Protective and Therapeutic Effects of *Argyreia speciosa* against Ethanol-Induced Gastric Ulcer in Rats

Tarek K. Motawi[a], Manal A. Hamed[b,*], Reem M. Hashem[c], Manal H. Shabana[d], and Yomna R. Ahmed[b]

[a] Biochemistry Department, Faculty of Pharmacy, Cairo University, Cairo, Egypt
[b] Therapeutic Chemistry Department, National Research Center, Dokki, Cairo, Egypt. Fax: +202-33371931. E-mail: manal_hamed@yahoo.com
[c] Biochemistry Department, Faculty of Pharmacy, Beni-Seuf University, Beni-Seuf, Egypt
[d] Phytochemistry and Plant Systematic Department, National Research Center, Dokki, Cairo, Egypt

* Author for correspondence and reprint requests

Z. Naturforsch. **67c**, 47–57 (2012); received March 5/November 26, 2011

The protective and therapeutic effects of *Argyreia speciosa* Sweet (Convolvulaceae) against ethanol-induced gastric ulcer in rats were evaluated. Ethanolic and water extracts of the aerial plant parts (200 mg/kg body weight) were orally administered daily for seven days prior to or after ulceration with one oral dose of 1 mL absolute ethanol on 24-h empty stomachs. Rats were divided into eleven groups. Group 1 served as control. To groups 2 and 3 each extract was administered. Groups 4 to 6 received each extract or ranitidine (100 mg/kg body weight) prior to ulcer induction. Groups 7 to 9 received each extract or ranitidine post ulcer induction. Groups 10 and 11 were gastric ulcerative rats after one hour and one week of ethanol induction. The evaluation was done through measuring ulcer indices: stomach acidity and volume, lesion counts, mucus, and prostaglandin E_2 contents. Oxidative stress marker, *i. e.* malondialdehyde, glutathione, and superoxide dismutase, were estimated. Certain marker enzymes for different cell organelles, *i. e.* succinate and lactate dehydrogenases, glucose-6-phosphatase, acid phosphatase, and 5'-nucleotidase, were evaluated. The work was extended to determine the collagen content and the histopathological assessment of the stomach. Gastric ulcer exhibited a significant elevation of the ulcer index, antioxidant levels, collagen content, and the marker enzymes. The water extract attenuated these increments and was more potent as a protective agent, while the ethanol extract exhibited stronger therapeutic potency. In conclusion, *A. speciosa* acted as antiulcer agent. More detailed studies are required to identify the compounds responsible for the pharmacological effect.

Key words: Gastric Ulcer, Ethanol, *Argyreia speciosa*