

Anxiolytic activity of aerial part hydroethanolic extract of *Allium ascalonicum* Linn. (Liliaceae) in mice

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Submission date: July 30, 2012, Acceptance date: November 6, 2012; Publication date: November 19, 2012

Running Title: Anxiolytic activity of *Allium ascalonicum*

ABSTRACT

Background: *Allium ascalonicum* Linn. (Liliaceae) is a mildly aromatic annual herb used to flavor food. Ethnobotanical survey revealed application of *A. ascalonicum* in the treatment of central nervous system (CNS) disorders.

Objective: To investigate the anxiolytic activity of aerial part hydroethanolic extract of *A. ascalonicum*.

Methods: The hole-board, elevated plus maze, light/dark exploration, open field and social interaction tests were used in this study. Groups of mice were treated orally with distilled water (10 ml/kg), diazepam (1 mg/kg), and *A. ascalonicum* (50-400 mg/kg). Evaluations were done 1 h post-treatment and the duration of observation was mostly 5 min. In the hole-board test, mice were observed for number/duration of head dips and number of sectional crossings. In the elevated plus maze test, the time spent in the open/closed arms and the number of entries by mice were observed. In the light/dark exploration test, the latency of entry into the dark box, time spent in the light and dark compartments, number of rearing and assisted rearing were determined. In respect of the open field test, observations were made for the number of rearing, assisted rearing, and sectional crossings. In the social interaction test, pairs of mice were observed for number of interactions including sniffing, following, and partner grooming.

Results: In the hole-board test, *A. ascalonicum* significantly ($p < 0.05$, 0.01) increased the number/duration of head dips and number of sectional crossings. In the elevated plus maze test, *A. ascalonicum* significantly ($p < 0.05$) increased the number of entries into the open arm with

corresponding reduction in number of entries into the closed arm. In the light/dark exploration test, *A. ascalonicum* significantly ($p < 0.05$, 0.01) increased the latency of entry into the dark box, time spent in the light box, and number of rearing and assisted rearing. In respect of the open field test, *A. ascalonicum* significantly ($p < 0.05$, 0.01) increased the number of sectional crossings and rearing. Considering the social interaction test, *A. ascalonicum* significantly ($p < 0.05$) increased the number of interactions. Peak anti-anxiety effects were mostly observed at the dose of 100 mg/kg.

Conclusion: The aerial part hydroethanolic extract of *Allium ascalonicum* possesses anxiolytic properties.

Keywords: *Allium ascalonicum*, Liliaceae, anxiolytic activity, medicinal plants, traditional medicine.