

The effects of esteradiol valerate on viability of gastric cancer (AGS) cells compared to human embryonic kidney (HEK) cells *in vitro*

Eshagh Ali Bayati¹, Sanaz Soltani^{2*}

¹ Department of Biology, Hamedan Branch, Islamic Azad University, Hamedan, Iran

² Department of Biology, Shahr-e-Quds Branch, Islamic Azad University, Tehran, Iran

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Abstract

Studies have shown that steroid hormones may play a significant role in certain cancer cells growth and proliferation. The main purpose of this study was to investigate the effects of estradiol on viability of gastric cancer (AGS) cells compared to human embryonic kidney (HEK) cells *in vitro*. During this experimental laboratory study different concentrations of estradiol valerate were prepared. Gastric cancer (AGS) and human embryonic kidney (HEK) cells were treated with different concentrations of the hormone *in vitro*. After 24 hours, cell viability was measured using MTT assay method. Data were analyzed using ANOVA. The results of this study showed that the 0.1, 1 and 10 mg/ml of estradiol had cytotoxic effects on AGS and HEK cells. 0.01 mg/ml of the hormone had cytotoxic effects on AGS cells but had no significant cytotoxic effects on HEK cells. 0.0001 and 0.001 mg/ml of the hormone had not significant cytotoxic impact on both AGS and HEK cell lines. The results of this study indicated that estradiol at a suitable dose does not show cytotoxic effects on non-cancerous cells, however, can inhibit the proliferation of AGS cells *in vitro*.

Keywords: Estradiol, AGS, HEK, Cell viability

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Conflict of interests

The authors have no conflicts of interests to declare.

*e-mail: snaz.soltniiiiii@gmail.com