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In vitro cytotoxic activity of essential oil from Salvia leriifolia on Human Transitional Cell Carcinoma (TCC)

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In general, The essential oils from many plants have shown high cytotoxic activities on tumour cell lines. Salvia leriifolia is an endemic plant in Iran (North Khorasan) and Afghanestan with considerable known applications in medicine. Although there are some reports about the cytotoxic activities from the other Salvia species.It seems there is not enough investigation on S.leriifolia. In this project we compared cytotoxic activities of essential oils from S. leriifolia that were collected from different locations and time, on TCC cells. Antiproliferative activity of essential oils on TCC cells determined by 3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyl tetrazolium bromide (MTT) assay, bye which the mitochondrial dehydrogenase enzymes activity is assesed based on reduction at the MTT to purpule formazan (Insoluble in aqueous solutions) in the mitochondria of living cells. The resulting purple solution is spectrophotometrically measured. Amount of the produced formazan is directly related to the number of viable cells. Amount of essential oils to induce 50% of cells to die, called IC50, was determined by repeated experiments and application of different doeses of the essence. The established IC50 in two different years of 2006 and 2008 and two locations of Bajestan and Neyshabour were respectively as below: 157 and 174 µg/ml; and 258 and 343 µg/ml. Regarding to these results, in vivo cytotoxic activity of essential oils from S. leriifolia is being considered for further investigations.

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