

Antiinflammatory and antinociceptive activities of extracts and syringin isolated from *Carduus schimperi* Sch. Bip. ex A. Rich

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Abstract

Carduus schimperi Sch. Bip. ex A. Rich (Asteraceae) is a perennial herb and its roots are used in some localities in Ethiopia for orofacial inflammation in the form of warm aqueous macerate. In the present study, the *in vivo* antiinflammatory and antinociceptive effects of the aqueous root extracts of *C. schimperi* were investigated. The antiinflammatory effect was evaluated using carrageenan-induced mouse pedal (paw) oedema model, while the formalin test in mice was employed to study the antinociceptive activity. Administration of 400 mg/kg p.o. of the aqueous extract of the roots of *C. schimperi* produced significant ($P < 0.05-0.001$) antiinflammatory effects against carrageenan-induced acute inflammation and formalin-induced nociceptive pain stimulus in mice. Bioassay guided fractionation of the total extract indicated that the water fraction was by far the most potent in both models. Syringin, which was isolated for the first time from the active fraction of *C. schimperi* showed significant antiinflammatory and antinociceptive activities when tested at a dose of 100 mg/kg, p.o. The present findings indicated that *C. schimperi* possesses genuine antiinflammatory and antinociceptive properties, lending pharmacological support to folkloric or anecdotal use of the plant in the treatment and/or management of painful inflammatory conditions. Syringin appears to be one of the active ingredients of the plant.

Keywords: *Carduus schimperi*; syringin, antiinflammatory; antinociceptive

Introduction

Despite the immense technological advancement in modern medicine, many people in Africa (approximately 75% of the population) still rely on traditional healing practices and medicinal plants for their daily healthcare needs (Ojewole, 2004). Ethiopian traditional medicine is composed of a number of specific skills, namely, the use of plants, animal products and minerals as well as magic and superstition. The main body, however, is based on the use