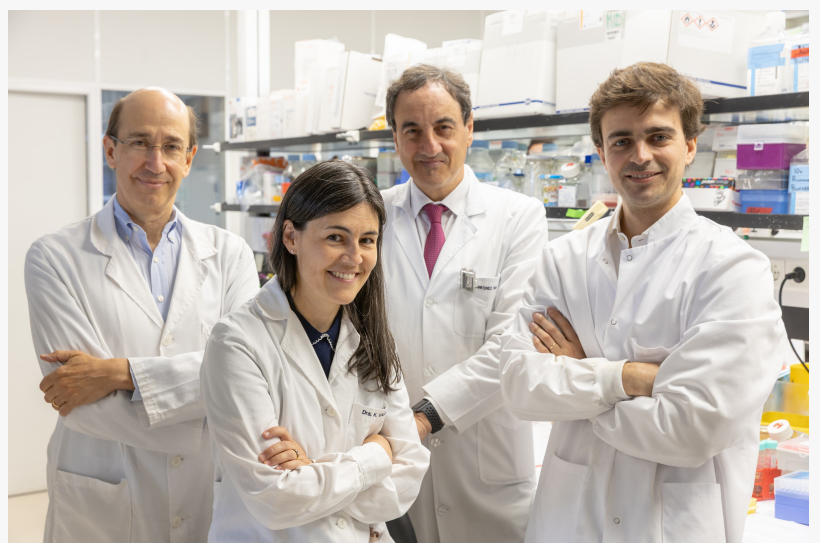


A novel therapy eradicates triple negative breast cancer recurrence in preclinical models

The results achieved by Cima Universidad de Navarra show that ENPP1 blockade increases the efficacy of radiotherapy abrogating the primary tumor and metastases

PAMPLONA, SPAIN, July 31, 2025 /EINPresswire.com/ -- A study conducted by scientists at the Cancer Center Clínica Universidad de Navarra (CCUN) in preclinical models has shown that ENPP1 blockade enhances the radiosensitivity and eradicates the recurrence of triple-negative breast cancer—the most aggressive subtype—as well as the spread of tumor cells to distant organs.



From left to right, Dr. Fernando Lecanda, Dr. Karmele Valencia, and Dr. Rafael Martínez Monge, from the Adhesion and Metastasis group at Cima, with Dr. Borja Ruiz-Fernández de Córdoba, also author of the study and postdoctoral researcher at the University

Results shed light on a critical role played by ENPP1 invigorating tumor cells not only by promoting an increased treatment resistance but also by thwarting the antitumor immune attack leading to tumor persistence and eventually metastasis formation. These findings have been recently published in *Signal Transduction and Targeted Therapy* by scientists of the [Adhesion and Metastasis Group at Cima Universidad de Navarra](#).

Triple-negative breast cancer, the most aggressive of breast cancer subtypes, accounts for about 15% of all cases, represents an unmet clinical need, especially in the metastatic setting where therapeutic solutions are limited.

"In a previous study, we identified that the ENPP1 promotes breast cancer recurrence after surgical removal of the tumor and subsequent irradiation of tumor bed to delete residual cells. Under such aggressive treatment conditions, ENPP1 confers an unanticipated resistance to the stress induced by ionizing radiation. We have now disentangled the mechanism, and found that the combination with another compound that sensitizes to radiation, leads to remarkable efficacy in eliminating 90% of tumors, eradicating recurrence and diminishing metastatic spread", explains [Dr. Fernando Lecanda](#), principal investigator of the Adhesion and Metastasis



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*Dr Fernando Lecanda. Cima
Universidad de Navarra*

Group at Cima, co-senior author of this work. and co-director of the study.

A strategy to eradicate long-term relapses

[Dr. Rafael Martínez-Monge](#), co-senior author of the Department of Radiation Oncology at the Clínica Universidad de Navarra, points out that "one of the main conclusions is that blocking ENPP1 has a double effect: on the one hand, it promotes the activation of the immune system, which ultimately eliminates tumor cells, and on the other, it makes the remaining tumor cells more sensitive to radiotherapy. We have used this radiosensitization to

enhance that effect with another compound, observing a striking efficacy in the primary tumor and the metastases in preclinical models. which is especially relevant in this tumor with such poor survival rate. Our findings also suggest that other tumors could benefit from this approach"

Dr. Martinez-Monge remains cautiously optimistic adding that “Based on these preclinical results, our next step is to obtain funding to initiate a clinical trial to validate our findings in a large cohort of patients with triple-negative breast cancer”

The work, was funded by the Ministry of Health and the Ministry of Science, Innovation, and Universities, and is part of a strategic public-private partnership funded by the Government of Navarra. The research has also received support from Estée Lauder through the Scientific Foundation of the AECC.

Reference

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