intercourse has also been reported in individual cases. The virus was first observed in African countries. In recent years, however, large outbreaks also occurred in tropical and subtropical regions in Asia, on islands in the Pacific and in Latin America.

The disease course is usually mild. The symptoms are near-to identical to those of dengue or chikungunya virus infections. After an incubation time of five to ten days a flu-like illness develops with fever, rash, arthralgia, myalgia, headache and conjunctivitis. Moreover, an increase in neurological diseases such as Guillain-Barré syndrome was registered following infections with ZIKV. Furthermore, pregnant women infected with ZIKV can transmit the virus to the foetus. In this case, the virus may impair the brain development and cause severe malformations of the brain as well as microcephaly. There is no specific treatment for ZIKV infections as yet. Protection from mosquito bites serves as a preventative measure. A vaccine is not available.

Diagnostics: The RNA genome of ZIKV can be directly detected in serum approximately five days after the onset of symptoms and in urine up to ten days by means of polymerase chain reaction (PCR). Specific antibodies against ZIKV, in contrast, are first detected several days after onset of syptoms. Therefore, direct detection of ZIKV RNA plays an important role especially in early stages of the infection, while serological antibody detection is especially relevant for the diagnosis of infections at later stages. By using RNA-based detection, ZIKV infections can be clearly distinguished from infections with related viruses, such as dengue or chikungunya virus, which cause similar symptoms and are endemic in the same regions.

The **EURORealTime Zika Virus** test provides highly specific and sensitive direct detection of ZIKV by means of reverse transcriptase real-time PCR. Reverse transcription, amplification, and detection of ZIKV cDNA take place in a single reaction. As an option, raw data analysis, interpretation of data, creation of reports and archiving of results, taking into account all internal and external controls, can also be performed fully automatically by the **EURORealTime Analysis Software.** The required data processing steps are thus significantly simplified and accelerated. Moreover, the software conveniently guides the user through the entire workflow, helping to prevent mistakes.

EUROIMMUN offers the complete range of test systems for specific detection of ZIKV infections, both for direct detection by real-time PCR and serological detection of specific antibodies.

Product overview

Method/parameter	Sample material	Application	Order number	Page
EURORealTime Zika Virus	RNA from serum and urine	Real-time PCR-based direct detection of Zika virus	MP 2668-####	303
Further serological products				
Method	**Substrate**	**Application**	**Order number**	**Page**
ELISA	Recombinant non-structural protein (NS1) from Zika virus	Highly specific detection of Zika virus infections	EI 2668-9601 A/G/M	201
IFT	Arbovirus Fever Mosaic 2: Zika virus, chikungunya virus, dengue virus	For differential diagnosis of arbovirus infections, in particular ZIKV, DENV and CHIKV	FI2668-####-1 G/M	211

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code g080 at www.euroimmun.com

Molecular infection diagnostics

Dermatomycosis · HPV · GynTect · STI · SARS-CoV-2 · Zika Virus · Tuberculosis

For more information on this subject scan the QR code or enter the Quick Link code q167 at www.euroimmun.com

Tuberculosis

Clinical significance: Tuberculosis is among the most frequent infectious diseases worldwide alongside malaria and AIDS. According to estimations of the WHO, there are 10 million new infections and 1.8 million deaths each year.

Tuberculosis is caused by bacteria of the *Mycobacterium tuberculosis* complex (MTBC). This complex encompasses eight different mycobacteria, of which seven have been described to cause tuberculosis in humans and animals. Most of the cases are caused by *M. tuberculosis*.

Tuberculosis bacteria are transmitted primarily by inhalation of infectious droplets, which are emitted into the air as aerosols by patients with open pulmonary tuberculosis through coughing and speaking. Therefore, primary infections in most cases lead to pulmonary tuberculosis. In rare cases, primary tuberculosis also affects other organs such as the skin or the digestive tract. Only 5 to 10% of the infected persons develop active tuberculosis; in immunocompetent persons, a large share of the infections is asymptomatic. Latent infections may persist over decades and be reactivated when the immune system is weakened.

Diagnostics: Microbiological tuberculosis diagnostics are often challenging, especially in the initial stage. Therefore, it is particularly important to apply all available diagnostic methods if there is a suspicion of tuberculosis in order to recognise it, heal it, and break the reaction chain. Fast and sensitive direct detection of tuberculosis pathogen DNA in sputum, bronchoalveolar lavage fluid and bronchial secretion optimally supplements microscopy and time-intensive detection by culture (six to eight weeks).

The EURORealTime MTB test enables highly specific and reliable detection of MTBC by real-time PCR. The detection of a total of three MTBC-specific target regions ensures particularly sensitive diagnostics. Optionally, analysis of raw data, data interpretation, generation of result reports and archiving of results, taking into account all internal and external controls, can be completely automated using the EURORealTime Analysis software. In this way, the required data processing steps are significantly simplified and accelerated. The software also provides convenient guidance through the entire work procedure, thus preventing errors.

Product overview

Method/parameter	Sample material	Application	Order number	Page
EURORealTime MTB	DNA from sputum, bronchial lavage fluid or bronchial secretion	Real-Time PCR-based direct detection of the *M. tuberculosis* complex	MP 2145-####	303

To view all EUROIMMUN products for this subject scan the QR code or enter the Quick Link code q167 at www.euroimmun.com

Products for molecular genetic diagnostics

Format

- 0803: 8 slides with 3 fields each
- 0505: 5 slides with 5 fields each
- 1005: 10 slides with 5 fields each
- 2005: 20 slides with 5 fields each

MN 5110 - 2005 - V

Sample material

V: Whole blood

Product code

Product classification

- MN: Test system EUROArray (molecular genetic determinations) ..... page 300
- MN: Test system EUROArray (molecular infectious diagnostics) ..... page 302
- MC: Control EUROArray (molecular infectious diagnostics) ..... page 302
- MP: Test system EURORealTime PCR (molecular infectious diagnostics) ..... page 303

For product orders the amount, product code and test name are required. **Test kits** comprise all reagents needed to perform the investigation.

EUROArray for Molecular Genetic Determinations (Test Systems)

Order No.	Description	Format
MN 5110-0803-V	EUROArray HLA-B27 Direct	08 x 03
MN 5110-0505-V		05 x 05
MN 5110-1005-V		10 x 05
MN 5110-2005-V		20 x 05
MN 5150-0803 *	EUROArray HLA-DRB1 Shared Epitope	08 x 03
MN 5150-0505 *		05 x 05
MN 5150-1005 *		10 x 05
MN 5150-2005 *		20 x 05
MN 5210-0803-V	EUROArray HLA-B57:01 Direct	08 x 03
MN 5210-0505-V		05 x 05
MN 5210-1005-V		10 x 05
MN 5210-2005-V		20 x 05
MN 5320-0803-V	EUROArray HLA-DQ2/DQ8-h Direct	08 x 03
MN 5320-0505-V		05 x 05
MN 5320-1005-V		10 x 05
MN 5320-2005-V		20 x 05
MN 5321-0803-V	EUROArray HLA-DQ2/DQ8 Direct	08 x 03
MN 5321-0505-V		05 x 05
MN 5321-1005-V		10 x 05
MN 5321-2005-V		20 x 05
MN 5350-0803-V	EUROArray Lactose/Fructose Intolerance Direct	08 x 03
MN 5350-0505-V		05 x 05
MN 5350-1005-V		10 x 05
MN 5350-2005-V		20 x 05
MN 5351-0803-V	EUROArray Lactose Intolerance Direct	08 x 03
MN 5351-0505-V		05 x 05
MN 5351-1005-V		10 x 05
MN 5351-2005-V		20 x 05
MN 5352-0803-V	EUROArray Fructose Intolerance Direct	08 x 03
MN 5352-0505-V		05 x 05
MN 5352-1005-V		10 x 05
MN 5352-2005-V		20 x 05
MN 5410-0803-V	EUROArray HLA-Cw6 Direct	08 x 03
MN 5410-0505-V		05 x 05
MN 5410-1005-V		10 x 05
MN 5410-2005-V		20 x 05
MN 5520-0803-V	EUROArray Haemochromatosis (4 SNP+) Direct	08 x 03
MN 5520-0505-V		05 x 05
MN 5520-1005-V		10 x 05
MN 5520-2005-V		20 x 05
MN 5521-0803-V	EUROArray Haemochromatosis (2 SNP+) Direct	08 x 03
MN 5521-0505-V		05 x 05
MN 5521-1005-V		10 x 05
MN 5521-2005-V		20 x 05
MN 5710-0803-V	EUROArray APOE Direct	08 x 03
MN 5710-0505-V		05 x 05
MN 5710-1005-V		10 x 05
MN 5710-2005-V		20 x 05
MN 5820-0803-V	EUROArray FV / FII+ / MTHFR Direct	08 x 03
MN 5820-0505-V		05 x 05
MN 5820-1005-V		10 x 05
MN 5820-2005-V		20 x 05

* For research use only, not for in vitro diagnostic use in the sense of EU directive 98/79/EC.

EUROArray for Molecular Genetic Determinations (Test Systems)

Order No.	Description	Format
MN 5821-0803-V	**EUROArray FV / FII+ Direct**	08 x 03
MN 5821-0505-V		05 x 05
MN 5821-1005-V		10 x 05
MN 5821-2005-V		20 x 05
MN 5822-0803-V	**EUROArray FV Leiden Direct**	08 x 03
MN 5822-0505-V		05 x 05
MN 5822-1005-V		10 x 05
MN 5822-2005-V		20 x 05
MN 5823-0803-V	**EUROArray FII+ Direct**	08 x 03
MN 5823-0505-V		05 x 05
MN 5823-1005-V		10 x 05
MN 5823-2005-V		20 x 05
MN 5824-0803-V	**EUROArray MTHFR Direct**	08 x 03
MN 5824-0505-V		05 x 05
MN 5824-1005-V		10 x 05
MN 5824-2005-V		20 x 05

EUROArray for Molecular Infectious Diagnostics (Test Systems)

Order No.	Description	Format
MN 2530-0803-1	EUROArray HSV1/2 VZV	08 x 03
MN 2530-0505-1		05 x 05
MN 2530-1005-1		10 x 05
MN 2530-2005-1		20 x 05
MN 2540-0803	EUROArray HPV	08 x 03
MN 2540-0505		05 x 05
MN 2540-1005		10 x 05
MN 2540-2005		20 x 05
MN 2830-0803	EUROArray STI - 11	08 x 03
MN 2830-0505		05 x 05
MN 2830-1005		10 x 05
MN 2830-2005		20 x 05
MN 2830-0803-1	EUROArray STI - 7	08 x 03
MN 2830-0505-1		05 x 05
MN 2830-1005-1		10 x 05
MN 2830-2005-1		20 x 05
MN 2830-0803-2	EUROArray STI - CT/NG	08 x 03
MN 2830-0505-2		05 x 05
MN 2830-1005-2		10 x 05
MN 2830-2005-2		20 x 05
MN 2830-0803-3	EUROArray STI - CT/NG/TP/TV	08 x 03
MN 2830-0505-3		05 x 05
MN 2830-1005-3		10 x 05
MN 2830-2005-3		20 x 05
MN 2830-0803-4	EUROArray STI - 6	08 x 03
MN 2830-0505-4		05 x 05
MN 2830-1005-4		10 x 05
MN 2830-2005-4		20 x 05
MN 2830-0803-5	EUROArray STI - HSV-1/2	08 x 03
MN 2830-0505-5		05 x 05
MN 2830-1005-5		10 x 05
MN 2830-2005-5		20 x 05
MN 2850-0803	EUROArray Dermatomycosis	08 x 03
MN 2850-0505		05 x 05
MN 2850-1005		10 x 05
MN 2850-2005		20 x 05

EUROArray for Molecular Infectious Diagnostics (Controls)

Order No.	Description	Format
MC 2540-0506	EUROArray HPV positive control	5 x 0.06 ml (0.3 ml)

EURORealTime PCR for Molecular Infectious Diagnostics (Test Systems)

Order No.	Description	Format
MP 2145-0125	**EURORealTime MTB**	25 reactions
MP 2145-0225		50 reactions
MP 2145-0425		100 reactions
MP 2530-0125	**EURORealTime HSV-1/2**	25 reactions
MP 2530-0225		50 reactions
MP 2530-0425		100 reactions
MP 2606-0125	**EURORealTime SARS-CoV-2**	25 reactions
MP 2606-0225		50 reactions
MP 2606-0100		100 reactions
MP 2606-0425		100 reactions
MP 2606-0200		200 reactions
MP 2606-1000		1000 reactions
MP 2606-0125-20	**EURORealTime SARS-CoV-2/Influenza A/B**	25 reactions
MP 2606-0225-20		50 reactions
MP 2606-0100-20		100 reactions
MP 2606-0425-20		100 reactions
MP 2606-0200-20		200 reactions
MP 2606-1000-20		1000 reactions
MP 2668-0125	**EURORealTime Zika Virus**	25 reactions
MP 2668-0225		50 reactions
MP 2668-0425		100 reactions

Additional reagents and material

ZF 1020 - 0125 -2

Product code

Product classification

- ZD: Reagents and other items for EUROIMMUN Westernblot and EUROLINE..... page 306
- ZM: Reagents and other items for EUROArray ..... page 307

Reagents and Other Items for EUROIMMUN Westernblot and EUROLINE

Order No.	Item	Format
ZD 1129-0101 A	**secondary reagents EUROLINE/Westernblot IgA**	1 reagent kit
ZD 1129-0101 E	**secondary reagents EUROLINE allergy IgE**	1 reagent kit
ZD 1129-0101 G	**secondary reagents EUROLINE/Westernblot IgG**	1 reagent kit
ZD 1129-0101 M	**secondary reagents EUROLINE/Westernblot IgM**	1 reagent kit
ZD 3001-0101 **ZD 3001-0401**	**anti-CCD absorbent**	lyophilisate, for 40 µg 4 x lyophilisate, for 40 µg
ZD 9880-0101 **ZD 9880-01500**	**Green paper (EUROLineScan)**	
ZD 9885-0116 **ZD 9885-0130**	**adhesive foil**	1 piece á 7,5 x 12,5 cm 1 piece á 12,5 x 19,9 cm
ZD 9895-0130 **ZD 9895-20030**	**incubation tray, black**	1 piece, 30 channels 200 pieces, 30 channels
ZD 9897-0130 **ZD 9897-0144** **ZD 9897-12044** **ZD 9897-20030** **ZD 9897-70010**	**incubation tray, black for the volume-reduced incubation of allergy EUROLINE test strips**	1 piece, 30 channels 1 piece, 44 channels 120 pieces, 44 channels 200 pieces, 30 channels 700 pieces, 10 channels
ZD 9898-0144 **ZD 9898-0148** **ZD 9898-3044** **ZD 9898-20048**	**incubation tray, black**	1 piece, 44 channels 1 piece, 48 channels 30 pieces, 44 channels 200 pieces, 48 channels
ZD 9899-0108 **ZD 9899-10508**	**incubation tray, white**	1 piece, 8 channels 1050 pieces, 8 channels

Reagents and Other Items for EUROArray

Order No.	Item	Format
ZM 0121-0050	WASH REAGENT 1	500 ml concentrate
ZM 0122-0012	WASH REAGENT 2	125 ml concentrate
ZM 0123-0101	EUROArray wash buffer set	1 set
ZM 0201-0150-Q	QIAamp DSP Blood Mini Kit	50 reactions
ZM 0202-0150-Q *	QIAamp Viral RNA Mini Kit	50 reactions
ZM 0203-0150-Q *	QIAamp DNA Mini Kit	50 reactions
ZM 0204-0110-Q *	EpiTect Fast Bisulfite Kit (QIAGEN) for 10 patient samples	10 samples
ZM 0210-1000-Q *	Qiagen Collection Tubes	1000 tubes
ZM 0221-0126-Q *	Qiagen Buffer AL	264 ml
ZM 0222-0450-Q *	Qiagen Buffer ATL	4 x 50 ml
ZM 0281-5001	Copan regular FLOQSwab with 1 ml eNAT transport and conservation medium (608CS01R)	50 Swabs
ZM 0282-5002	Copan L-shape FLOQSwab with 2 ml eNAT transport and conservation medium (606CS01L)	50 Swabs
ZM 0283-5001	Buccal hDNAfree FLOQSwab, Regular size tip, 20 mm Breaking Point, in tube with Active Drying System (50E010D01)	50 Swabs
ZM 9101-0168 *	Prepito NA EU Kit	168 reactions in one kit
ZM 9102-0960 *	Pre-NAT II NA EU Kit	960 reactions in one kit
ZM 9106-1100	chemagic Low Well Plates	100 plates per packaging unit
ZM 9107-1096	900 µL Cond Filter Tips	10 packs with 96 tips
ZM 9108-1096	175 µl Conduc Filter Tip	10 packs with 96 tips
ZM 9113-0101	chemagic Stands	1 piece
ZM 9999-0105	TITERPLANE reagent tray for EUROArray slides	1 piece

* For research use only, not for in vitro diagnostic use in the sense of EU directive 98/79/EC.

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