

***Arctostaphylos uva-ursi* (L.) Spreng. – an overview of phytochemistry, pharmacological and safety profile of standardized medicinal products**

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Bearberry leaf (*Uvae ursi folium*) consists of whole or cut, dried leaf of *Arctostaphylos uva-ursi* (L.) Spreng. The main constituents of the herbal substance are hydroquinone derivatives, polyphenols (tannins), phenolic acids, flavonoids, iridoids and triterpenes. The pharmacological effect is contributed to arbutin and methyl arbutin.

Standardized herbal medicinal products are used for relief of symptoms of mild recurrent lower urinary tract infections in women based upon long-standing use.

Based on the available studies on the effectiveness of this herbal medicinal product, it can be attributed to hydroquinone derivatives. Arbutin is absorbed unchanged from the GI tract, and during renal excretion, it is hydrolyzed to yield an active principle, hydroquinone, which exerts antiseptic and astringent action on the urinary mucous membranes. The total amount of hydroquinone in urine is considered crucial for the therapeutic activity of the herbal extract and is increased and prolonged in alkaline urine. Free hydroquinone has a very low risk of accumulation in the body, as it rapidly conjugates and transforms into harmless metabolites.

The only risk currently identified in literature is related to the toxicity of hydroquinone in studies in animals and in certain *in vitro* tests. However, the hydroquinone dose in standardized medicinal products is below the TTC value (1 mg/ml), and the time of exposure to hydroquinone in the human body is very short, as it is rapidly metabolized to the non-toxic metabolites excreted by urine. In addition, since the use of *uva-ursi* is time-limited, it is considered that there is no risk of potential hydroquinone accumulation in the body.

Keywords: *Arctostaphylos uva-ursi* – bearberry – urinary tract infections – herbal medicinal product