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Effect of aqueous extract of South marshmallow on spontaneous locomotor activity in rats

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Background and Aim : The medicinal plant South marshmallow from Malvaceae family has been used by Iranian people for the treatment of gastrointestinal, respiratory and, dermatologic disorders; as a diuretic agent as well as a nerve calming remedy. However, neither clinical nor experimental assessments are present to indicate the sedative effect for this plant and other plants of the genus *Alcea*. The scope of this study was to investigate the acute effect of an aqueous extract of flower of South marshmallow on locomotor activity in rats.

Methods : Sedative effect was assessed using the open field test. Locomotor activity made by animals was automatically recorded by Ethovision software. Experimental groups of male rats received an intraperitoneal injection of saline (control), graded doses of *Alcea aucheri* aqueous extract (at doses of 2.18, 8.75, 17.5, 35, 70, 175, 350 and 700 mg/kg) or, diazepam (positive control), at dose of 3 mg/kg. Both of diazepam and the extract, were diluted with saline on the day of experiment; before use. Locomotor activity was defined as total distance traveled (cm) by rat during a 30 min period immediately after drug injection.

Results : Diazepam and the extract showed similar behavioral effects in the open field test. The extract at doses equal or greater than 17.5 mg/kg significantly decreased total distance traveled compared with saline-treated group. Furthermore, linear regression analysis confirmed a dose-

dependent effect of the extract on locomotor activity, i.e. increasing the dose of the extract caused a reduction in locomotor activity ($p < 0.0001$).

Conclusion : These data indicated that South marshmallow may have acute sedative effect. This study is the first to report that a plant of the genus *Alcea* has sedative activity.

Keywords : South marshmallow; Sedative effect; Open field; Rat