

# Inhibiting cancer cells with substance obtained from marine sponge

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For more than three decades, no new drug for the treatment of breast cancer has been presented. A group of researchers analyzing a marine

sponge called Halichondrin okadai obtained a mesylate eribulin substance that had already been administered to patients with metastatic breast cancer.

Claudia Arce Salinas from the National Cancer Institute (INCan) in Mexico, and professor at the School of Medicine of the National Polytechnic Institute, explained that she worked in Japan with the marine sponge because scientists realized that it inhibited the replication of organisms around it.

"Japanese researchers analyzed the sponge in order to obtain the active substance that forces the decline of living beings nearby. After several years of research, they determined that eribulin inhibited the replication of [breast cancer cells](#). "

The specialist added that once the active substance is isolated, genetic engineering allowed obtaining it without sacrificing the sponge. The material was purified, and once the drug was synthesized, it was produced in Japan.

"The eribulin inhibits cell division, and if the cancer is characterized by excessive proliferation, we can anticipate positive results. Normally, cells have a check point that detects when the cell requirement quota is reached. However, cancer lacks this check point, so the substance stops the growth or proliferation of the cells. "

She further details that cancer evades normal cellular control and the cells begin to proliferate in an exaggerated manner. What the drug does is inhibit the proliferation, killing the excess cells, so the tumor no longer has the capacity for growth and invasion.



To determine that the active substance was effective against breast cancer, Salinas Arce explained that Japanese researchers used the substance in several tumor cell lines, and within the laboratory, they established that the best target is breast cancer.

The research was later conducted on 700 women worldwide. The results showed that the drug in patients with metastases stopped tumor growth and increased the lifespan of patients for more than two years.

The medication is for women who have already been treated and do not respond to conventional drugs, administered by vein or central line. It has the advantage of not requiring more input on their medication and is applied in a very short period (five minutes).

"This medicine does not require premedication. As it is essentially chemotherapy, side effects are similar to chemo and radiation treatments. However, it prolongs the life of women 1,500 times over standard conventional treatments, " said the specialist.

The drug has already been approved in Mexico, and in 2011 by the FDA in the United States. At first, it will be administered in the private sector and in short time in the public one.

"There are several Mexican candidates for treatment in various institutions because [breast cancer](#) is the second cause of death among women between 30 and 54 years of age."

Provided by Investigación y Desarrollo

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