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Simplified and improved RNA workflow tools to study RNA

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Micro RNAs (miRNAs) along with small interfering RNAs and several classes of non-coding RNAs (example snRNA, snoRNA and piRNA) have widespread impact on a variety of biological processes. miRNAs are an important class of small RNAs that regulate gene expression. While most of the known mammalian miRNAs have been characterized using cloning and sequencing, there are still many with unknown functions. In general, the analysis of small RNAs and their expression is a critical part of many research studies due to the significant role played by miRNA in controlling vital pathways such as growth, development and death. Much interest has been directed at studying the expression of miRNA in cells and tissues as well as bodily fluids. Increasing effort is directed into bio-informatic prediction of new miRNA sequences. A combination of computational biology tools and molecular cloning methods is being used for characterizing additional miRNAs. However, isolating the mature miRNA fraction is the first critical step in cloning these small regulatory molecules. The presentation will focus on tools developed to study small RNA including non-organic reagent based purification methods that ensure high yields of pure RNA protected from RNase degradation and accurately quantify RNA to use in varied down-stream applications such as quantitative RT-PCR, arrays and sequencing. While most traditional RNA isolation methods are not very efficient at recovering these smaller RNAs that contain 17-24 nucleotide mature miRNA, the RNA workflow employed along with this purification method ensures high quality total RNA with enhanced miRNA enrichment from a variety of sample types.

Biography

Gopal B Krishnan completed his PhD from the National Institute of Immunology, New Delhi and has worked on Early Embryonic Development and Role of Bone Morphogenetic Proteins in his Post-doctoral Fellowship at the University of Wisconsin, Madison. Before joining Promega Corp, he worked as the Team Lead for Development of DNA and siRNA transfection reagents at Mirus Bio. Currently, he is a Global Product Manager of genomics products at Promega Corp., Madison, WI. He has published over thirty peer reviewed articles, chapters and abstracts. In addition he has successfully launched five new life science research products.

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