

MicroRNAs as tumor suppressors

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In the May 1st issue of *Genes & Development*, Drs. Yong Sun Lee and Anindya Dutta (UVA) reveal that microRNAs can function as tumor suppressors in vitro.

"Overexpression of HMGA2 is an important feature of many medically important tumors like uterine fibroids," explains Dr. Dutta. "It is very exciting to realize that microRNAs have an important role in suppressing the overexpression of HMGA2, and so may have a role in the causation and perhaps the cure of a disease that is responsible for the vast majority of hysterectomies in the Western world."

Studying chromosomal HMGA2 translocations that are associated with human tumors, the researchers found that in normal cells, a microRNA called let-7 binds to the 3' end of the HMGA2 mRNA transcript and suppresses its expression in the cell cytosol. However, chromosomal breaks that shorten the 3' end of the HMGA2 transcript, and prevent let-7 binding, result in aberrantly high levels of HMGA2 expression and tumorigenesis. This paper establishes that HMGA2 is a target of let-7, and that the let-7 microRNA functions as a tumor suppressor to prevent cancer formation in healthy cells.

Source: Cold Spring Harbor Laboratory

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