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## POLYPHENOLIC COMPOUNDS FROM VACCINIUM SPECIES ACT AS ALDOSE-REDUCTASE INHIBITORS?

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**C**ataract development among diabetic patients is a real problem nowadays. This opacification of the lens appears due to the high glycaemic levels, when glucose cannot be metabolized through the normal pathway due to its' saturation, so it is metabolized through an additional one called the polyol pathway, where under the action of aldose reductase it is transformed into sorbitol, and further the sorbitol under the action of sorbitol dehydrogenase is transformed to fructose. Both sorbitol and fructose are inactive compounds and possess osmotic properties. Synthetic compounds, although with a high capacity of inhibition have proved to have serious side effects. Natural compounds could be an alternative for aldose reductase inhibition. The present study was undertaken to evaluate the prevention of cataractogenesis *in vitro* by *Vaccinium* extracts obtained from the fruits and leaves collected from *Vaccinium myrtillus* and *Vaccinium corymbosum*. Total polyphenols, total monomeric anthocyanins and tannins content were determined spectrophotometrically. Chlorogenic acid was quantitatively determined by HPLC-DAD. The study was performed on chicken lenses incubated for 72 hours in Roti@CELL-Medium (with glutamine and HEPES), 55 mM glucose and *Vaccinium* extracts. The lens opacity was graded on a 4-stage scale. None of the lenses incubated with *Vaccinium myrtillus* leaves extract had shown signs of opacity. *Vaccinium corymbosum* leaves extract showed a lower protection against opacification. Fruit extracts did not prevent the opacification of the lenses. The protective effect of leaves extracts on lens is correlated with the chlorogenic acid content, which is considered to be an aldose-reductase inhibitor.

### Biography

Ruxandra Ștefănescu (Braic) is a PhD student from the University of Medicine and Pharmacy Tîrgu Mureș. Her main interests are Phytotherapy, Phytopharmacology, Pharmacology, Pharmacognosy and Analytical Chemistry.

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