

# Study on the Common Selfheal - based products for human use

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## Introduction

The common selfheal, *Prunella vulgaris* L., also known in Bulgarian as "prishnitsa", is a herbaceous, widespread, wild plant, part of the Bulgarian flora. A typical representative as morphological characteristics of the Lamiaceae family.

The common selfheal known as "Xia Ku Cao" is part of Traditional Chinese Medicine, where the morphological part "spica" is mainly used - fruit-spike. *Prunellae spica* is used for the treatment of many diseases, e.g. swollen eyes, scrofula, swollen and painful mastitis, breast cancer, tuberculosis and other conditions.

In recent years the interest in *Prunella vulgaris* L. and the herbal substance used by it - *Prunellae spica* is growing worldwide and the plant for the first time in 2017 is included in the European Pharmacopoeia (Ph.Eur. 8) with the monograph Common Selfheal fruit-spike (2439: 01/2017).

A number of contemporary papers focus on review on the phytochemical constituents and pharmacological effect (Bai et al., 2016; Wang et al., 2019).

The focus of this study is the products containing herbal substances and/or herbal preparations of common selfheal, established from publicly available databases. The herbal products have been analyzed to determine their diversity, structure, active substances, functions, target area and application. A comparative analysis has been carried out according to the known data on the biological activity of *Prunella vulgaris* L.

and the herbal substances *Prunellae herba* and *Prunellae spica*.

## Materials and methods

The study has been conducted in publicly available databases with information on available plant products with a component *Prunella vulgaris* herbal substances and/or herbal preparations, including medical, pharmaceutical, commercial and specialized (BDA, Cos Ing and etc.).

## Results and discussion

Over 50 herbal products have been identified in approximately equal proportions: dietary supplements (52%) and cosmetics (41%).

### *Combinations of herbal substance(s) and/or herbal preparation(s)*

Both mono-components of *Prunellae herba* (extract, tincture, essential oil) and combinations with plants mainly with herbal substances from Traditional Chinese Medicine (*Centella asiatica*, *Gleditsia sinensis*), but also with species present in the Bulgarian flora (*Arctium lappa*) are widely used.

### *Prunella as a cosmetic ingredient*

Nine cosmetic ingredients from *Prunella vulgaris* have been registered with skin and hair conditioning and protecting functions, antioxidant function, as well as an emollient and antiseborrhoeic

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(CosIng, 2020). Fermented filtrates and hydrolyzed extracts are present.

Mono-component (55.5%) ingredients predominate as herbal substances and herbal preparations as follows: *Prunella Vulgaris* (dried cut herb) (1), *Prunella Vulgaris* Extract (extract of the whole plant) (1), *Prunella Vulgaris* Flower/Leaf/Stem Extract (extract of the flowers, leaves and stems) (1), *Prunella Vulgaris* Flower Extract (1) and *Prunella Vulgaris* Leaf Extract (1). The other ingredients are combinations of more than three herbal preparations (extracts and/or ferments). The diversity of plant species includes *Bidens tripartita* L. (Compositae), *Perilla frutescens* (L.) Britton (Lamiaceae), *Centella asiatica* (L.) Urb. (Apiaceae), *Gleditsia sinensis* Lam. (Leguminosae), *Houttuynia cordata* Thunb. (Saururaceae), *Phellodendron amurense* Rupr. (Rutaceae), *Polygonum cuspidatum* Willd. ex Spreng. (Polygonaceae), *Glycine max* (L.) Merr. (Leguminosae) and *Torilis japonica* (Houtt.) DC. (Apiaceae). In addition, a filtrate of the product obtained by the co-fermentation of the flowers and leaves of *Prunella vulgaris* and *Glycine max* by the microorganisms (*Bacillus* spp., *Monascus* spp.) is also used. An interesting component for a synergistic effect is hydrolysate of an extract of the aerial parts of *Prunella vulgaris* derived by acid, enzyme or other method of hydrolysis as well as *Torilis japonica* extract by the *Lactobacillus* spp. (CosIng, 2020).

#### *Prunella* in cosmetic products

Several types of cosmetic products have been identified during the study: pore care sheet mask (antioxidant), makeup remover (restorative cleanser gel), body cream (moisturizer and soothing skin cream), aromatherapy body cream (stimulates the skins own healing processes), body lotion (anti-inflammatory), hand and foot balsam (skin care substance), hair conditioner (intensively nourishes and strengthens the hair) and toothpaste (health care, repairing damaged tissue). *Prunella vulgaris* is a key ingredient in a baby herbal cosmetic series with anti-inflammatory and antiallergic properties.

#### Dietary supplements

The main purpose of the established dietary supplements is as immunostimulants and in the treatment of skin diseases and superficial wounds, which corresponds to part of the experimentally established in the last decade antioxidant,

antibacterial, antiviral, anti-inflammatory, anticarcinogenic, antihyperglycemic and immunomodulatory activities.

#### Herbal medicinal products

*Prunella vulgaris* is a pharmacopoeial medicinal plant (Common selfheal fruit-spike, Ph. Eur. 10.0, 2439:01/2017). No registered herbal medicinal products have been identified (BDA, 2020).

#### Conclusion

*Prunella vulgaris* is a plant with wide traditional use, the focus is on a number of modern phytochemical and pharmacological studies. Traditional knowledge and scientific evidence of its effects far exceed their use today in products from the plant. Compared to registered one, the established cosmetics have a wider range of functions based on traditional knowledge. The analysis shows *Prunella vulgaris* as a herb with potential for the development of herbal medicinal products.

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