

appecon GmbH and Zuyderland Medical Centre join forces to integrate IT solutions to expedite the molecular analyses of patient laboratory outcomes in routine pathology

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Analyses of genetic biomarkers as a requirement for the determination of patient specific therapy have transcended most diagnostic laboratories in both academic and regional hospitals. The advances of affordable technologies such as PCR-based molecular assays (e.g. companion diagnostics) and Next Generation Sequencing (NGS) have enabled personalised or precision medicine to become more prevalent in routine care. This signifies that the genetic make-up of the patient is increasingly forming the basis as to which type of medical treatment a patient will receive from his/her doctor.

In order to expedite the outcomes of such analyses in routine diagnostic workflows, appecon GmbH and the Department of Molecular Pathology at Zuyderland Medical Centre are joining forces to validate a robust and revolutionising information technology platform called **aixonomics™**. This platform enables automation of genetic mutation calling of PCR-based molecular assays. Dr. Inhua Muijers-Chen, Head of Life Sciences Innovation at appecon, claims that “for hospitals where accessibility to NGS molecular tests are yet limited, aixonomics™ provides a beautiful solution to shorten the time necessary for identifying the genetic mutations present in patient samples. This simplification in complex interpretation of biological raw data is a result of implementing IT based algorithms and machine learning concepts developed by appecon. The time saving aspect alone of aixonomics™ should help in-house laboratories keep labour costs down.”

The evaluation phase of aixonomics™ is underway at Zuyderland Medical Centre. Dr. Ruud Clarijs, Head of Clinical Pathology at Zuyderland MC, Heerlen, declares that “aixonomics™ will enable us to analyse patient samples for genetic mutations present in tumour genes much more quickly than the manner we are currently employing. As the number of genes to be analysed per patient tumour case continues to expand, we are definitely enthusiastic to receive and implement the support of IT based technology to expedite our daily work while ensuring quality results.” The close collaboration between Zuyderland and appecon makes sure that aixonomics™ is designed to really complement the workflow of a molecular pathology laboratory.

Attending laboratory analysts and molecular pathologists are intensifying the validation of aixonomics's post-PCR analytical feature in the identification of specific mutations in lung cancer genes BRAF and KRAS based on high resolution melting curves generated by the laboratory's PCR platform, LightCycler® 480 (Roche). appecon's scientific and informatics team has announced that their Lung Cancer Module, including genetic mutation calling for EGFR, KRAS, BRAF, ROS-1, and ALK fusion abnormalities, will be completed by Q2 2016.

Department of Clinical Pathology, Zuyderland Medical Centre, Heerlen, the Netherlands:

Zuyderland Medical Centre is the largest regional hospital in the Netherlands. The Clinical Pathology Department at Zuyderland performs histology, immunochemistry, in situ hybridisation, and molecular testing of tumour samples for tumour characterisation. The analyses of these patient samples enable the diagnosis of the developmental stage of the cancer, and identify possible targeted therapy based on genetic profiling. The Molecular Pathology Department has over the past years acquired and broadened their expertise in the analyses of genetic elements using Roche's LightCycler® 480 high resolution melting (HRM) technology.

appecon GmbH, Aachen, Germany:

appecon is one of the five "Preferred Providers" of a big insurance company in Germany and was founded in the end of 2011. In this role, appecon has a long history in big data management and big data analyses of historical data. Since 2015, appecon is venturing out in applying its know-how in big data management and data mining based technological innovations to healthcare. appecon's ambition is to accelerate routine clinical use of genomics data for better diagnosing and treating patients through the personalised care concept via its aixonomics™ platform. aixonomics™ aims to integrate a big data analytical package compatible to current diagnostics procedures undergoing in laboratories at hospitals. The direct use of aixonomics™ by oncologists and molecular pathologists ensures patient data safety and the continued use of molecular genomics in the day-to-day clinical practice.

More information under: www.aixonomics.com

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