

SYMPOSIUM 3 – INFECTIOUS DISEASES

FOCUS: LATEST TECHNOLOGIES IN DIAGNOSTICS

Molecular Genetics Microarrays in Disease Diagnostics

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Molecular genetic analysis is gaining new momentum in diagnostics as the genetic components behind many diseases such as coeliac disease, thrombosis, Alzheimer's diseases, ankylosing spondylitis and others have been characterized. This paved the way for the development of specialized diagnostics microarrays such as EUROArray to analyze the genetic susceptibility through highly sensitive and specific detection of disease-associated alleles. The EUROArray system is designed to greatly improve molecular genetic analysis in diagnostic laboratories: (i) innovative microarray technology employing sophisticated EUROArray constellations with integration of multiple controls systems to ensure unambiguous identification of relevant alleles and subtypes; (ii) direct procedure for DNA extraction which eliminates the DNA isolation step that drastically reduces hands-on time and material costs; and (iii) the repertoire of diagnostic assays (e.g., HLA-B27, HLA-DQ2/DQ8, FV/ FII+/ MTHFR, heomochromatosis, APOE, HPV, sexually transmitted diseases, and so on).

Sexually transmitted infectious (STI) agents are spread predominantly by sexual contact through vaginal, anal and oral sex. More than 1 million STIs are acquired everyday worldwide. Timely detection of these pathogens and subsequent treatment can prevent consequential damage, which can lead to severe chronic diseases or infertility. In addition to the direct consequences for the patient, infection with most of the above pathogens during pregnancy can lead to intrauterine death, premature birth or damage to the fetus. Many pathogens can also be transmitted to the newborn during birth, causing severe postnatal infections. PCR-based direct detection is useful for detection of STI pathogens that are difficult or impossible to cultivate. Low titre pathogens can also be reliably identified during the amplification of the pathogen DNA. A combined multi-parameter detection of several pathogens is especially useful in cases such as clarifying ambiguous clinical findings, identifying asymptomatic infections as part of pregnancy healthcare, and identifying multiple infections.

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