New tool for RNA silencing

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Anti-sense reagents have been developed for *C. Elegans* micro RNA. Researchers writing in BioMed Central's open access journal *Silence* have created the first class of reagents to potently and selectively inhibit miRNAs in this widely used model organism.

Wen-hong Li, from the University of Texas Southwestern Medical Center, USA, worked with a team of researchers including Dr. Genhua Zheng and Dr. Victor Ambros (University of Massachusetts Medical School) to develop this latest addition to the genetics toolkit.

He said, "Caenorhabditis elegans has long been used as a model organism for studying the regulation and function of small non-coding RNA molecules, and yet no antisense reagents have been available to reliably inhibit miRNAs in worms. Our fluorescently labeled reagents were synthesized by conjugating dextran with 2'-O-methyl oligoribonucleotide, and can be conveniently introduced into the germline of adult hermaphrodites and are transmitted to their progeny".

Li's team found that their new reagents efficiently and specifically inhibited targeted miRNA in different tissues, including the hypodermis, the vulva and the nervous system. They can be used combinatorially to inhibit more than one miRNA in the same animal.

They conclude, "Combined with numerous mutants or reporter stains available, these reagents should provide a convenient approach to examine genetic interactions that involve miRNA, and may facilitate studying functions of miRNAs, especially ones whose deletion strains

are difficult to generate. Further, the remarkable efficacy of these antisense reagents seen in worms also suggested C. elegans as a powerful, convenient, and economical biological system to facilitate developing new chemistry and novel probes for studying miRNA and other small non-coding RNAs".

More information: Inhibiting miRNA in Caenorhabditis elegans using a potent and selective antisense reagent, Genhua Zheng, Victor Ambros and Wen-hong Li, *Silence* 2010, 1:9. doi:10.1186/1758-907X-1-9

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