

THE THERAPEUTIC TRENDS AND FUTURE DIRECTIONS OF THE GENUS VACCINIUM BERRY EXTRACTS

Ilona VANAGA^{1,2,3}, **Anete RATENIECE**^{2,3}, **Zane GREIŽA**², **Uģis KLĒTNIEKS**^{2,3}, **Māris KĻAVIŅŠ**⁴

¹Faculty of Medicine, University of Latvia, ² SIA “Silv EXPO”, ilona.vanaga@silvexpo.lv,

³AS “Biolat”, ⁴ Department of Environmental Science, University of Latvia

Vaccinium genus berries are emerging as natural therapeutic alternatives in modern medicine and popularity of their use is growing. The health effects of these berries have been studied in several areas including cardiovascular disease, type II diabetes, Alzheimer’s disease, and their anti-ulcer, anti-viral, anti-inflammatory and stress-reducing activities (Gowd *et al.*, 2017).

The objective of the current study was to carry out an evidence-based systematic review on the *Vaccinium* genus berry, e.g., bilberry, blueberry, cranberry and lingonberry extracts for the purpose of defining thereof possible applications in medical therapies.

The adopted research strategy was to conduct electronic searches in eight databases, including ScienceDirect, Scopus, PubMed, Medline, HerbMed, the Cochrane Library, Web of Science and EBSCO. The selection criteria comprised all literature from years 2000-2017 pertaining to efficacy studies in humans (regardless of study design, quality, or language) and mechanisms of action (*in vitro*, *in vivo*).

The reviewed research conducted *in vitro* has demonstrated that polyphenolic flavonoids, like those contained in *Vaccinium* genus berries, possess mostly anti-oxidant and anti-inflammatory bioactivities that may be beneficial to health. However, more convincing evidence can be obtained from *in vivo* studies, since they provide more data on the efficient dosage and bioavailability of the various phenolics in the berry extracts.

Further research efforts should pay special attention to the bioavailability of the berry antioxidant compounds, as well as to the more determined confirmation of their effects on consumer health in order to promote their outstanding nutraceutical potential.

Supported by the European Regional Development Fund within the project No. 1.1.1.1/16/A/047 “Genus Vaccinium berry processing using “green” technologies and innovative, pharmacologically characterised biopharmaceutical products”.

Literature: Gowda, V., 2017. Anthocyanins as promising molecules and dietary bioactive components against diabetes. *Trends Food Sci. Technol.*, **68**, pp. 1-13.