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Assesment of Cytotoxic Effect of Small Nettle' (*Urtica urens*) Seeds on Human Lung Cancer

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Aim of the study: *Urtica urens L.*(SmallStinging Nettle) is one of the most widely used plant in alternativeand complementary treatmentof cancer patientsin Turkey. However, studies in literature showed that there are limited studies investigating the cytotoxic/anticarcinogenicactivity of this plant. Therefore, thepresent study was aimed to investigate the cytotoxic effect of smallnettleseedsextractsprepared with different solvents in human lung cancercell line.

Material and Methods: In this respect, firstly, extracts of driedstinging nettleseeds were preparedby using hexane, chloroform,ethylacetateand methanol according to increasing polarity. There are two different hexane extract namely hexane-solid and hexane-oil was prepared. Then, these extracts were applied different concentration to the A459 (human lung cancer cell line) cells (2.5 $x10^3$ cells/well) for 48 hours by dissolved in dimethyl sulfoxide (DMSO). At the end of48 hours, the survival rate of cells was determined by WST reagent.Control groups was treated with themediumcontaining0.1%DMSO without plant extract. We compared cells treated different concentrations ofthe small nettleextracts with control group and so, the effect of extracts prepared at different concentration and different polarity on cellviability was determined.

Results: The cytotoxic effect of extracts obtained from *Urticaurens's* seeds by increasing was determined in A549 cells by this study and the results was showed that theLD50values of thehexane solid, hexane oil, chloroform, ethylacetate andmethanol were found 28,45 µg/ml, 100,1 µg/ml, 38,5 µg/ml, 306,02 µg/ml and 78,9 µg/ml, respectively. These results showed clearly that hexane solid, chloroform and methanol extracts have higher cytotoxic/anticarcinogenic activity with respect to hexane oil and ethylacetate extract. All these results put the hypothesis that the smallnettleseed'sextractsderived fromlowerpolarity contain promisingphytochemicals that may be used in cancer treatment.

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Keywords: *Urtica urens,* cytotoxicity, anti-carcinogenic, different polarity extracts