Innovations for infectious disease diagnostics

EUROIMMUN offers an extensive range of test systems for infection diagnostics, including serological assays for antibody determination and PCR-based tests for direct pathogen detection. For the growing field of emerging diseases, EUROIMMUN boasts one of the largest portfolios of antibody tests worldwide to support diagnosis and surveillance of upsurging viral and parasitic infections.

EUROIMMUN has been creating innovative solutions for medical laboratory diagnostics for more than 35 years, with infection diagnostics among its core competencies. EUROIMMUN's products are based on a broad range of technologies and largely developed and produced in-house. Its serology range includes enzyme-linked immunosorbent assays (ELISA), chemiluminescence immunoassays (ChLIA), indirect immunofluorescence assays (IFA) and immunoblots to detect antibodies against many different viruses, bacteria and parasites. Special avidity formats allow differentiation of acute from past infections, and cerebrospinal fluid assays support diagnosis of central nervous system infections. For direct pathogen detection EUROIMMUN has developed multiplex microarrays and real-time PCR tests for a range of parameters. All analyses can be fully automated using state-of-the-art instruments and software for increased efficiency and standardisation. EUROIMMUN infection products are used in many medical fields – for example, respiratory diseases, gastrointestinal infections, tick-borne diseases, vaccine-preventable diseases, sexually transmitted infections, pregnancy-relevant infections, mycoses, as well as emerging diseases and parasitic infections.

Emerging diseases

Emerging infectious diseases present a serious global health threat due to rapidly increasing incidence and/or geographical range. Pathogens transmitted by arthropods such as mosquitos and ticks are among the most common causative agents of human disease worldwide and have become a growing concern. Arboviruses mutate and adapt easily, leading to frequent outbreaks. Parasitic infections such as malaria also cause a huge burden of disease in different parts of the world. Effective diagnostics and surveillance depend on reliable, simple-to-use and easily accessible assays for determination of specific antibodies and/or pathogen genetic material.

Serological analysis

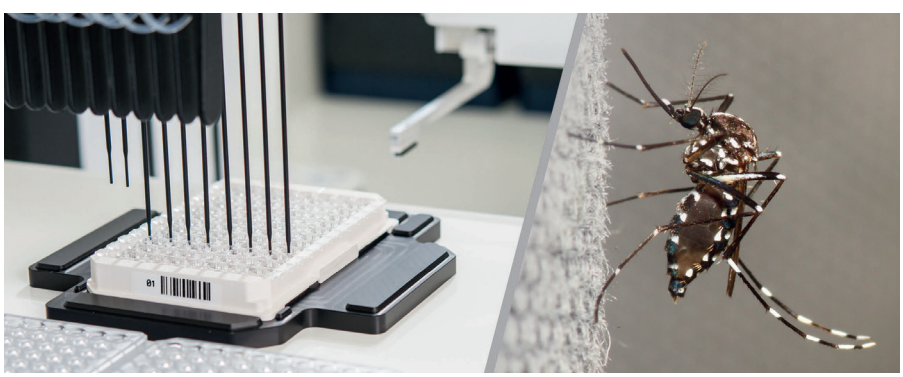
A mainstay of serological analyses is ELISA, which enables fast, easy and quantitative antibody detection. ELISAs support diagnostics and are also suitable for epidemiological studies to monitor pathogen spread and responses to vaccines.

EUROIMMUN ELISAs provide highest detection sensitivity and specificity due to use of optimised recombinant or native antigens. Different parameters can easily be incubated in parallel due to largely exchangeable reagents and standardised incubation conditions. The IgM tests include RF absorbent in the sample buffer to increase the informative value of results. The assays can be fully automated on established instruments like the EUROLabWorkstation ELISA or EUROIMMUN Analyzer I or I-2P. Further test formats available for emerging disease diagnostics are IFA and immunoblots.

EUROIMMUN's serological portfolio for emerging diseases includes CE-marked assays for detection of IgG and IgM antibodies against chikungunya virus, Crimean-Congo haemorrhagic fever virus, dengue virus 1– 4, hantavirus, Japanese encephalitis virus, Mayaro virus, MERS coronavirus, sandfly fever virus, SARS coronavirus 2, tick-borne encephalitis virus, Usutu virus, West Nile virus, yellow fever virus and Zika virus, as well as the parasites Echinococcus, Leishmania donovani, Plasmodium, Schistosoma, Strongyloides, Toxocara canis and Trypanosoma cruzi.

Molecular detection

As part of its molecular detection range, EUROIMMUN offers PCR-based test systems for several important emerging pathogens. For example, the EUROArray ArboCDZ (research use only) provides multiparameter direct detection of chikungunya, dengue and Zika viruses, which are all growing in incidence and range due to increased urbanisation and international travel. A further new real-time PCR test (to be launched soon for research use only) enables sensitive identification of Candida auris as well as determination of the pathogen's susceptibility to echinocandins. C. auris is increasingly multidrug resistant and is a growing concern in healthcare facilities.



EUROIMMUN ELISAs provide high sensitivity and specificity due to the use of optimised antigens.

www.euroimmun.com