

JOINT EVENT

11th International Conference on **Vascular Dementia** & **27th Euro-Global Neurologists Meeting**

July 23-25, 2018 | Moscow, Russia

Quercetin alleviates the ischemic injury-induced decrease of protein phosphatase 2A subunit B in brain

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Quercetin is a plant flavonoid that exerts anti-oxidant, anti-inflammatory, anti-cancer, and anti-ischemic properties. Moreover, quercetin has neuroprotective properties against cerebral ischemia. Protein phosphatase 2A (PP2A) is a form of serine/threonine phosphatase that modulates a variety of different functions. PP2A subunit B exists abundantly in the nervous system. This study explored the neuroprotective effects of quercetin in focal cerebral ischemia by targeting the regulation of PP2A subunit B. Quercetin was injected intraperitoneally into male Sprague-Dawley rats at a dose of 10 mg/kg before 1hr of ischemia. Focal cerebral ischemia was induced by middle cerebral artery occlusion (MCAO), and cerebral cortices were isolated 24hr after MCAO. We confirmed that MCAO induced the neurological behavioral deficits and increased infarct volume. However, quercetin treatment attenuated increase of neurological deficits and infarction. We identified the decrease in PP2A subunit B in cerebral ischemic injury using a proteomic approach. Quercetin treatment attenuated the MCAO-induced decrease in PP2A. Reverse transcription PCR and Western blot analyses confirmed lower PP2A subunit B expression levels in the MCAO group. However, quercetin treatment reversed this ischemic-induced reduction in PP2A subunit B. Our finding showed that quercetin preserves the expression level of PP2A subunit B in the presence of cerebral ischemia and glutamate toxicity.

Biography

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

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