

The loss of a protein makes 'jump' the tumor to the lymph node

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Metastasis is responsible for 90% of deaths in patients with cancer. Understanding the mechanisms responsible for this process is one of the top goals of cancer research. The metastatic process involves a series of steps chained where the primary tumour invades surrounding tissues and ends spreading throughout the body. Ones of the first tissues undergoing metastasis are the lymph nodes surrounding the tumour.

A study, led by the researcher at the Bellvitge Biomedical Research Institute (IDIBELL), Manel Esteller, published in the *Journal of Pathology*, had identified a mechanism that explains how [cancer cells](#) escape from its original site to the [lymph nodes](#). Investigations have uncovered that metastatic tumour cells that grow in the lymph nodes of patients with melanoma and head and neck tumours lose the activity of a protein called cadherin-11.

The normal function of this protein is to act as the anchor of a ship to fix the cells in a specific position and prevent movement. Inactivation of cadherin-11 gene causes the loss of this fixation and [tumour cells](#) "jump" to neighboring organs and structures, such as lymph nodes.

The study is an example of translational and multidisciplinary research, involving basic research laboratories, the medical oncology service at the Catalan Institute of Oncology (ICO) and the Pathology Service of the Bellvitge University Hospital.

The study coordinated by the director of the Cancer Epigenetics and Biology Program at IDIBELL, ICREA researcher and professor at the University of Barcelona, Manel Esteller, also proposes that the process can be reversed because, in models in vitro and in vivo, the recovery of [protein activity](#) cadherin-11 caused a slowing of tumour growth and decreased ability to generate metastases.

This possibility needs to be studied in international clinical trials, but it is a promising starting point in studying the biology of metastasis and how to act therapeutically in this area.

More information: Carmona FJ, Villanueva A, Vidal A, Muñoz C, Puertas S, Penin RM, Gomà M, Lujambio A, Piulats JM, Mesía R, Sánchez-Céspedes M, Manós M, Condom E, Eccles SA, Esteller M. Epigenetic Disruption of Cadherin-11 in Human Cancer Metastasis. *The Journal of Pathology*. 2012 Feb 28. [doi: 10.1002/path.4011](https://doi.org/10.1002/path.4011)

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