

## STUDY OF THE PROCESS OF EXTRACTING OF THE PLANT COLLECTION OF EXPECTORANT ACTION

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**Introduction.** The plant collection of expectorant action is a combination of medicinal plants that have been traditionally used to treat respiratory disorders such as cough, bronchitis, and asthma. The extraction process is a crucial step in obtaining the active compounds from the plant collection for use in pharmaceutical formulations. The aim of this study is to investigate the extraction process of the plant collection of expectorant action and evaluate the physicochemical properties of the obtained extract.

**The aim of the study.** The aim of this study is to investigate the extraction process of the plant collection of expectorant action and evaluate the physicochemical properties of the obtained extract.

**Methods of research.** The plant collection of expectorant action was extracted using various solvents such as water, ethanol, and a combination of both. The extracted solutions were evaluated for their physicochemical properties including color, odor, pH, density, and extract yield. The total flavonoid content and total phenolic content of the obtained extract were also determined using spectrophotometric methods.

**Main results.** The extraction process using a combination of water and ethanol (70:30) resulted in the highest extract yield and the highest content of total flavonoids and total phenolics. The obtained extract had a brownish color, a characteristic odor, and a pH value of 5.5. The density of the extract was found to be 1.08 g/mL. The total flavonoid content and total phenolic content of the extract were 36.24 mg quercetin equivalent/g extract and 41.83 mg gallic acid equivalent/g extract, respectively.

**Conclusions.** The extraction process using a combination of water and ethanol (70:30) was found to be the most efficient method for obtaining the plant collection of expectorant action extract with high yield and content of active compounds. The obtained extract had acceptable physicochemical properties and a high content of flavonoids and phenolics, which are known to exhibit expectorant and anti-inflammatory activities. Further studies such as in vivo evaluation are recommended to confirm the pharmacological activities of the obtained extract.