

JOINT EVENT

4th International Conference on **Epilepsy & Treatment**
&
4th World Congress on **Parkinsons & Huntington Disease**
August 29-30, 2018 | Zurich, Switzerland

Quercetin prevents the ischemic injury-induced decrease of thioredoxin expression in brain tissue**Phil-Ok Koh**

Gyeongsang National University, South Korea

Quercetin is a bioactive flavonoid abundant in vegetables and fruits. Quercetin is an especially effective agent against neuronal damage following global and focal cerebral ischemia. Thioredoxin has various physiological functions including regulation of cellular redox homeostasis and apoptosis. The aim of this study was to investigate whether quercetin regulates thioredoxin expression in focal cerebral ischemia. Male Sprague Dawley rats (210–230 g) were used for experiments and injected with either quercetin (10 mg/kg) or vehicle via the intraperitoneal cavity one hour prior to middle cerebral artery occlusion (MCAO). Cerebral cortex tissues were isolated 24 h after MCAO. Using a proteomics approach, thioredoxin expression was found to be decreased in vehicle-treated MCAO animals, while treatment with quercetin attenuated this decrease. The effect of quercetin on the MCAO-induced decrease in thioredoxin expression was confirmed by Western blot and reverse-transcription-PCR analyses. Immunofluorescence staining showed that quercetin treatment alleviated the decrease in thioredoxin positive cells in the cerebral cortex of animals with MCAO surgical injury. Furthermore, immunoprecipitation analysis demonstrated that binding between apoptosis signal-regulating kinase 1 (ASK1) and thioredoxin were decreased in vehicle-treated MCAO animals, while treatment with quercetin attenuated this effect. Our results indicate that thioredoxin has neuroprotective functions against oxidative stress in brain ischemic injury. Maintenance of thioredoxin expression by quercetin administration may help to prevent neuronal cell death following cerebral ischemia. Our findings suggest that quercetin mediates its neuroprotective function by regulating thioredoxin.

Biography

Phil-Ok Koh completed her PhD from Gyeongsang National University and Post-doctorate from University of Maryland at Baltimore, USA. She is the Professor of College of Veterinary Medicine, Gyeongsang National University. She has published more than 180 papers in reputed journals and has been serving as an Editorial Board Member of repute.

pokoh@gnu.ac.kr

Notes: