Neuroprotective effects of Hexane fraction of M61 on Delayed Neuronal Death after Transient global Ischemia in Gerbil Hippocampus

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Several lines of recent evidences have shown that several pro-inflammatory genes or mediators, such as inducible nitric oxide synthase (iNOS) are strongly expressed in the ischemic brain. Inflammation is now recognized as a significant contributing mechanism in cerebral ischemia because anti-inflammatory compounds or inhibitors of iNOS have been proven to reduce ischemic brain damage. In iNOS assay, hexane fraction of M61 inhibited NO (iNOS IC50, 0.7µg/ml). In vivo study was carried out to evaluate neuroprotective effect of hexane fraction of M61 after transient global ischemia using Mongolian gerbil ischemia model. The morphological study was performed 7 days after ischemia or sham-operation. Histopathological evaluation of delayed neuronal death (DND) was performed by microtuble associated protein 2 (MAP2) as a marker protein in dendrites. In addition, the effects of hexane fraction of M61 on the apoptosis in the hippocampal CA1 region of gerbils following transient global ischemia were investigated via immunohistochemistry for caspase-3 and terminal deoxynucleotidyl transferase-mediated dUTP nick end labeling (TUNEL) assay. Enhanced TUNEL, and caspase-3 positivities were detected in the hippocampal CA1 region in the ischemic gerbils. Hexane fraction of M61 treatment suppressed the ischemia-induced increment in the number of TUNEL-, and caspase-3-positive cells. These results suggest that hexane fraction of M61 treatment alleviates ischemia-induced apoptosis and may aid in the recovery following ischemic cerebral injury.

Protoberberine alkaloids from the rhizome of Coptis japonica Makino

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As part of our program to isolate bioactive compounds from korean natural sources, we have screened traditional medicinal plants to cytotoxicity on human tumor cells. Of them, the MeOH extract from rhizome of Coptis japonica Makino was found to be active against five cultured human tumor cell lines. So, the MeOH extract was subjected to successive solvent partitioning to give n-hexane, chloroform and BuOH. The activity was concentrated into the chloroform extract. The extract was chromatographed on a silica gel column and resulted in the isolation 5 alkaloids. Their structures were determined by physicochemical and spectroscopic methods. The bioactivity study of the isolated compounds are under going.

Cytotoxic Activity of Styrax japonica S. et Z.

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