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• ***In vitro* Viability of Mice Splenocyte following the Use of Aqueous and Alcoholic Extracts of *Sambucus ebulus* and its R100 Fraction**

Ghafarpour S, Tajik Sh, Danialy N, Jamali D, Ghazanfari T

Immunoregulation Research Center, Medical Faculty, Shahed University, Tehran, Iran

**Background:** *Sambucus ebulus* (Dwarf Elder) is used in folk medicine as an ingredient for anti allergy, weight reduction and improve rheumatism. The drug also is used for constipation and as an emetic and to treat edema and kidney disease. Recently, a number of scientific survey carries out its influence on immune system responses like inflammation as well as its contents like Non-toxic type 2 ribosome-inactivating proteins (RIPs). The plant is found from southern Sweden throughout central and southern Europe, in northern Africa, in North America, and in western Asia as far as Iran. In this study, we evaluated the efficacy of herb extracts on viability of mice splenocyte. **Materials and Methods:** The plant extract was obtained in two aqueous and alcoholic forms, and its R100 was separated using ultra-filtration method. Splenocytes were isolated from inbred Balb/c mice aged 8-10 weeks obtained from the animal laboratory, Shahed University. Then derived splenocytes cultured (in the absence and presence of mitogen) exposed to different doses of these extracts and cell viability was evaluated by MTT assay 48 and 72 hours after culture. **Results:** The splenocytes cell viability significantly decreased 48 hours after exposure to all doses of aqueous and alcoholic extracts. In 72 hrs cultures, the cells viability decreased after exposure to the aqueous extract, and increased after exposure to high dilutions of alcoholic extract. The cell viability was also decreased 48 hours after exposure to R100 fraction of aqueous and alcoholic extracts, increased 72 hours after exposure to R100 fraction of aqueous extract and decreased 72 hours after exposure to R100 fraction of alcoholic extract. **Conclusion:** The results of this study show that aqueous and alcoholic extracts of *Sambucus ebulus* and their R100 fraction affect the balb/c micesplenocytes cell viability dose and time dependently and this is probably the explanation for its clinical effects.

**Keyword:** *Sambucus ebulus*, splenocyte, viability