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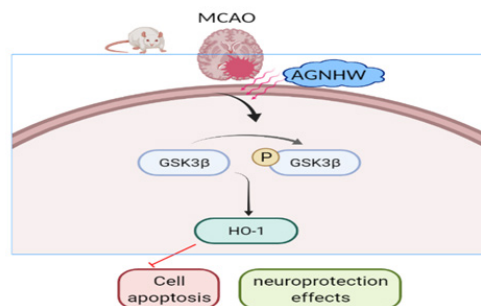
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Protective effect of an-gong-niu-huang wan pre-treatment against experimental *Cerebral Ischemia* injury via regulating GSK-3B/HO-1 pathway

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Ischemic stroke has been one of the leading causes of death and disability worldwide and belongs to neurological diseases. A stroke usually leads to permanent brain damage, long-term disability, and even death. It is necessary to find effective treatments and drugs. This study conforms to the theme of the conference on Neurology and Therapeutics, by studying the protective effect of famous Chinese herbs on ischemic stroke prevention. An-Gong-Niu-Huang Wan (AGNHW), a famous Chinese herbal formula, has a clear effect in the treatment of cerebral ischemia and has been used for hundreds of years. In this study, we investigated the preventive effect of AGNHW on cerebral ischemia for the first time by pretreatment. To investigate the preventive protective effect of AGNHW by detecting neurological function score, cerebral infarction area, neuronal apoptosis and cerebral oxidative stress status. AGNHW was administered orally at the doses of 386.26, 772.52, and 1545.04 mg/kg respectively for 7 days to male Sprague-Dawley rats and then cerebral ischemia was induced by middle cerebral artery occlusion (MCAO) for 1.5 h. Pre-treatment with AGNHW significantly ameliorated ischemic damage to the brain in a dose-dependent manner, including reduction of the neurological deficit score and infarct area. AGNHW pretreatment increased the number of Nissl⁺ cells, NeuN⁺ and DCX⁺ cells, and decreased the number of TUNEL⁺ cells. Moreover, AGNHW reversed the up-regulation of ROS and MDA induced by cerebral ischemia. AGNHW pre-treatment increased the expression of p-GSK-3β(Ser9)/GSK-3β (glycogen synthase kinase-3β) ratio and heme oxygenase-1(HO-1). These results firstly revealed that short-term pre-treatment of AGNHW could significantly protect the rats from injury caused by cerebral ischemia-reperfusion, which support further clinical studies for disease prevention. The *in vivo* protective effect of AGNHW pre-treatment could be associated with its antioxidant properties by the activation of GSK-3β-mediated HO-1 pathway.



Recent Publication

1. Zhang Shiqing, Jiang Xiaoli, Wang Ying et al. An-Gong-Niu-Huang Wan Protective Effect of Pre-treatment Against Experimental Cerebral Ischemia Injury via Regulating GSK-3β/HO-1 Pathway. [J]. Front Pharmacol, 2021, 12: 640297.

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2. Jiang Xiao-Li, Deng Bo, Deng Sui-Hui et al. Dihydrotanshinone I inhibits the growth of hepatoma cells by direct inhibition of Src. [J]. *Phytomedicine*, 2022, 95: 153705.
3. Deng Bo, Jiang Xiao-Li, Tan Zhang-Bin et al. Dauricine inhibits proliferation and promotes death of melanoma cells via inhibition of Src/STAT3 signaling. [J]. *Phytother Res*, 2021, 35: 3836-3847.

Biography

Jiang Xiaoli received the Bachelor of Medicine degree in Integration of Traditional and Western Medicine in 2011 and the Master of Medicine degree in Clinical Discipline of Chinese and Western Integrative Medicine, in 2019 from Guangzhou Medical University, Guangzhou, China. She is currently working toward the Ph.D. degree in Neuroscience with the Department of Biology, Hong Kong Baptist University, Hong Kong, China. Her research interests is to investigate the molecular mechanisms of Traditional Chinese Medicine and its active components in the prevention and treatment of nervous system disease and tumor.

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