

# A treatment which slows the growth of colon and liver cancers

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Leire García Navarro, a researcher at the School of Pharmacy of the University of Navarra, has developed a new treatment which slows the growth of colon and liver cancers.

This discovery is the principal result of her doctoral dissertation, entitled “Lipo-Polymeric Vectors for the Transfer of DNA in Cancer Cells of the Colon”, which was subsidized by the Basque Government. In order to carry out the study, this scientist of the Department of Pharmacy and Pharmaceutical Technology used genetic therapy with non-viral vectors for transferring genetic material to the cancerous cells. With this technique, we can assure the therapeutic function of the drug in a wide variety of tissues. In addition, we can apply the treatment repeatedly, since it does not generate immunity, as occurs with viral vectors.

With the objective of improving the effectiveness of this methodology, the specialist worked on designing non-viral systems which act directly upon the liver and the colon. In this manner, she prepared, optimized and evaluated, *in vitro* and *in vivo*, a new pharmaceutical format called ‘lipopolyplex.’ This compound aids the genetic material in penetrating into the damaged cells, and allows drug release in tumorous organs. 500,000 deaths per year

Experimentation with the new drug in mice has shown that it slows tumor growth with respect to those animals subjected to other procedures. This diminishing of the cancerogenous area is possible, according to the scientist, thanks to the stimulation of the immune

system, since the introduction of the correct gene in the diseased body can cause it to repair itself and destroy the tumor.

In addition, the researcher of the University of Navarra noted that colon cancer alone causes more than 500,000 deaths per year in the West, and currently the only effective treatment is surgery. Despite this treatment, noted the researcher, between 40 and 60% of colon cancer patients die, and for this reason it is important that we seek out treatment based on genetic therapy.

Source: Elhuyar Fundazioa

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