

Antiproliferative activity of Bergamot juice extract in human colon cancer cells

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Colorectal cancer (CRC) is a leading cause of cancer mortality in the industrialized world, second to lung cancer. A lot of evidence underline that dietary components can have an important role in cancer prevention.

Citrus bergamia juice is rich in flavonoids that can exert inhibitory effects on carcinogenesis both *in vitro* and *in vivo* models.

Our study aim to evaluate the antiproliferative activity of *Citrus bergamia* juice extracts (BJE) in HT-29 and Caco2 human CRC cells.

Treatment of HT-29 or Caco2 cells with BJE in a range from 0.01 mg/ml to 5 mg/ml for 24/48 and 72 hours reduces the growth rate in a time and concentration-dependent manner, as assessed by both MTT reduction and BrdU cell proliferation assays. Annexin V staining suggests that BJE is also able to activate the programmed cell death in either cell lines. Western blot and Real Time PCR analysis performed in HT-29 cells suggest that the antiproliferative effects of BJE is correlated with the inhibition of ERK1/2 and p38 MAPK phosphorylation, that in turn up-regulated P53 and Bax and down-regulate Bcl-2 family proteins such as Bcl2 and BclXL.

Although this data needs of further study to deepen the potential of BJE as anticancer agent, our study suggest its role as modulator of cell apoptosis in CRC cells.

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