

SEMINARIO

LNA™-based technology: A promising tool for identifying microRNA as biomarkers for disease and toxicology studies in biofluids

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microRNAs (miRs) are small RNAs (21-23nt) becoming recognized as a promising new class of biomarkers for toxicology studies. miRs are highly stable in common sample types (e.g., plasma, serum, urine etc.) and their levels are dramatically altered in response to drug-induced toxicity, representing good candidates for novel site-specific biomarkers in this field.

We have developed an LNA™-based microRNA qPCR platform for detection of miRs with unparalleled sensitivity and robustness, enabling miR profiling in biofluids, where levels are extremely low. The platform uses a single RT reaction to conduct full miRNome profiling and allows high-throughput screening of miRs without the need for pre-amplification.

An extensive quality control and data analysis pipeline has been implemented in order to secure high quality data from biofluids. We will present our approaches to isolating the limited amount of RNA present in biofluid samples like urine or plasma, and monitoring RNA isolation efficiency and presence of undesired inhibitory components. We demonstrate how pre-analytical variables such as hemolysis can affect the miR profile, and how we monitor these variables. We also discuss how we address biofluid specific data analysis challenges such as normalization, thresholding and background determination. Furthermore, we will prove that when close attention is focused on these important parameters the system can be quickly and robustly applied in biomarker discovery and validation projects.

Fecha: Lunes, 17 de febrero de 2014, 12:30 h

Lugar: Instituto BioDonostia - Aula de Formación
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Al finalizar el seminario, tendremos el gusto de compartir un cóctel con todos los asistentes a la salida del aula.