



# Analysis of the Cytotoxic Effects of *Achillea millefolium* L. Extracts on MCF7 Cell Line <sup>†</sup>

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**Abstract:** *Achillea millefolium* L. an herbaceous perennial plant from Asteraceae family which has antitumor, anti-inflammatory and antioxidant activity. Breast cancer is the most common cancer in woman. Therefore, in this study we aimed to investigate the effects of the different extracts of *A. millefolium* on breast cancer with *in vitro* cytotoxicity assay. Within the scope of this study, the compositions of extracts prepared with water, 30% ethanol, 60% ethanol, 90% ethanol and absolute ethanol obtained from the above-ground parts of *A. millefolium*, was investigated by Folin-Ciocalteu method for total phenolics, AlCl<sub>3</sub> colorimetric method for total flavonoid content. Cytotoxic effects on MCF7 (human breast cancer cell line) cell line were studied with MTT assay. It has been elucidated that 60% ethanol extract is rich in total phenolics content and 90% ethanol extract is rich in total flavonoid content. Water extract was found to be most cytotoxic extract with  $30.67 \pm 2.27$  µg/mL IC<sub>50</sub> value on MCF7 cell line.

**Keywords:** Asteraceae; *Achillea millefolium*; cytotoxicity; MCF7; MTT



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