MicroRNA expression analysis by LNA™-enhanced real-time PCR


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Summary
MicroRNAs (miRNAs) comprise a family of highly conserved small non-coding RNAs (~22 nt). As regulators of post-transcriptional gene expression, miRNAs play an essential role in many parts of development, differentiation, and physiological processes. It is now established that altered miRNA expression profiles are associated with a number of different diseases including heart disease, neurological disorders and human cancers. This suggests the use of miRNAs as a novel class of biologically important biomarkers for disease diagnosis and prognosis. The study of expression and functional effects of miRNAs is complicated by their small size and limited availability of sample. We have developed a real-time PCR method for quantification of miRNAs. The miRCURY LNA™ microRNA PCR system offers the possibility for highly sensitive and specific quantification of miRNA expression levels from total RNA. (Details please see accompanying poster).

Figure 1: Schematic overview of the miRCURY LNA™ PCR System

Figure 2: miRCURY LNA™ PCR Endogenous control primer sets

Figure 3: Expression profile of Endogenous controls

Figure 4: Average expression stability of Endogenous controls in three different sample combinations

Figure 5: Real-time PCR normalization with miRCURY LNA™ Endogenous controls