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New Drugs To Fight Colon And Breast Cancer More Effectively Developed By Scientists

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The doctoral thesis Potencial terapeutico de nuevos farmacos antitumorales. Estudio sobre líneas celulares epiteliales (Therapeutic Potential of New Antitumor Drugs. A Study on Epithelial Cell Lines) has allowed for the development of six new drugs to fight colon and breast cancer more effectively than currently used [illegible] study was conducted at the Department of Human Anatomy and Embryology at the University of Granada by Octavio Caba Perez, member of the research group "Avances en Biomedicina" (Progress in Biomedicine), under the direction of professors Antonia Aranega, Juan Antonio Marchal and Fernando Rodriguez.

The importance of this study, in which researchers from the Department of Pharmaceutical and Organic Chemistry have also collaborated, is that it enabled the identification of a total of six antitumor compounds similar to 5-fluorouracil (5-FU), one of the most widely-used drugs nowadays to fight colon and breast cancer. These compounds are more effective against malignant cells (those which are cancerous) and less toxic against benign cells (those which are unnecessarily destroyed or harmed with treatments such as chemotherapy).

As Caba Pérez points out, the current method used to fight tumors "produces several 'collateral damages'. A drug can be very effective against breast cancer, but it can also affect

the rest of the benign epithelial tissue. As everybody knows, current treatments for cancer destroy a large number of unaffected cells in addition to affected cells," says Caba Pérez.

In this study researchers analyzed more than 150 drugs aimed at reducing the toxicity of the 5-FU against the benign cells, thus avoiding the reproduction of new carcinomas or other side effects. "We discarded compounds until we finally found six which have shown to be better than currently used drugs," says Caba Pérez.

Research on cell lines

So far, the study has been conducted on cell lines, and not on patients, using a new technique called "Microarrays" or "DNA Chips", which enables the identification of the effects produced by drugs on each gene - the lowest and most specific level that Medicine can deal with.

"Our research," says Caba Pérez, "has been conducted with absolute precision with the aim of obtaining the lowest possible concentration of drug producing the most significant effect on cancerous cells". Therefore, this study has shown the importance of the presence of some toxic compounds like chlorine, flourine or uracil in drugs. This presence is one of the variables used to develop new antitumor drugs.

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Part of the results of this study (which has been possible thanks to cooperation between the UGR and the company VILPOMAS) have been published in the January 1 issue of the international journal *Tetrahedron.* The remainder of the results will be published in various international journals on Biomedicine.

Reference: Octavio Caba Pérez. Department of Human Anatomy and Embryology, University of Granada.

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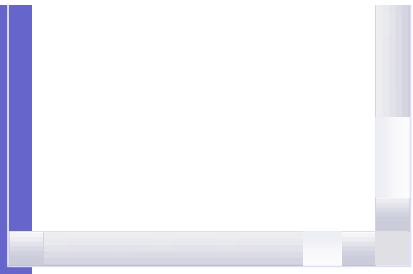

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