

Regulation of maternal miRNAs in early embryos revealed

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The Center for RNA Research at the Institute for Basic Science (IBS) has succeeded in revealing, for the first time, the mechanism of how miRNAs, which control gene expression, are regulated in the early embryonic stage.

The IBS researchers have verified that maternally inherited miRNAs are highly adenylated at their ends in mature oocytes and early embryos. This maternal miRNA adenylation is extensively conserved in fly, sea urchin and mouse. The researchers have also identified that the enzyme called 'Wispy' is required to catalyze miRNA adenylation and to reduce miRNA abundance.

"This is the first discovery of an unusual mechanism that can explain how maternal miRNAs are regulated," explains Professor V. Narry Kim, both the director of the Center for RNA Research at IBS and the professor of the School of Biological Sciences at the Seoul National University. She elucidates the meaning of the research results as "A clue to help unveil the important biological phenomenon that takes place in the early development stages of the embryo, which has not been explored until now."

More information: "Adenylation of Maternally Inherited MicroRNAs by Wispy." *Molecular Cell*, published online, (www.cell.com/molecular-cell/abstract/S1097-2765 %2814%2900795-3), DOI: [dx.doi.org/10.1016/j.molcel.2014.10.011](https://doi.org/10.1016/j.molcel.2014.10.011)

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