A breakthrough PCR-free technology for diagnosing liver injury

DestiNA Genomics Ltd. has developed a unique, patented and reliable chemistry that delivers direct, PCR free and highly accurate detection of nucleic acids. For the first time, simplified direct detection and quantification of microRNA biomarkers is now possible, opening up this biomarker class to IVD assay development.

DestiNA's technology uses patented aldehyde-modified natural nucleobase chemistry (so called 'SMART 'nucleobases) and customised probes [1-2]. DestiNA's first assay, to directly detect and quantify microRNA-122 has been recently tested successfully on both the Luminex MAGPIX and FLEXMAP-3D platforms using untreated human serum samples. Accurate, direct quantification of microRNA-122 in serum, without extraction of RNAs, generation of cDNA and amplification steps was demonstrated, from patients suffering paracetamol induced acute liver injury, plus healthy controls.

With its PCR free testing, requiring only a single technician to operate, this novel assay promises to transform and expand routine clinical diagnostic testing, as well as simplifying testing for liver injury during drug development. Handling of patient serum samples through to analysis can be performed at room temperatures without any refrigeration if desired, using DestiNA's proprietary lysis and stabilisation buffer. MicroRNA-122 is a highly liver specific biomarker, providing earlier and more accurate information on liver damage than if testing for ALT/AST [3-4]. The benefits of assay reproducibility, quantification, ease of use and savings in laboratory time required per assay can be extended to other important microRNA biomarkers valuable in research and for future IVD assays.

References

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