



## **Protective Effects of Elderberry against Cerebral Ischemic Injury**

Dennis Y. Chuang, Jiankun Cui, Agnes Simonyi, Victoria A. Engel, Shanyan Chen, Orr Hadass, Kevin L. Fritsche, William R. Folk, Andres L. Thomas, Wendy L. Applequist, George E. Rottinghaus, Dennis B. Lubahn, Zezong Gu, and Grace y. Sun. University of Missouri, Center for Botanical Interaction Studies, Columbia, MO, USA

**...In this study, we focus on the effects of *S. nigra* subsp. *canadensis* (elderberry), known to contain bioflavonoids and cyanindin-3-glucosides which are considered potent anti-oxidants. Previous studies have demonstrated protective effects of botanical polyphenols including resveratrol and curcumin on cerebral ischemia-reperfusion damage. In this study, we aimed to investigate whether supplementation with elderberry diet can similarly ameliorate brain damage using a transient global cerebral ischemia model in mice induced by a 30 min bilateral common carotid artery (BCCA) occlusion...mice were fed with either the control AIN93 diet or an AIN93 diet with 2% elderberry in dried mass weight for 2 months.**

**...Administration of elderberry diet partly ameliorated this deficit by prolonging the rotarod latencies. Quantitative digital pathology assessment of cresyl violet-stained stereological sections showed significant reduction in neuronal cell damage in the elderberry-treated group as compared with controls fed with the diet without elderberry...Taken together, our results demonstrated protective effects of elderberry diet in a mouse model of cerebral ischemic stroke and its potential translational value as dietary supplement against ischemic stroke.**

This study used multiple technical evidence sets to demonstrate that a diet providing regular supplementation of elderberry protected the brains of these specially bred mice against the damage caused by induced stroke. Mice fed elderberry also suffered observably and notably less brain damage. Of course, much more work needs to be done, but the evidence is encouraging. [The farm providing the elderberries is also a primary source of berries used in making River Hills Harvest elderberry juice products.]