

COMPONENTS OF *Perovskia scrophularifolia* AND THEIR BIOLOGICAL ACTIVITY

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Four species of the genus *Perovskia* Kar. (family Lamiaceae) grow in Uzbekistan, of which *Perovskia scrophulariifolia* Bunge is relatively common, and its phytocenoses occupy large areas. A decoction of the aerial parts is used in folk medicine for scabies in humans and animals, to treat sunburn, and to eliminate intestinal parasites from the body. We previously isolated diterpenoids, flavonoids, phenolic carboxylic acids, and other compounds from the aerial parts.

The dichloromethane fraction of the methanol extract of the aerial parts was chromatographed on a silica gel column using a gasoline-ethyl acetate gradient system. Elution of the column with a gasoline-ethyl acetate (9:1) solvent system isolated oleanolic and ursolic acids. Further elution of the column with a gasoline-ethyl acetate (8:2) solvent mixture isolated a mixture of the two substances. Corozolic and maslinic acids were isolated in methanol using gel filtration on Sephadex LH-20.

Quercetin and tormentic acid were isolated from the ethyl acetate fraction by silica gel column chromatography. The n-butanol fraction of the methanol extract of the aerial parts was chromatographed on a silica gel column, washing with ethyl acetate and an ethyl acetate-methanol gradient system. Hesperidin was isolated by chromatography of the resulting ethyl acetate eluate on a Sephadex LH-20 column.

A new diterpenoid, scrofulin, and salviamone B, previously obtained by the biotransformation of cryptotanshinone, were isolated from the benzene fraction of the methanol extract of the roots. The structures of the isolated compounds were established by studying IR, ^1H , ^{13}C NMR spectra, and X-ray diffraction data.

In total, we isolated six phenolic carboxylic acids and flavonoids, 11 diterpenoids, five triterpenoids, three phytosterols, succinic acid, and pinitol from the aerial parts and roots of *P. scrophulariifolia*.

A comparative study of the antioxidant activity of the dichloromethane, ethyl acetate, and tormentic acid fractions obtained from the aerial parts of *P. scrophularifolia* was conducted based on their effects on the intensity of lipid peroxidation processes, assessed by the accumulation of malondialdehyde (MDA) in vitro. The test samples and an oil solution of pharmaceutical vitamin E (10%) were pre-dissolved in 70% ethyl alcohol at a concentration of $1 \cdot 10^{-5}$ mg/ml. The results showed that the dichloromethane fraction exhibited the most pronounced antioxidant activity (74.0%), equivalent to vitamin E activity (70.0%). The least effective substances were tormentic acid and ethyl acetate fractions (52.0–46.0%), respectively. Thus, the antioxidant activity of the dichloromethane fraction obtained from the aerial parts of *P. scrophulariifolia* was equivalent to that of a vitamin E preparation.

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