

## **First data in the effect of Araraquara soybean yogurt on Buenos Aires tumor-cell lines.**

Lucas L. Colombo<sup>1</sup>, Graciela Font de Valdez<sup>2</sup>, Elizeu Antonio Rossi<sup>3</sup>, Iracilda Zeppone Carlos<sup>4</sup>

<sup>1</sup> Depto. Inmunobiología, Research Área, Inst of Oncology "A.H.Roffo" (Univ. Bs.As)

<sup>2</sup> CERELA-Tucumán-Arg

<sup>3</sup> Depto de Alimentos e Nutrição

<sup>4</sup> Depto Analises Clínicas, FCF- UNESP, Araraquara

Among the known environmental factors that influence cancer, diet presents itself as an important variable. Soy is a legume that contains isoflavones, among them genistein, a potential protector against breast cancer. It is found naturally in plants and belongs to the "phytoestrogen" class: substances that are similar to estrogens, which are able to protect against hormone-dependent chronic diseases, such as cancer. In this study we evaluated experimental metastasis and subcutaneous tumors of six murine adenocarcinoma after i.v. inoculation: LP07, a lung adenocarcinoma (the tumor that kills the most men in the world) and 5 mammary adenocarcinoma (LM3), the type which kills the most women in the world. LM3 is semi-differentiated, highly metastatic in lung and tumor-draining lymph nodes, and grows similarly in males and females; the highly undifferentiated LM2 presents an extremely rapid growth rate, very poor metastasis and growth similar in both males and females; LM38 has 2 sub-populations: epithelial and myoepithelial cells; LM05 is estrogen-dependent, also with 2 sub-populations, one of them with estrogen receptors; LM05-EC2, is a sub-population from LM05, showing estrogen receptors. Soy yogurt was obtained by adding two lactic bacteria, *Enterococcus faecium* CRI 183 and *Lactobacillus jugurti* 416, to soy milk.

Yogurt was supplemented with isoflavones (1.125g de isoflavin®, Galena). The *in vivo* effect of soybean yogurt + isoflavones was administrated nightly by gavage. The results obtained demonstrated that the experimental metastasis in lung (post iv inoculation) produced a significant increase in LM3, a slight rise in LM2, and decrease in LM38 and LP07 after ingestion of supplemented yogurt. Among subcutaneous tumors, yogurt produced only slight, non-significant differences (increase in LM2 and LM38 and decrease in LM3). LM05 and LM05-EC2 did not grow in animals. This work demonstrated that yogurt supplemented with isoflavones presented different effects, depending on the line and the anatomical sites of inoculation.

Key words: adenocarcinoma, soy, fermentation, isoflavones, breast cancer, lung cancer