

허혈-재관류 유도 신경세포사멸에 대한 초석잠 추출물의 신경보호 효과 연구

이영경, 김철환, 신수영, 황병수, 서민정, 황혜진, 최경민, 정진우*

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Neuroprotective Effects of *Stachys sieboldii* Miq. Extract Against Ischemia/reperfusion-induced Apoptosis in SH-SY5Y Neuroblastoma Cells

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Stachys sieboldii Miq. (chinese artichoke), which has been extensively used in oriental traditional medicine to treat of ischemic stroke; however, the role of *Stachys sieboldii* Miq. (SSM) in cerebral ischemia/reperfusion (I/R) injury is not yet fully understood. In the current study, the neuroblastoma cell line (SH-SY5Y) were subjected to oxygen-glucose deprivation/reperfusion (OGD/R) to simulate I/R injury in vitro model. The results showed that SSM improved OGD/R-induced inhibitory effect on cell viability of SH-SY5Y Cells. SSM displayed anti-oxidative activity as proved by the decreased levels of reactive oxygen species (ROS) and malondialdehyde (MDA), and increased activities of superoxide dismutase (SOD) and glutathione peroxidase (GPx) in OGD/R-induced SH-SY5Y Cells. In addition, cell apoptosis was markedly decreased after SSM treatment in OGD/R-induced SH-SY5Y Cells. The up-regulation of Bcl-2 and down-regulation of Bax, thus reducing the Bax/Bcl-2 ratio that in turn protected the activation of caspase-9 and -3, and inhibition of poly (ADP-ribose) polymerase cleavage, which was associated with the blocking of cytochrome c release to the cytoplasm. Collectively, SSM protected human neuroblastoma SH-SY5Y cells from OGD/R-induced injury *via* preventing mitochondrial-dependent pathway through scavenging excessive ROS, suggesting that SSM might be a potential agent for the ischemic stroke therapy.

Key words: *Stachys sieboldii* Miq., Oxygen-glucose deprivation/reoxygenation, Oxidative stress, Apoptosis, SH-SY5Y cells

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