Researchers Identify Mechanism That Causes Cancer to Metastasize

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The results of the study, headed by Manel Esteller, the director of the Cancer Epigenetics and Biology Program at the Bellvitge Biomedical Research Institute in Barcelona, Spain, are being published in Nature Medicine magazine.

The study was done on melanomas, but the researchers found that this mechanism is also found in colon and breast cancer.

Metastasis is responsible for 90 percent of cancer deaths, and so understanding the mechanisms responsible for this process is one of the prime objectives of the research, Esteller said.

One of the tumors with the greatest ability to metastasize is melanoma, the incidence of which has increased in recent decades due to greater exposure to the sun.

The researchers, a group that also includes scientists with La Fe Hospital and the General Hospital of Valencia, compared the genetic material in the primary tumor's cells with the genetic material from metastasized cells in the same patient.

Looking for differences, the researchers found that among all a patient's genes, there is just one that clearly differs between those two groups, Esteller told Efe.

That gene, known as TBC1D16, in the initial tumor is inactive or dormant, while in the metastasized phase it is active. "This gene turns on like a lightbulb to guide metastasis and

cause (those cells) to escape from their birth site," Esteller said.

Specifically, what this gene does is to activate two more potent oncogenes, BRAF and EGFR, thus stimulating metastasis.

There is already a drug on the market that acts against these oncogenes and another is currently in clinical trials.

Esteller said that the next step is to convince pharmaceutical companies to include the TBC1D16 marker in their clinical trials.