## S59-6 Assembly and function of small RNA effector complexes

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small RNAs, including small interfering RNAs (siRNAs) and microRNAs (miRNAs), regulate diverse biological processes by repressing expression of their target genes. These small RNAs do not work alone, but rather function via effector complexes, composed of a small RNA and multiple proteins. These effector complexes are called RNA-induced silencing complexes, or RISCs.

At the core of RISC is a member of Argonaute family proteins. RISC assembly follows a complex, ordered pathway, which includes multiple ATP-dependent steps. By using *Drosophila* and human cell cultures as models, we have been investigating RISC assembly and function. Our data suggest that small RNAs are sorted into distinct Argonaute proteins according to the structures of their double-stranded precursors. Moreover, RISC assembly pathways differ each other, and each Argonaute protein displays distinct functionality.