

OcuGLO Rx™ DECREASES LIPID PEROXIDATION, NUCLEAR TRANSLOCATION OF nrf2, AND INTRAOCULAR PRESSURE IN GLAUCOMATOUS DBA/2J MICE

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Purpose. To test the hypothesis that the canine antioxidant OcuGLO Rx™ decreases oxidative stress and nuclear translocation of nrf2 in glaucomatous DBA/2J (D2) mice and to evaluate the effect of OcuGLO Rx™ on intraocular pressures (IOPs) in mice.

Methods. D2 mice and the control (C57) mice were fed either OcuGLO Rx™ enhanced or a control diet from 2 months of age until sample collection. IOPs were obtained from each eye, 2 or 3 times a month, from 2-8 months of age. Sample collection consisted of retinal immunohistochemistry for 2 markers of oxidative stress, malondialdehyde (MDA) and nrf2, followed by image analysis for staining patterns and density. **Results.**

Treatment with OcuGLO Rx™ significantly decreased the IOPs of the 8 month old D2 mice compared to untreated D2 mice. Density image analysis revealed significantly more MDA and nrf2 staining in the ganglion cell layer (GCL) of untreated D2 mice compared to the control and treated D2 mice. **Conclusions.** In untreated D2 mice, IOPS and also oxidative stress markers in the GCL neurons were increased by 8 months of age compared to the controls. Results suggest that these elevations in IOP and changes in oxidative stress were decreased by feeding OcuGLO Rx™. The ability of OcuGLO Rx™, a mixture of antioxidants, to decrease oxidative stress and IOPs in D2 mice provides further support for the hypothesis that oxidative stress contributes to the pathogenesis of some types of glaucoma. Partially supported by Animal Necessity LLC. **None.**