

## **Cardiovascular effects of *Boophone disticha* aqueous ethanolic extract on early maternally separated BALB/C mice**

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### **Abstract**

**Ethnopharmacological relevance:** There are a number of reports from traditional medical practice in Zimbabwe and neighboring countries and few in vitro studies suggesting an effect with extracts of *Boophone disticha* in some forms of anxiety disorder.

**Aim of the study:** In order to validate the use of *Boophone disticha* in treatment of anxiety, this study was set to determine the effects of the plant extracts on blood pressure (BP) and heart rate (HR) in adult BALB/c mice subjected to repeated early maternal separation (MS) stress.

**Materials and methods:** To test whether early life stress increases anxiety in mice, non-invasive tail cuff method was used to examine the autonomic nervous system activity by assessing cardiovascular reactivity and response to acute mixing stress (AMS) and restraint stress (RS) in adult mice subjected to early postnatal stress as compared to control. AMS-induced cardiovascular response was then evaluated in adult MS mice treated with *Boophone disticha* as compared to vehicle and diazepam.

**Results:** Comparisons of the BP and HR measurements indicated that MS significantly reduced AMS-induced HR responses in BALB/c mice when compared with control. *Boophone disticha* treatment significantly reduced AMS-induced BP response in BALB/c MS mice as compared to vehicle and diazepam treatments.

**Conclusions:** Our findings demonstrate for the first time that postnatal stress can induce short-term changes in the sensitivity of the cardiovascular system to subsequent stress which can be reduced by treatment with a freeze dried aqueous ethanolic extract of *Boophone disticha*.