

## **Tomato Carotenoids Exert Cytotoxicity on HT\_29 Cell Line**

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Colorectal cancer is one of the most frequent cancers in Western Countries. The risk of getting this disease can be increased by several factors, such as smoking, low physical activity, and some unhealthy dietary habits. It has been widely reported that fruits and vegetables contains several phytochemicals having anticarcinogenic activity, so its intake could be a simple but effective way to prevent this pathology.

Carotenoids contained in tomato fruit are considered to play a role in cancer protection. In this work, the effects of carotenoid extracts at different concentrations from several tomato varieties on human colon cancer cells (HT\_29 line) have been evaluated by using the MTT assay. Furthermore, possible synergistic action of carotenoids blended with olive oil has been also elucidated.

Growth inhibitory response has been found to be dependent of the carotenoid concentration, being this parameter increased (viability values between 37.4-22.6 %) when blendings of carotenoids and olive oil were assayed. This effect could be attributed to the solubility of carotenoids in the oil, which can improve the carotenoid absorption by cells. Such solubility in mixed micelles has been reported as an important step for carotenoid bioaccessibility in digestive process *in vivo*.

The importance of dietary carotenoid intake on colon tumor proliferation and prevention has been revealed in this study, besides the relevance of dietary fats in carotenoids bioavailability.