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Neuroprotective compounds from embryo of *Nelumbo nucifera* seed

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Previous study showed that cognitive effect of embryo of *Nelumbo nucifera* on scopolamine-induced memory impairment and neuroprotective effect against glutamate-induced cytotoxicity in the HT22 cells. This study was designed to evaluate the neuroprotective effect of compounds were isolated from embryo of *Nelumbo nucifera* seed on glutamate-induced cell death in HT22 cell. Neuroprotective effects of compounds against glutamate-induced cell death in HT22 cells were investigated by MTT assay. We isolated 6 compounds, 1,2,3,4-tetrahydro-7,8-isoquinolinediol (1), 1,2,3,4-tetrahydro-1-[(4-hydroxyphenyl)methyl]-2-methyl-6,7-Isoquinolinediol (2), 1,2,3,4-tetrahydro-1-[(4-hydroxyphenyl)methyl]-2-methyl-7-Isoquinolinol (3), 1-(3,4,5-trihydroxyphenyl)-ethanone (4), 1-(2,3,5,6-tetrahydroxyphenyl)-ethanone (5), 3-(prop-1-enyl)benzene-1,2,4,5-tetrol (6) from embryo of *Nelumbo nucifera*. Among compounds, 1,2,3,4-tetrahydro-7,8-isoquinolinediol and 1,2,3,4-tetrahydro-1-[(4-hydroxyphenyl)methyl]-2-methyl-6,7-Isoquinolinediol significantly decreased glutamate-induced cell death in the HT22 cell. In addition, these compounds exacerbate ROS level and intracellular Ca²⁺ accumulation. In conclusion, the neuroprotective effect of 1,2,3,4-tetrahydro-7,8-isoquinolinediol and 1,2,3,4-tetrahydro-1-[(4-hydroxyphenyl)methyl]-2-methyl-6,7-Isoquinolinediol may be related with anti-oxidative effect.

Biography

Jin Bae Weon is currently pursuing Doctor's course in Department of Medical Biomaterials Engineering, College of Biomedical Science, Kangwon National University. His major is pharmacognosy and chemistry of organic natural products. He has published more than 20 papers in reputed journals.

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