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### **Differences in the time course of anxiolytic and sedative effects of Alcea aucheri in rats**

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**Background and Aim :** Medicinal plants of the *Alcea* genus from Malvaceae family such as *Alcea rosea* L., *A. officinalis* L, and *A. aucheri* (Boiss.) Alef. have long been used traditionally as mucilage for treatment of irritated oral and pharyngeal mucosa, respiratory and gastrointestinal disorders. They have been also used as a diuretic agent as well as sedative remedy. This study was designed to evaluate the time course of behavioral effects of an aqueous flower extract of *A. aucheri* on elevated plus-maze test (EPM) in rats.

**Methods :** Male Wistar Rats (180-200 gr; Pasture institute) were randomly divided into five groups to receive saline (control), diazepam (1.2 mg/kg; positive control) or the extract of *A.aucheri* at doses of 35, 70 or 175 mg/kg intraperitoneally, once daily for four consecutive days. Then, 24 h after the last injection each rat was tested during a 5 min period in EPM. Furthermore, in two groups of rats similar paradigm was performed but the animal was tested after 48 or 96 h of the last injection. The sessions were recorded by a camera positioned right above the maze hanging from the ceiling. Data were obtained using Ethovision software (version 7), a video tracking system for automation of behavioral experiments. Increase in the percentage of time spent on open arms and/or of open arms entries were (was) considered as index of lower anxiety behavior. Moreover, total distance travelled (cm) and velocity were recorded. Decrease in these parameters was considered as sedative effect.

**Results :** ANOVA showed that the extract significantly increased open arm activity, i.e. the percentage of time spent on open arms and/or open arms entries compared with saline, in time 24 h and time 48 h. In addition, the extract at its highest dose and diazepam, induced a significant decrease in the total distance travelled and velocity of rat, compared with saline in time 24 h.

**Conclusion :** The present results suggest that firstly, repeated dosing with *A. auchei* has anxiolytic and sedative effects in rats, and secondly, time courses of anxiolytic effect and sedative effect were different. The differences may be representative of different mechanisms involved in each effect.

**Keywords :** *Alcea aucheri*; elevated plus-maze; Sedative effect; anxiolytic effect