Special Issue

Complexities in microRNA Function: Nuclear Roles, Sequence Variants and Non-canonical Gene Targeting

Message from the Guest Editor

MicroRNAs have well established functions within the cytoplasm, acting as the recognition component of the RNA-induced silencing complex (RISC) to suppress gene expression through a combination of RNA target destabilisation and translational inhibition. However, there is a growing body of evidence suggesting additional complexities in microRNA function. For example, there are abundant mature microRNAs and RISC components within nuclei, though their roles and significance are less well understood. High-throughput sequencing-based studies have also revealed abundant naturally occurring microRNA sequence variants (isomiRs) and a diverse array of possible target binding "rules" through which microRNAs can interact with potential targets. This Special Edition highlights some of these "non-canonical" functions and complexities of microRNAs, beyond the traditional view of single microRNA sequences interacting with target mRNAs through well-defined "seed-based" interactions within the cytoplasm.

Guest Editor

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