Fifth leading cause of death-induced brain damage due to ischemia

Suin Cho¹, Chiyeon Lim² and Sehyun Lim³
¹Pusan National University School of Korean Medicine, Republic of South Korea
²For East University, Republic of South Korea
³Pusan National University Republic of South Korea

Ischemia induced brain damage is the leading cause of adult disability and the fifth leading cause of death, and thus, the development of anti-apoptotic neuro-protective therapeutic agents is viewed as an attractive developmental strategy. Glycyrrhizin is the main sweet component in licorice and has a number of pharmacological activities, which include neuro-protective, anti-fungal, and anti-cariogenic activities. This study was undertaken to investigate the effects of glycyrrhizin on ischemia-induced brain damage. In infarct volumes and the levels of several apoptosis-related proteins, caspase-3, -8, 9, Bcl-xl, Bcl-2, and their activities in the brains of middle cerebral artery occlusion (MCAO) treated mice were measured using western blotting methods. Single pre-treatment with glycyrrhizin (10-100 mg/kg) at 2 hours before MCAO (Middle Cerebral Artery Occlusion) significantly reduced infarct volumes at 24 h after MCAO. In addition, glycyrrhizin effectively inhibited the activations of caspase-3 and -9 and the down-regulation of Bcl-xl protein caused by MCAO. The neuro-protective effect of glycyrrhizin was found to be due to its regulation of apoptosis-related proteins signals. The authors suggest glycyrrhizin be considered a potential candidate for the treatment of ischemia induced brain damage.

Biography

Suin Cho pursued his MD PhD from Dongeui University College of Korean Medicine located in Republic of South Korea and Postdoctoral studies from Harvard University School of Medicine (USA). He is a faculty of the Pusan National University School of Korean Medicine. He has published more than 30 papers in reputed journals and has been serving as an Editorial Board Member of Korean Journal of Herbology.

sicho@pusan.ac.kr

Notes: