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A Novel 5-Chloro-N-phenyl-1 H-indole-2-carboxamide Derivative as Brain-Type Glycogen Phosphorylase Inhibitor: Exploration of biological activity and mechanism of action.

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Tissue damage induced by ischemia is the main cause of fatal diseases, such as stroke. After treatment there are still sequelae that make the patient unable to take care of himself/herself with the disease, creating anxiety and even depression. Brain glycogen has a key role in hypoxic-ischemic brain injury. Abnormal glycogen metabolism is an important pathological factor in hypoxic-ischemic brain injury, and brain-type glycogen phosphorylase (PYGB) is a key catalyst for brain glycogen metabolism. Therefore, brain-type glycogen phosphorylase plays an important role in the prevention and treatment of cerebral ischemia. Compound 1 is a novel 5-Chloro-N-phenyl-1H-indole-2-carboxamide derivative as brain-type glycogen phosphorylase inhibitor (Fig1). We have demonstrated its potential therapeutic effect on cerebral ischemia. We have now knocked down the PYGB gene and performed a series of experiments to find the mechanism of the protective effect of Compound 1 on astrocytes. We initially found that the protective effect of Compound 1 was diminished after knocking down the PYGB gene, which provides a direction to investigate the mechanism of the protective effect of Compound 1 on cerebral ischemia.

Biography

Yatao Huang is currently a master student at the Institute of Traditional Chinese Medicine, Chengde Medical University, where he is engaged in drug synthesis and screening, probe molecular design and synthesis, and biological activity evaluation of drugs. He published a research paper in Molecules as the first author.