

Protective effect against ischemic stroke of phytosome containing the combined extract of ginger and mulberry fruit

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Despite the continually increasing of ischemic stroke in obesity, the current therapeutic strategy against aforementioned condition is still limited. Therefore, the development of novel therapeutic strategy against ischemic stroke in obesity condition is considered. Accumulative lines of evidence demonstrate that ginger rhizome and mulberry fruits are commonly used as food and medicine in Thailand. They were previously demonstrated to possess antioxidant, anti-inflammation and neuroprotection effects. However, the plant-based bioactive compounds are poorly absorbed leading to poor bioavailability. To overcome this problem, phytosome technology is considered to enhance the absorption of poorly absorbed lipid soluble active constituents from the herb extracts. Based on this information as mentioned earlier, the neuroprotective effect against ischemic stroke in obesity condition of phytosome containing the combined extract of ginger and mulberry fruits (PGM) has been focused. Therefore, this study aimed to determine the effect of PGM on brain damage and possible underlying mechanisms in obese rats with the occlusion of Middle Cerebral Artery (MCA). PGM at doses of 50, 100 and 200 mg/kg were orally given to male Wistar rats which were induced obesity by high fat diet for 21 days and subjected to the Rt. MCAO. The results showed that PGM significantly improved brain infarction, brain edema and neurological deficit score in obese rats with Rt. MCAO. Furthermore, the reduction in MDA level, NF- κ B, IL-6, DNMT-1 together with the increase in SOD, CAT and GSH-Px activity and PPAR- γ in the ipsilateral brain were also observed. The current data clearly revealed the neuroprotective effect against ischemic stroke in obesity condition. The possible underlying mechanism might occur partly via the suppression of DNMT-1 which in turn increased PPAR- γ resulting in the decreasing of inflammation and oxidative stress. In conclusion, PGM is the potential neuroprotectant candidate against ischemic stroke in obesity condition. However, the clinical trial is still essential.

Biography

Nut Palachai is a PhD candidate in Neuroscience program, Department of Physiology, Faculty of Medicine, Khon Kaen University, Thailand. He is interested in the developments of functional foods and health products, role of nutrigenomic and nutriepigenetic and research filed in neuroscience.

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