SEMINARIO

New LNA™ based technologies for identification and quantification of microRNA biomarkers in development and disease.

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The field of microRNA represents a new dimension to global regulatory networks that is important for cell physiology. microRNAs are small non-coding RNAs predicted to regulate the expression of up to 30% of all protein-coding genes by binding to sites within the 3' UTR of mRNAs. Expression profiling has demonstrated that microRNAs are significantly more accurate for classification of cancer subtypes than protein coding genes, and shows their great potential as diagnostic and prognostic tools for cancer and other diseases.

The study of microRNA requires special approaches to sensitively and accurately detect such small molecules. Exiqon has developed several technological platforms based on Locked Nucleic Acid (LNA™) to detect microRNAs and uncover their functions. We will describe a revolutionary new LNA™-based microRNA quantitative PCR system that opens new possibilities for quantitative profiling of up to 730 miRNAs in very limited samples like blood serum/plasma and small laser capture micro-dissected (LCM) sections from formalin fixed tissue specimens – without pre-amplification.

With the focus on cancer diagnostics we will show several cases studies where Exiqon has used LNA™-based in-situ hybridization techniques and microRNA expression signatures derived from normal and colon cancer LCM samples to identify specific cancer microRNA biomarkers that will be used for both diagnostics and prognostics. We will also show how the LNA™ Universal RT microRNA PCR System has enabled discovery of novel circulating microRNA biomarkers for early detection of colorectal cancer from patient blood plasma samples. This is an approach that will change the way we predict and diagnose various diseases in the future!

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