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Antacid Properties of Acidic and Basic Aqueous Extracts Obtained from Vishnukranthi (*Evolvulus alsinoides* (L.) L.) Plant

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Background: The perinneal herb, *Evolvulus alsinoides* is commonly known as Vishnukranthi (Sinhala), Dwarf morning glory (English), Vishnukarandi (Tamil) and Shankpushpi (Sanskrit). This plant with blue flowers is known for its ethnomedicinal uses in fever, asthma, dysentery and bowel complaints. The antacid activity of aqueous, ethanolic and hexane extracts of *E. alsinoides* have been evaluated in our previous study.

Objectives: To evaluate the antacid activity of the aqueous extracts of whole plant of *E. alsinoides* obtained under acidic and basic conditions.

Methods: Whole plant parts of *E. alsinoides* were extracted using distilled water acidified using hydrochloric acid (pH 4) and basified with ammonia solution (pH 10) by reflux method for four hours. Obtained extracts were concentrated using rotary evaporator, before freeze-drying. Solutions of acidic (AaqE) and basic (BaqE) aqueous extracts at a concentration of 0.05 g/mL were prepared using distilled water. The neutralizing capacity and the duration of consistent neutralizing activity were determined with modified Fordtran's titration method and Vatier's artificial stomach model. An aliquot of 10 mL sample was used for each test and all experiments were triplicated. A commercially available antacid preparation and distilled water were used as the reference and the negative control, respectively.

Results: The antacid capacity (volume of 0.1N H^+ consumed) of AaqE and BaqE were 7.9 (±0.17) and 19.1 (±0.06) mL, respectively which were significant (p<0.001) compared to the negative control. The durations of consistency of the antacid action were 93.08 (±1.31) s (p<0.05) and 278.62 (±8.84) s (p<0.001), respectively. Both AaqE and BaqE of *E. alsinoides* exhibited statistically significant antacid activity in both models compared to the negative control. However, the extracts were less potent (p>0.05), when compared to the reference antacid preparation.

Conclusions: Basic pH of the extraction medium may influence the antacid activity of the aqueous extract of *E. alsinoides.*

Keywords: *Fordtran's titration, Gastroprotective, Vatier's artificial stomach model, Vishnukranthi*

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