# Potential therapy discovered for deadly breast cancer that has few treatment options

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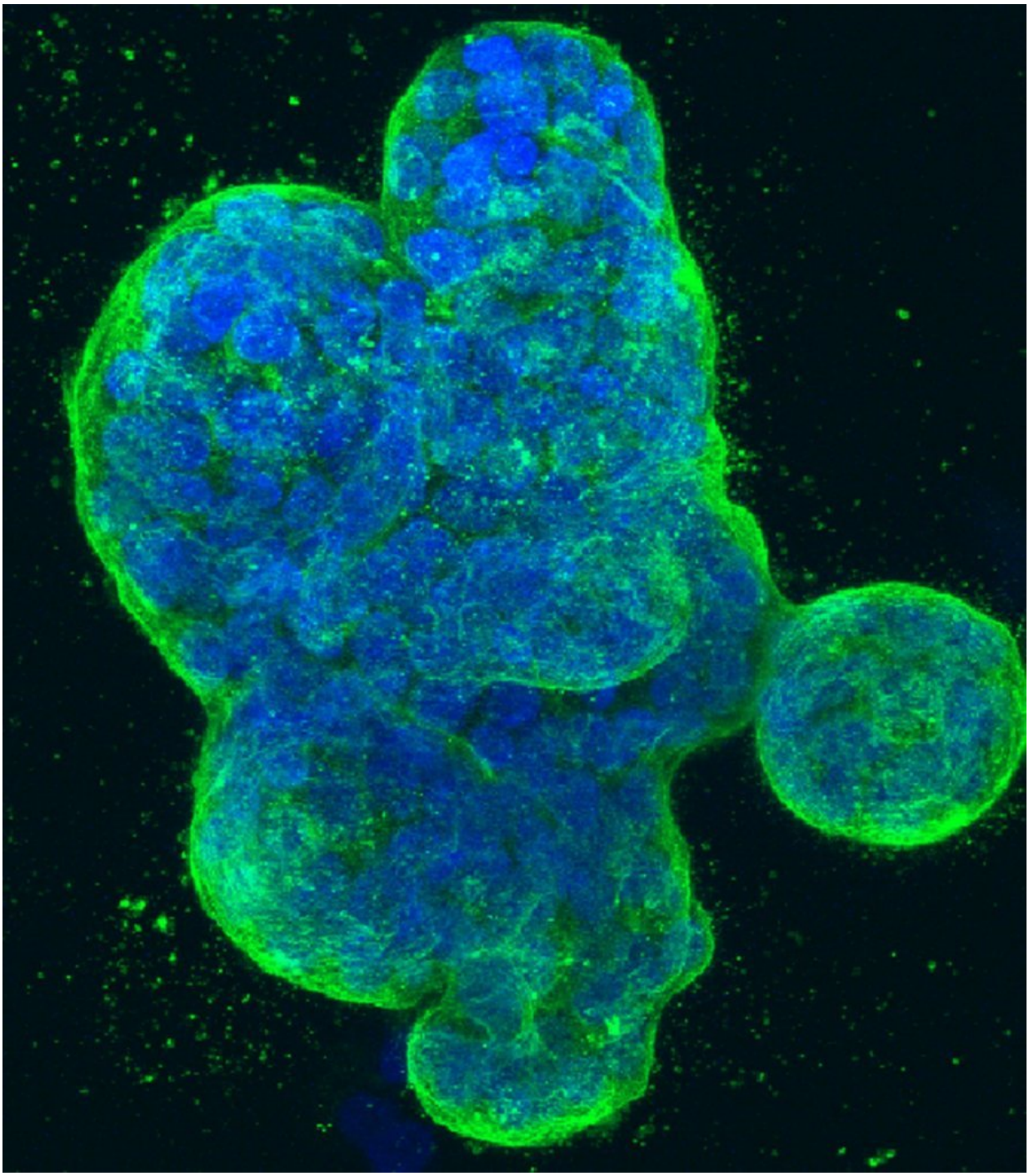

Three-dimensional culture of human breast cancer cells, with DNA stained blue and a protein in the cell surface membrane stained green. Image created in 2014 by Tom Misteli, Ph.D., and Karen Meaburn, Ph.D. at the NIH IRP.

Mount Sinai researchers have designed an innovative experimental therapy that may be able to stop the growth of triple-negative breast cancer, the deadliest type of breast cancer, which has few effective treatment options, according to a study published in *Nature Chemical Biology* in December.

The therapy is known is MS1943. In a cancer cell line and mouse models, it degraded a protein called EZH2 that drives the growth of triple-negative breast cancer.

Research teams led by Jian Jin, Ph.D., Director of the Mount Sinai Center for Therapeutics Discovery, and Ramon Parsons, MD, Ph.D., Director of The Tisch Cancer Institute at Mount Sinai, developed MS1943 as a first-in-class small-molecule agent that selectively degrades EZH2. They also showed that agents that inhibit the enzymatic activity of EZH2 but do not degrade EZH2 did not work in triple-negative breast cancer.

MS1943 effectively reduced EZH2 protein levels in a variety of cancer cell lines, including a triple-negative breast cancer cell line, leading to the death of these triple-negative breast cancer cells.

"Our findings suggest that EZH2 selective degraders such as MS1943 may provide an emerging therapeutic approach for the treatment of triple-negative breast cancer," said Dr. Jin, who is also Co-leader of the Cancer Clinical Investigation Program at The Tisch Cancer Institute, Mount Sinai Professor in Therapeutics Discovery, and Professor of Pharmacological Sciences, and Oncological Sciences, at the Icahn School of Medicine at Mount Sinai. "The EZH2 selective degrader reported in this study is also an invaluable tool to test therapeutic hypotheses in other cancers."

**More information:** Discovery of a first-in-class EZH2 selective

degrader, *Nature Chemical Biology* (2019). DOI: 10.1038/s41589-019-0421-4 , nature.com/articles/s41589-019-0421-4