

PHYTOCHEMICAL COMPOSITION OF THE AERIAL PARTS OF *Cousinia affinis* SCHRENK EX FISCH. & C.A.MEY.

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Biologically active natural compounds, including lipids, phenolic compounds, and flavonoids, play an important role in plants. These compounds are involved in essential physiological processes, adaptation to environmental factors, and plant defense mechanisms. Flavonoids, in particular, are characterized by pronounced antioxidant properties and play an important role in neutralizing free radicals and protecting cells against oxidative stress.

Species of the genus *Cousinia* Cass., belonging to the family Asteraceae, are of considerable interest as sources of various biologically active secondary metabolites. Previous phytochemical studies of *Cousinia* species have reported the presence of flavonoids, phenolic acids, terpenoids, triterpenes, steroids, and other naturally occurring compounds. However, the chemical composition of many species of this genus, including *Cousinia affinis* Schrenk ex Fisch. & C.A.Mey., remains insufficiently investigated.

Cousinia affinis is a perennial plant native to Central Asia and is also naturally distributed in Uzbekistan. Investigation of lipophilic and phenolic compounds accumulated in the aerial parts of this species may provide valuable information regarding its potential as a source of biologically active plant material. Sequential extraction of plant material allows the initial isolation and characterization of lipophilic constituents, including oils, followed by the investigation of phenolic compounds and flavonoids in the subsequent polar extracts.

Therefore, the present study aimed to isolate the oil fraction from the aerial parts of *Cousinia affinis* and subsequently determine the total flavonoid content of the plant extract. For the study, 100 g of the aerial parts of *Cousinia affinis* was used as the initial plant material. The plant material was initially extracted with petroleum ether. This extraction step was performed to isolate non-polar and lipophilic constituents, including oils, waxes, and other hydrophobic compounds.

As a result of petroleum ether extraction, 3.78 g of the oil fraction was obtained from 100 g of the dried aerial parts, corresponding to an oil yield of 3.78% based on the dry weight of the plant material.

After removal of the oil fraction, the remaining plant material was subjected to further phytochemical investigation. In particular, an alcoholic extract was prepared to investigate polar constituents, and the total flavonoid content was determined using a spectrophotometric method based on the formation of complexes between flavonoid compounds and aluminum chloride.

The analysis showed that the total flavonoid content in the extract of the aerial parts of *Cousinia affinis* was 18.64 ± 0.52 mg QE/g of dry plant material, expressed as quercetin equivalents (QE). This value indicates a considerable accumulation of flavonoid compounds in the aerial parts of the plant and suggests that *Cousinia affinis* may represent a promising source of flavonoid-containing biologically active compounds.