

Researchers discover antitumor molecule that originated within oncogene

June 5 2012

A common point in all human tumors is that they produce an activation of oncogenes, genes that cause cancer and they also cause a loss of function of the protective genes, called anti-oncogenes or tumour suppressor genes. Normally both categories of anticancer and procancer genes are in different regions of our chromosomes.

A study coordinated by Manel Esteller, Director of the program of epigenetics and [cancer biology](#) at the Bellvitge Institute for Biomedical Research (IDIBELL), Professor of genetics at the University of Barcelona and ICREA researcher, has discovered the existence of an antitumor molecule that originates within an oncogene. The finding is published this week in the *Nature Structural & Molecular Biology* journal.

The identified anti-oncogene is along non-coding ribonucleic acid (lncRNA), ie a molecule that does not produce protein itself but is responsible for regulating the expression of other proteins. Specifically, the identified molecule is produced in a cancer-causing gene (SMYD3) as its role in healthy cells is to inhibit pro-cancer action of the [oncogene](#).

If you enter this fragment of ribonucleic acid on cancer cells growing in laboratory or in human tumors implanted in animals for research is able to block cancer growth. "We believe this discovery will be the starting point to find many other oncogenes and anti-oncogenes that coexist in regions of our genome, that when their life together deteriorates, contribute to the development of human tumors," said Dr. Esteller.

More information: Intronic RNAs mediate EZH2 regulation of epigenetic targets. Sònia Guil, Marta Soler, Anna Portela, Jordi Carrère, Elena Fonalleras, Antonio Gómez, Alberto Villanueva and Manel Esteller. *Nature Structural & Molecular Biology*, Early Edition, May 21, 2012.

Provided by IDIBELL-Bellvitge Biomedical Research Institute

Citation: Researchers discover antitumor molecule that originated within oncogene (2012, June 5) retrieved 27 April 2024 from

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