The Cytotoxicity of *Eupatorium cannabinum* Methanolic Extract in a Human Breast Adenocarcinoma Cell Line (MCF-7)

Yasaman Shahtaghi\textsuperscript{a,b}, Maryam Hamzeloo-Moghadam\textsuperscript{c}, Saeid Mohammadi motamed\textsuperscript{a}, Somayeh Esmaeili\textsuperscript{c*}

**Abstract**

*Eupatorium cannabinum* belonging to Asteraceae family is commonly known as hemp agrimony. *E. cannabinum* is used to treat headache, hepatitis, diarrhea, diabetes mellitus and hypertension. Considerable researches have been indicated various biological activities of *E. cannabinum* such as cytotoxic, antioxidant, antimicrobial, anti-inflammatory, immunological and hepatoprotective activities. Since the cytotoxic activity of *E. cannabinum* on human breast adenocarcinoma cell line (MCF-7) have not been reported, the current study was conducted to evaluate the cytotoxicity of the total extract of *E. cannabinum* on MCF-7 cells.

**Methods and Results:** MCF-7 cell line was treated with different concentrations (3.125 to 100 μg/mL) of the *E. cannabinum* total (methanolic) extract. After 48 hrs, the cytotoxic activity was assessed through MTT (3-[4, 5-Dimethylthiazol-2-Yl]-2, 5-diphenyltetrazolium bromide) assay. The methanolic extract demonstrated cytotoxicity against MCF-7 cell line with IC\textsubscript{50} (the concentration that inhibited cell growth by 50%) value of 69.5 μg/mL.

**Conclusions:** The methanolic extract of *E. cannabinum* showed considerable cytotoxic activity. Evaluating the apoptosis induction ability of *E. cannabinum* could be suggested for further studies.

**Key words:** Cytotoxic; *Eupatorium cannabinum*; MCF-7; MTT assay

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