

Evaluation of analgesic activity of the aerial parts of *Portulaca oleracea* v. *sativa* and its comparison with two related species

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The *Portulaca oleracea* v. *sativa* (POS) belonging to the family Portulacaceae is a cultivated herb, used traditionally to treat Swellings, muscular pains and toothache (Okwuasaba et al 1986). Two other species, *Portulaca oleracea* (PO) and *Portulaca grandiflora* (PG) are also used by healers for similar indications. No formal studies have been made to evaluate the analgesic activity of these plant extracts. The present study was carried out to evaluate POS for its analgesic activity by two well established experimental methods in Wistar rats and albino mice and to compare it with that of PO and PG using diclofenac sodium as reference drug.

The analgesic activity was evaluated using the hot-plate method and tail-flick response on albino mice and Wistar rats, respectively. The hot-plate reaction time was taken as the time between placing animals on the hot-plate and licking the fore or hind paws. Tail-flick response was measured as the time taken by the animals to withdraw the tail from the radiant heat source. In both methods the reaction time was measured 10 min before, and 2, 4 and 6 h after the intraperitoneal administration of either

a 10% alcoholic extract or diclofenac sodium (4 mg kg⁻¹). The data showed that at the dose of 400 mg kg⁻¹, both POS and PG extracts possessed significant analgesic activity which lasted for 6 h. However, the significant analgesic effect following the extract of PO was observed only during the 4th h of treatment. The analgesic effect of POS and PG at the doses studied was comparable with that of the diclofenac sodium. POS and PG produced similar effects (Table 1). No significant difference was noticed at the two different doses

tested. The analgesic responses recorded by the two methods indicated that the PO extract showed positive analgesic response that lasted for 6 h using the tail-flick method only. These results support the traditional use of *Portulaca* sp. in painful conditions. The results also indicate that more than one experimental model is needed to test the analgesic activity.

Okwuasaba, F., Ejike, C and Parry, O. (1986) *J. Ethnopharmacol.* 17, 139–160.

Table 1. Effect of 10% ethanolic extract of *Portulaca* sp. (400 mg kg⁻¹, i.p.) and diclofenac sodium (4 mg kg⁻¹, i.p.) on hot-plate reaction time (% control)

	Hot-plate reaction time at:			
	0 h	2 h	4 h	6 h
Control	100.0 ± 3.35	102.9 ± 6.72	116.8 ± 17.5	119.6 ± 8.6
<i>P. oleracea</i> v <i>sativa</i>	100.0 ± 4.01	164.2 ± 23.4*	163.5 ± 10.7*	172.8 ± 10.7*
<i>P. grandiflora</i>	100.0 ± 6.67	153.2 ± 19.2*	181.5 ± 25.6*	188.6 ± 34.8*
Diclofenac	100.0 ± 9.19	172.5 ± 28.7*	156.7 ± 9.56*	155.7 ± 20.5

P < 0.05 compared with zero time value.