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PP55. Analgesic activity of dehydrofukinone, a sesquiterpene ketone from *Senecio nemorensis* L. (Asteraceae)

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The genus *Senecio* is the largest genus of the Asteraceae plant family with more than 1500 species with a worldwide distribution [1]. In recent decades, the species of this genus have been extensively investigated for their secondary metabolites. It was shown that the genus is characterized by the presence of pyrrolizidine alkaloids and (furano)eremophilane sesquiterpenoids [1].

During a routine GC–MS screening of Asteraceae taxa from Serbia, it was found that the essential oil isolated from the aerial parts of *S. nemorensis* was dominated by a sesquiterpene ketone dehydrofukinone (75.1%). This eremophilane sesquiterpene was synthesized for the first time by dehydrogenation of fukinone isolated from *Petasites japonicum* Maxim in 1968 [2] and isolated a few years later from the leaves of *Arctium lappa* L. [3]. In the present work, this compound was isolated from the oil by column chromatography and assayed for its analgesic potential in animal models evaluating peripheral (abdominal writhing test) and central (hot plate and tail immersion tests) pain pathways. Prior to the experiments, group of animals were treated either with different doses of dehydrofukinone (50, 100 and 150 mg/kg), a standard drug (indomethacin/acetylsalicylic acid/morphine) or vehicle. The obtained results indicate that dehydrofukinone possesses moderate peripheral (at the highest dose) and mild central (only in the tail immersion test) analgesic activity. These findings are in agreement with previous publications which had also proven that *Senecio* sp. plant extract possesses only peripheral analgesic activity [4]. On the other hand *S. rufinervis* essential oil was found to significantly inhibit acetic acid-induced abdominal writhing in mice [5].

This plant species has proven to be a good natural source of this compound considering its high relative amount (about ¾ of the oil) and relatively high yield of the oil (0.12%, w/w of fresh plant material).

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