

PL9. FROM MEDICINAL PLANT TO HERBAL DRUG PREPARATION: R&D CASE STUDY

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Medicinal plants were used in healthcare since time immemorial. More than 90% of traditional medicine recipes contain medicinal plants, and medicinal plants are the main materials associated with preventive or treatment strategies for some diseases. Studies were carried out globally to verify their efficacy and some of the findings have led to the production of plant-based medicines. The global market value of medicinal plant products exceeds a hundred billion dollars *per annum*. The products containing herbal preparations as active ingredients are referred to as “traditional herbal medicinal products” in Türkiye. Especially in Traditional and Complementary Medicine Practices, the consumption of these herbal products by society is quite common.

Venous insufficiency is a circulatory dysfunction that usually occurs in the lower extremities. While this condition causes many complaints in the daily life of the patient, it can also cause much more serious problems unless it is treated and controlled. Although it is a preventable and treatable disease, it has become an important economic and social problem today. Since the number of people affected by venous circulation problems is very high, investments in treatment will be an important problem.

Anatolia has very rich flora in terms of medicinal plants. *Ruscus aculeatus* L. (Asparagaceae) also known as Butcher's broom, is naturally growing in Türkiye. The venotonic activity of *R. aculeatus* L. has been reported for several years in both animals and humans. The plant extracts administered either systemically or orally increased venular tone. This activity means that the plant *Ruscus* considerably benefits patients with venous diseases, including peripheral venous disease (PVD) and hemorrhoidal disease. Patients with PVD presenting with the main symptoms of leg edema and the sensation of heavy legs reported they had ameliorated after taking *R. aculeatus* L. extract. The bioactive compounds identified in the plant extract include saponins (ruskogenin, neuroruskogenin), flavonoids, coumarin, and sterols.

In our studies, *Ruscus aculeatus* was collected from the areas where it is distributed in the Flora of Türkiye, and extraction and optimization processes was carried out. The contents of the extracts of the species collected by High Pressure Liquid Chromatography had been compared qualitatively and quantitatively and standardization was carried out based on the active and/or highest amount of substances. With this study, we will eliminate a significant deficiency in the field of health, improve the quality of life of patients with venous circulation disorders, and pave the way for the development of economically low-cost, high-potential local traditional herbal medicinal products.

Keywords: Ruscus, ruscogenin, venous problems