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• **The Effect of Dried, Aqueous and Alcoholic Extract of the *Sumbucus Ebulus* on the Macrophage Viability and Nitric Oxide Production**

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Background: *Sumbucus ebulus* L, from the family Caprifoliaceae, extensively grows in the northern regions of Iran. In Iranian folk medicine, the leaves and rhizomes of this plant have been used topically for curing inflammatory joint diseases, sore throat, snake bites and wounds. There are several reports concerning the anti-inflammatory, and antinociceptive effects of the plant *S. ebulus* in Iranian traditional medicine. Macrophages are one of the important cells in innate immunity and inflammation. In the present study, we explore the effect of dried, aqueous and alcoholic extract of *Sumbucus ebulus* on the macrophages cell viability and its NO producing in an in vitro condition. **Materials and Methods:** Peritoneal exudate cells were obtained from 3 inbred Balb/c mice aged 8-10 weeks obtained from the animal laboratory, Shahed University. The plant extract was obtained in dried, water and alcohol forms. Then the effect of dried, aqueous and alcoholic extract of plant (in serial concentrations including 5, 2, 1, 0.5, 0.1, 0.05, 0.01, 0.005 and 0.001 mg/ml) on the viability of macrophages was measured using MTT method and NO production using Greess method. **Results:** There was no considerable difference between all concentration of extracts and control group except for 0.01 and 0.001 concentrations of dried extract in which the viability of macrophages was significantly increased as compared to the control group. As the results show, almost all cells that treated with plant's dried extract has significantly increased in NO production in comparison to the control group, and enhanced significantly in NO production subsequent to treatment with the alcohol extract in dilutions 5, 2, 0.5 and in the water extract in dilution 1 in comparison with control group. **Conclusion:** The obtained results suggest that the different dilutions of dried, water and alcohol extracts of *Sumbucus ebulus* L. have had anti-inflammatory effects dose dependently, and had increasing cell viability in some dilutions and NO production in different doses. It is recommended that further studies are required to confirming the anti inflammatory effect of *S.ebulus* L.

Keyword: *Sumbucus ebulus* L, Cell viability, NO, Macrophage