

The effect of *Echinacea purpurea* hydro alcoholic extract on the blood parameters in mice

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Introduction: Purple cone flower is a plant with scientific name *Echinacea purpurea* that belongs to *Echinaceae* family. This plant has many pharmaceutical effects which one of the most important uses is immunostimulating. This research attempts to study the effects of *Echinacea purpurea* hydroalcoholic extract on the blood parameters in little laboratory female mice (Balb/c species) .

Material and Methods: In this research, 48 mature female mice were divided randomly into 6 groups . The control group did not receive any extract , the placebo group received 0.5 cc normal saline every other day and 4 treatment groups received extract with (50,100,200,300) mg/kg/2day doses that was used interperitoneal injection .Then the blood samples were taken from the whole mice. The results were analyzed SPSS in the case that $p < 0.05$.

Results: The study of blood parameters showed that the extract increased markedly in the total number of white blood cells in each 4 groups in comparison to control group. The number of neutrophils decreased significantly in each 4 groups in comparison to control group, but the significant differences weren't noticed in monocytes. The number of red blood cells increased significantly in groups 1 , 2 in comparison to the control group, but in groups 3,4 there is no significant differences. In this manner , this extract was caused change in the mean of hematocrite , hemoglobin and the index of red blood cells (MCV,MCH,MCHC) there is no significant differences; Moreover, the number of platelet has a meaningful increase in group 1 in comparison to control group, and in groups 2, 3 , 4 have decreased significantly.

Discussion: The extract of *Echinacea purpurea* can support the immune system by increasing the number of white blood cells and can be effective in hematopoiesis by increasing the number of red blood cells.

Keywords: *Echinacea purpurea*, blood parameters, mice.

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