

# **Effect of 17- $\beta$ estradiol on Proliferation and Apoptosis of Hepatocellular Carcinoma HepG 2 Cell Line**

*Masumeh Sanaei, Fraidoon Kavooosi, Faeze dehghani*

## **Abstract**

Phytoestrogens are a group of natural compound with estrogen-like activity and similar structure of estradiol, biological active phenolic compounds that structurally mimic the mammalian estrogen 17-betaestradiol. Numerous epidemiological studies suggest that diets rich in phytoestrogens, particularly soy and unrefined grain products, may be associated with low risk of some cancers. Phytoestrogens induce apoptosis at high concentrations and also consumption of soy products is associated with a decreased risk of cancer. The aim of the present study was to analyze the effect of 17-betaestradiol on proliferation and apoptosis of hepatocellular carcinoma HepG 2 cell line. Materials and Methods: MTT assay and flow cytometry assay were used to evaluate proliferative and apoptotic effects of 17-betaestradiol. Results: 17-betaestradiol inhibited the growth of HepG 2 cell and induced apoptosis significantly with a time- and dose-dependent manner. Discussion: Our finding clearly indicated that 17-betaestradiol has a significant inhibitory and apoptotic effects. Conclusion: 17-betaestradiol can significantly inhibit the growth and induce apoptosis in the HepG 2 cell line.

**Keywords:** 17- $\beta$  estradiol, Proliferation, Apoptosis