New epigenetic drug against Mantle Cell Lymphoma

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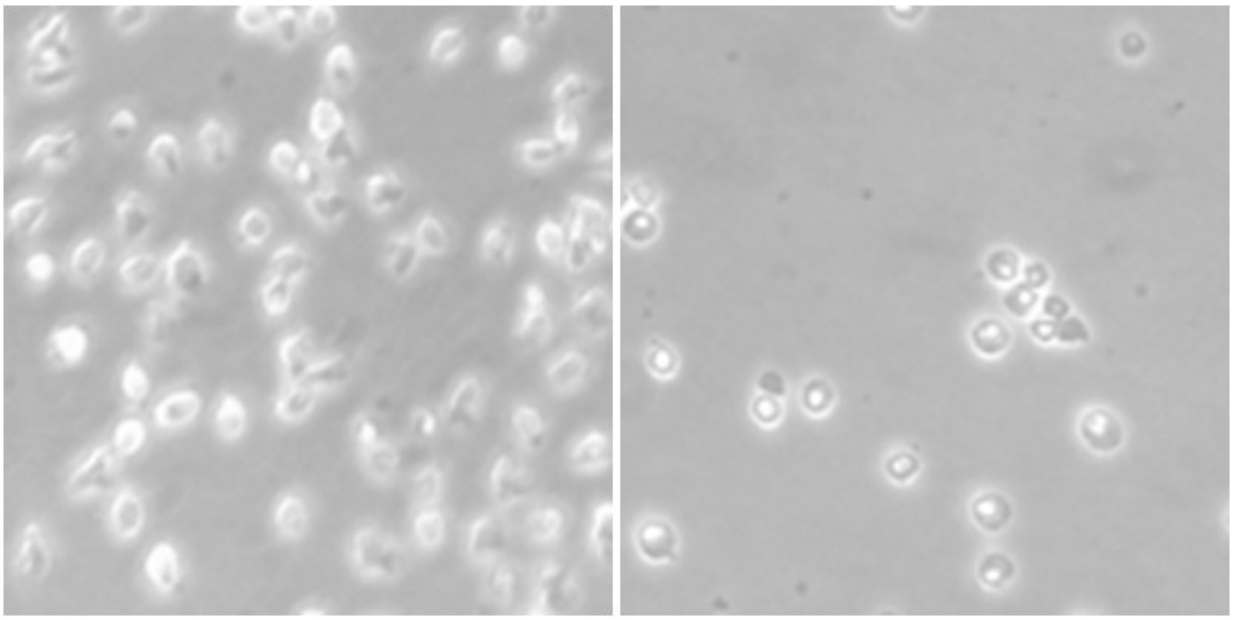

Cells of a patient with mantle lymphoma before (left image) and after (right image) of treatment with the drug. Inhibition of cell growth is observed. Credit: IDIBELL

A new study by doctor Manel Esteller, Director of the Epigenetics and Cancer Biology Program (PEBC) of the Bellvitge Biomedical Research Institute (IDIBELL), ICREA Researcher and Professor of Genetics at the University of Barcelona, presents an epigenetic drug capable of slowing down cell growth in mantle cell lymphoma (MCL), a type of

cancer characterized by its aggressive behavior, its delayed diagnosis, its growth in different organs, and its origin from the B lymphocytes. The research results, published in *Haematologica*, the European Hematology Society (EHA) scientific journal, may be an answer to current medical need for new treatments that increase long-term survival in this disease.

"Our laboratory is interested in finding new compounds with epigenetic activity and anti-tumor effects. Working together with organic chemists and the Quimatryx company, we obtained a molecule that inhibits the HDAC6 gene, a protein that chemically modifies another protein by acetylation," says Manel Esteller, main author of the study. The research has also been carried out with the clinical collaboration of the Hematology Services of the Catalan Institute of Oncology (ICO) in Hospitalet and Badalona, as well as the Josep Carreras Institute (IJC).

"After testing it on several types of cancer, we realized that the efficacy of the new molecule was at its peak in this type of lymphoma. This beneficial effect was observed in cultured cells, murine studies and cells extracted from patients. In addition, the substance is very specific when it comes to reaching its target, with apparently little toxicity to healthy cells of the same patient, such as T lymphocytes," adds the IDIBELL researcher, regarding the study in *Haematologica*.

Twelve percent of all cancers worldwide are linked to blood cells, including leukemia, lymphoma and myeloma. A new patient is diagnosed every two minutes. Although some types of these hematological oncological diseases are curable, for others, there are no sufficiently effective treatments. "What makes us especially happy in this case is the possible use of the drug in clinical trials for next year," concludes Esteller.

More information: Montserrat Perez-Salvia et al, In vitro and in vivo activity of a new small-molecule inhibitor of HDAC6 in mantle cell

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