

A biochemical process in plants is imitated to curb the reproduction of colon cancer tumor cells

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A University of Cordoba research team has developed a tool to erase molecular tags that silence genes involved in tumor growth. Plants have provided a new avenue in curbing tumor growth. The results were obtained by the University of Cordoba BIO301 Epigenetics and DNA Repair research team.

This team stably expressed a plant protein in cancer cells, altering the expression of genes that cause [tumor growth](#). The study, published in the journal *Epigenetics*, was headed by researchers Teresa Morales Ruiz and Maria Victoria García Ortiz, who have done laboratory work with colon tumor cells, and used genomic analyses on a large scale.

According to the authors, this is "a protein which could be used as a tool to erase molecular tags that silence genes. In this way, tumor behavior in [cancer cells](#) could be partly reverted." These [plant enzymes](#) are the first to act on a biochemical pathway that directly eliminates the tags in DNA that silence the [genes](#). The final result is that the DNA is free from those markers. In humans, the same process has not been described, though similar pathways exist. These pathways include more reactions and the marks are erased indirectly. Hence, the key point of this project was "using the activity of these plant enzymes so as to reprogram human cancer DNA."

The results obtained by the University of Cordoba research team open

up new options to study gene expression not only in pathologies such as cancer but also in normal situations.

More information: Teresa Morales-Ruiz et al, DNA methylation reprogramming of human cancer cells by expression of a plant 5-methylcytosine DNA glycosylase, *Epigenetics* (2017). [DOI: 10.1080/15592294.2017.1414128](https://doi.org/10.1080/15592294.2017.1414128)

Provided by University of Córdoba

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