Cytotoxic effects of the wild verbena ethanol extract on cancer cells in vitro conditions

Yalçın Coşkun[a], Ayhan Oral[a], Seyhan Ulusoy[b]

[a] *Canakkale Onsekiz Mart University*

[b] *Süleyman Demirel University*

ycoskun33@hotmail.com

We understood along with the Covid-19 pandemic of the last few years, has become more clear that the most important problem is health for humanity. With the increase in cancer cases in recent years the increased in research on the treatment of cancer diseases. The intensive use of herbal preparations in researches caused medicinal plants to the foreground. The use of the wild verbena in traditional folk medicine in the treatment of some diseases and some anticancer studies have been found in the literature checks. The wild verbena was chosen as the main material of this study because it is a promising plant in cancer treatment. Wild verbena (*Verbena officinalis* L.) flowered plants were harvested in the Çanakkale city at July. Dried and milled wild verbena powder were subjected to ethanol extraction. Phenolic components of wild verbena ethanol extract by LC-MS/MS analysis were determined as caffeic acid, verbascoside, syringic acid, salicylic acid, protocatechuic acid, 2,5-Dihydroxybenzoic acid, abscisic acid, gallic acid, apigenin, luteolin, trans ferulic acid, catechin, jasmonic acid, and quercetin. Caffeic acid, verbascoside, syringic acid, salicyclic acid, and protocatechuic acid were the major components. The cytotoxic effects of the plant extract diluted in different rates on the cancer cell lines and healthy liver cell lines were investigated in different periods for 24 hours and 48 hours in vitro conditions. No cytotoxic effect of 6.25% diluted plant extract was observed in 24 and 48 hours on the healthy liver cell lines. The 6.25% diluted wild verbena ethanol extract causes 29% death in the cancer cell lines in a 24-hour period, while it causes 53% death in the cancer cell lines in a 48-hour period. According to these results, wild verbena ethanol extract with dilution in 6.25% shows promise in cancer treatment.

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References

1) Encalada M. A., Rehecho S., Ansorena D., Astiasarán I., Cavero R. Y., Calvo M. I.. LWT - Food Science and Technology. **2015**, 63(2), 1016-1022.
2) Jin C.C., Liu X.M., Ma D., Hua X.L. and Jin N. Trop. J. Pharm. Res., **2017**, 16(10), 23872017.