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[Cell Research: Role for plant miRNAs in mammalian physiology](#)

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Plant microRNAs (miRNAs) contained in food can enter mammalian blood and tissues where they can then regulate the host's genes and thus its physiology, according to research published online this week in *Cell Research*.

Chen-Yu Zhang and colleagues show that plant miRNAs can pass through the gastrointestinal tract in mice, remaining intact and functional. The miRNAs can then enter the circulatory system or various organs, such as the liver, where they can regulate the expression of specific target genes in the mouse. For example, they demonstrate that a plant-derived miRNA could inhibit the expression of a low-density lipoprotein (LDL, or "bad" cholesterol) receptor adaptor protein in the liver and consequently decrease LDL removal from mouse plasma.

The group find that, with their robust stability and highly conserved sequences, secreted miRNAs can act in a cross-species and cross-kingdom manner. These miRNAs may, therefore, represent a new class of universal modulators that mediate animal-plant interactions at the molecular level. Although further work is needed, their findings may have far-reaching implications to human health and metabolism as the plant miRNAs may represent essential functional molecules in food and also provide a novel therapeutic strategy for the treatment of diseases.

Author contact:

Chen-Yu Zhang (Nanjing University, China)
Tel: +86 25 8368 6234; E-mail: cyzhang@nju.edu.cn

Editorial contact:

Dangsheng Li (*Cell Research*, Shanghai, China)
Tel: +86 21 5492 2951; E-mail: dqli@sibs.ac.cn