

# PROSPECTS FOR PHARMACOGNOSTIC STUDY OF REPRESENTATIVES OF THE GENUS VIOLET FOR THE TREATMENT OF SKIN DISEASES

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**Introduction.** Genus *Viola* L. belongs to the family *Violaceae* and includes about 583-620 species. Species of the *Viola* genus are adapted to life in various climatic and ecological conditions and are distributed throughout the globe [2]. They can be found in the temperate zone of the northern hemisphere, in the tropics and subtropics, in the steppes, prairies, semi-deserts. In nature, violets can form hybrids. Currently, many ornamental varieties of hybrid violets are widely cultivated in many countries. The chemical composition of violets is diverse. The herb contains alkaloids, flavonoids, phenols, glycosides, saponins, terpenoids, methyl salicylate, mucus and vitamins.

In ancient medicine, it was very popular violet oil. The oil treats dry skin, injuries, dryness of the chest organs, cough, hair loss, strengthens nails. It helps with lichen, urticaria. In Bulgarian folk medicine, violet herb is used to treatment of skin rashes, as a diuretic. The leaves applied to wounds, swelling, boils. *Viola tricolor* used for purulent wounds, skin itching, rheumatism, gout, atherosclerosis.

In an effort to ensure the complex effect of medical and cosmetic products, complexes of biologically active substances (vitamins, microelements, proteins, enzymes, essential oils, etc.) are often added to their composition. Essential oils with a specific aroma, which are mixtures of many components: terpenes, alcohols, ethers, aldehydes, ketones, phenols, etc., have various pharmacological effects (sedative, bactericidal, anti-inflammatory, analgesic, antispasmodic) [2,3]. They have immunomodulating activity and stimulate the regeneration of damaged tissues, have a beneficial effect on protein metabolism in the skin, and contribute to the preservation of moisture. Essential oils are successfully used in herbal preparations intended for aging skin. Minerals are also of great importance in the vital activity of the body. Potassium regulates the level of moisture in cells. It is necessary for muscle contractions and many enzymatic processes. With a lack of sulfur, the skin is prone to inflammatory diseases. In cosmetics, sulfur is used for gentle cleansing of the skin. Flavonoids have anti-inflammatory, capillary-strengthening, antimicrobial and antiviral effects.

**Materials and methods.** The review of scientific sources was carried out using the following databases: NCBI-PubMed, Web of Knowledge, Science direct, Wiley online library, DOAJ.

**Results and their discussion.** The group of phenolic substances of species of the genus violet is represented by such classes as catechins, leucoanthocyanidins, flavanoni anthocyanidins, flavonoids, flavonols and isoflavonoids. The content of total flavonoids in various species of the genus violet ranges from 1.2% - 3.5%. Flavonoids protect skin cells from damage by free radicals, from the negative effects of ultraviolet radiation, and also restore these damage [3].

Salicylic acid was found in *Viola palustris*, *Viola mirabilis*, *Viola reichenbachiana*, *Viola arvensis*, *Viola canina*, *Viola tricolor*, *Viola odorata*, *Viola*

*rupestris*. In the herb tricolor violet, the content of salicylic acid was 0.1%. Salicylic acid exhibits antiseptic, bactericidal, regenerating, sebum-regulating and wound-healing properties. Widespread anti-aging products that contain skin cells, wrinkle smoothing, skin depigmentation. Also, salicylic acid is part of some antiseptic ointments, anti-inflammatory powders, pastes, alcohol solutions.

Twenty-five components were found in the composition of the essential oil of fresh aerial parts of *V. canina*, which is 98.3% of the total composition of the oil. The essential oil of *V. canina* is a light green liquid with a specific odor, the yield was 0.07%. Essential oil consisted mainly of acyclic diterpenoids (63%), acyclic alkanes (17%) and sesquiterpenoids (13%). The major component of the essential oil was phytol. The essential oil of *V. canina* phytol accumulated 55.2%, *V. arvensis* - 11.4%, *V. tricolor* - 7.3%. Phytol is an acyclicditerpene alcohol which has mild, light floral, balsamic, green jasmine, green tea type of aroma. Phytol has antimicrobial, antitumorous, cytotoxic, antimutagenic, antibiotic-chemotherapeutic, antiteratogenic, antidiabetic, antispasmodic, lipid lowering, anticonvulsant, anti-inflammatory, antioxidant, anxiolytic, antidepressant, hair growth facilitator, hair fall defense and antidandruff activities [1].

Anthocyanin glycosides delphinidin and peonidin were found in the flowers of *V. tricolor* and *V. mirabilis*. In the flowers of *V. bora*, *V. elatior*, *V. mirabilis*, *V. stagnina* leucoanthocyanidins leucodelphinidin and leucocyanidin were found. Anthocyanins exhibit antioxidant properties, eliminate the effects of oxidative stress, which can be effective in the treatment of many metabolic disorders, in particular glucose tolerance, insulin resistance, abdominal obesity, and dyslipidemia. Anthocyanins help reduce the risk of cardiovascular disease, hypertension, obesity and diabetes [4].

Thus, the pharmacognostic study of Genus *Viola* L., including *Viola canina* is promising.

#### **Referencers:**

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