



RESEARCH PAPER

## CNS STIMULANT AND ANTIDEPRESSANT ACTIVITY OF SEEDS OF *ABELMOSCHUS ESCULENTUS* IN RATS

Arvind Agarwal<sup>1</sup>, Deepika Bora<sup>2\*</sup>, Chanderpriya Agarwal<sup>1</sup>, Ratendra Kumar<sup>1</sup> and Veermaram Choudhary<sup>3</sup>

<sup>1</sup>Faculty of Pharmaceutical Sciences, Jodhpur National University, Jodhpur- 342 001, Rajasthan, India

<sup>2</sup>Department of Pharmacology, Krupanidhi College of Pharmacy, Bangalore-560 035, Karnataka, India

<sup>3</sup>Department of Pharmacy, Seth G.L. Bihani S.D. College of Technical Education, Sri Ganganagar-335 001, Rajasthan, India

\*E-mail: boradeepika18@gmail.com

Tel.: +91 9535703741.

Received: May 27, 2015 / Revised: Jun 04, 2015 / Accepted: Jun 05, 2015

**Depression is a common mental disorder, which affects the personal and social relations of a person. There are varieties of synthetic antidepressant and stimulant drugs available now a days, however, their effectiveness does not come up with the entire range of population suffering from this disorder. Moreover, the side effects and the drug interactions are major restrictions in their clinical applications. To avoid synthetic medications, herbal medicines are their reasonable substitute and hence widely used across the globe due to their wide applicability and therapeutic efficacy associated with least side effects, which in turn has initiated the scientific research regarding the antidepressant activity from plants. The present study was done with an objective to explore the CNS stimulant and antidepressant activity of *Abelmoschus esculentus* Linn. which is commonly used plant throughout the world. Extraction of defatted seeds was done using different solvents like chloroform, ethyl acetate, ethanol, water and decoction of roasted seeds. Among all the extracts, decoction and aqueous extracts showed maximum CNS stimulant and antidepressant activities.**

**Key words:** CNS stimulant, Antidepressant, Herbal, *Abelmoschus esculentus* seeds, Extraction.

### INTRODUCTION

Over past few decades, the affinity towards the herbal drugs has been grown by utilization of traditional medicinal plant to heal some critical diseases. It is turning out to be better medicine with respect to synthetic drugs that assure numerous side effects for prolong treatment (Gangopadhyay *et al* 2012). In recent years, focus on plants research has increased all over the world. A large body of evidence has been collected to show immense potential of medicinal plants (Jain *et al* 2011; Srividya *et al* 2012; Jain and Argal, 2013; Parsai *et al* 2014; Sadanand and Palanivelu, 2015) used in various traditional systems. According to World Health Report, about 450 million people suffer from a mental or behavioral disorder. This amounts to

12.3 % of the global burden of disease, and predicted to rise up to 15 % by 2020 (Gautam *et al* 2013).

Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and physical well being. According to WHO estimation, 121 million people worldwide suffer from clinical depression. The high prevalence of suicide in depressed patients (up to 15 %) coupled with complications arising from stress and its effects on the cardiovascular system have suggested that it will be the second leading cause of death by year 2020 (Arya and Verma, 2012). Central nervous system (CNS) stimulation is the primary action of a diverse group of pharmacological agents and an adverse effect associated with the