



Bioactive Compounds of Elder (*Sambucus nigra* L.) with Focus on their Potential Anti-diabetic Effects

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Preparations of elder (*Sambucus nigra*) are used in traditional medicine as diuretics and to treat colds, influenza, inflammation and diabetes. Elderberries and elderflowers are rich in polyphenols such as phenolic acids, flavonol glycerides, and anthocyanins. Polyphenols are known for their antioxidant activity and are believed to prevent oxidative stress, a condition that may lead to serious diseases such as cancer, cardiovascular diseases, inflammation and type-2 diabetes (T2D). Hence, polyphenols have been pointed out as beneficial agents in both elderflowers and elderberries. Epidemiological investigations tend to confirm the protective effects of polyphenols against cardiovascular diseases and T2D, but the mechanisms by which they exert their protective effects are far from understood...

Extracts of elderflowers have been found to exert insulin-like and insulin-releasing actions *in vitro* and to activate PPAR γ as well as to stimulate insulin-dependent glucose uptake. This indicates that elderflowers may be used in the prevention and/or treatment of insulin resistance...

This research confirmed indirect effects of elderflowers in treatment of insulin and glucose uptake deficiencies. The researchers commented that elderberry polyphenols are bioavailable in the liver, where they incite the development of cytokines. Currently, commercial elderflower preparations sold in North America use European components. Their use is very limited in the USA. For growers of cultivated elder, this research identifies a strong potential market for elderflowers in North America as has been established in Europe due to their effectively potent set of nutrient compounds – especially in the treatment of insulin/glucose uptake health deficiencies in general and Type-2 Diabetes in particular.