

Novel Method of Profiling MicroRNA's

Researchers at the University of South Florida have invented a novel microRNA (miRNA) quantification method to profile the expression levels of miRNAs using a universal probe and a universal RT-primer (UPR).

MiRNAs are 18 to 25 nucleotides, non coding RNA's that inhibit the translation of their target mRNAs. Most, if not all genes may be under direct or indirect control of miRNAs. MiRNAs are involved in a remarkable spectrum of biological pathways such as cell development, proliferation and apoptosis. Detection and quantification of miRNAs is essential for the study of miRNAs. Several methods based on qRT-PCR have been developed to detect and quantify miRNA. Similarly northern hybridization, microarray analysis and cloning have been used for the detection and quantification of miRNAs.

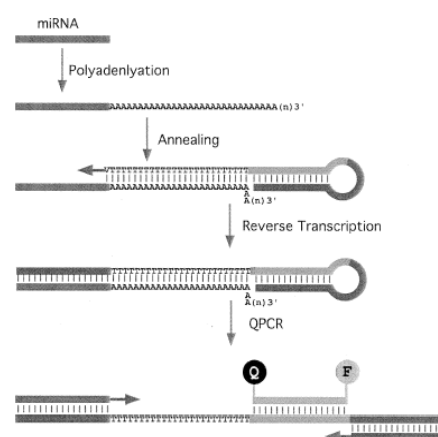
Our inventor's have developed a simple, highly sensitive and specific method for the quantification of miRNAs which can be used to profile the expression levels of mRNAs using a universal probe and universal RT primer. This method is economical, and convenient to use and is advantageous over the existing methods as it uses a highly specific universal poly-T primer to prime RT reaction for the detection of all miRNAs thus contributing to the specificity of the method. A universal probe is used for the detection of miRNAs instead of an individual specific miRNA probe which can detect only one miRNA and has to be added to individually to each reaction.

This invention has its uses in research and development, and is most beneficial to the life sciences industries involved in designing methods for the detection of RNAs.

ADVANTAGES:

- High specificity
- Simple, economical and convenient
- Uses a universal Taqman® probe

Universal Assay



Schematic Representation of MicroRNA qRT-PCR Assay Using Universal Probe and RT Primer