

## Eribulin from marine sponge inhibits replication of breast cancer cells

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For more than three decades a new drug for the treatment of breast cancer had not been presented. A group of researchers were given the task of analyzing a marine sponge called *Halichondria okadai* and obtained a mesylate eribulin substance that had already been applied to patients with this disease in the stage of metastasis, ie, when the disease spreads to other body parts and the result was that it inhibited tumor growth.

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 that were around it.

"Japanese analyzed the sponge in order to obtain the active substance that forces the decline of living beings nearby the marine organism. After several years of research it was revealed that eribulin inhibited the replication of breast cancer cells. "

The specialist added that once the active substance is isolated, using genetic engineering it was obtained without sacrificing the sponge. The material was purified and once the drug was synthesized it started to be 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 is not like that so the substance stops the growth or proliferation of the cells. "

Specialist at the INCAN details that cancer evades this control and the cells begin to proliferate in an exaggerated manner. What the drug does is inhibit the proliferation of them, killing the spare ones, so the tumor no longer has the capacity for growth and invasion.

To identify 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 identified that it had best results in breast cancer.

The research was later conducted on 700 women worldwide. The result showed that the drug in patients with metastases was able to "stop" 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 practically is 'chemotherapy' side effects are similar to the chemo and radiation treatments, however, it prolongs the life of women 15 hundreds more 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 applied 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." (Agencia ID)

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Source:

National Cancer Institute (INCan)

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