Antidiuretic Effect Of *Scoparia Dulcis* In Rats

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Abstract. The objective of this study was to evaluate the antidiuretic potential of *Scoparia dulcis Linn* (Family Scrophulariaceae) herb using the hydrated rat assay technique with three concentrations (2, 4 or 8 g) of decoction (DE made according to the traditional system of medicine in Sri Lanka. The DE or reference drug (ADH) or vehicle (water) wa orally administered to rats and their urine output was monitored over 6 h. All three doses of DE caused profound an significant impairments of total urine output. The antidiuretic effect had a rapid onset (within 2 h) and short duration o action (2 h). The DE was well tolerated and was neither hepatotoxic nor nephrotoxic. Further, DE increased the specifi gravity and osmolarity of urine. It is concluded that antidiuretic action was mediated either via ADH like action o potentiation of endogenous ADH action and the DE has the potential to be used as an antidiuretic in Ayurvedic treatment

Keywords: *Scoparia dulcis*, antidiuretics, antidiuresis.

INTRODUCTION

Scoparia dulcis Linn (Family: Scrophulariaceae, Sinhala: Wal kottamalli) is an erect perennial herb commonly found in tropical countries [1]. In Sri Lanka, it grows commonly in paddy fields and along roadside in dry and wet low land areas of the country [1]. Some traditional physicians of Sri Lanka recommend the decoction (DE) made from this herb for diabetes mellitus and others in the treatment of urinary ailments. However, none of these prescriptions are proven scientifically. Recently, when we were investigating the anti-diabetic potential of the decoction of these herbs in rats, a reduction in urine output was apparent. If a potent anti-diuretic action exists, then the decoction can be used in the treatment of diabetes insipidus, polyurea, nocturia or in bed-wetting. After all, in Sri Lanka, about 35% of the population are mainly dependent on Ayurveda and traditional systems of health care[2]. The aim of this study was to assess the antidiuretic potential of the herb *S. dulcis*. This was done using the hydrated rat assay method developed by De Felice et al.[3] The DE was made as prescribed by traditional practitioners and the doses selected were 50 - 200 times that is usually recommended for humans as the metabolic rate of rats are much higher than in humans [4].

Figure 1 : *Scoparia dulcis* Plant

MATERIALS AND METHODS

Collection of herbs and preparation of decoction - DE

Fresh herbs (Figure 1) were collected from paddy fields in Kalutara area in Sri Lanka (between October 2000 and May 2001). The species was identified by Dr. (Mrs) I. Seneviratne, Department of Botany, University Colombo, Sri Lanka. A voucher specimen (SN-32) been kept in the museum of the Department Zoology, University of Colombo, Sri Lanka.

The fresh herb was cut into small pieces and 120 g these were added to 1920 ml distilled water (DW) boiled for 10 - 12 h, until the volume of DE was redu