

독활의 뇌허혈 보호효과

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Protective effects of *Aralia cordata* on cerebral ischemia

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Objectives

*Aralia cordata* (Araliaceae) (AC) has been reported for the inhibitory activity against COX-1 and COX-2. However, only a few papers have reported on the central nervous system of AC. In the present study, we intended to reveal the protective effects of 70% ethanol extract of aerial part of AC by evaluating the effects of AC on H<sub>2</sub>O<sub>2</sub> induced cytotoxicity in primarily cultured rat cortical neurons along with middle cerebral artery occlusion (MCAo) induced focal cerebral ischemia in rats.

Materials and Methods

○ Materials

- 70% ethanol extract of aerial part of *Aralia Cordata*

○ Methods

- Primary neuronal culture : Cerebral cortical neurons (E15 SD rat)

- Analysis of cell viability : MTT colorimetric assay

- MCAo (SD rat) : TTC staining

Results and Discussions

We have observed profound the decrease in the cell viability with H<sub>2</sub>O<sub>2</sub> (100 μM) and the inhibition of AC (10 and 20 μg/ml) on H<sub>2</sub>O<sub>2</sub>-induced neurotoxicity. In addition to the in vitro efficacy, administration of AC (30 and 50 mg/kg, p.o.) reduced the total infarct volume in MCAo induced cerebral ischemia. Present study demonstrates the neuroprotective effects of AC, in *in vitro* and *in vivo* model of cerebral ischemia. These results suggest that AC prevents the oxidative stress induced cell injury and the pathogenesis of cerebral ischemia and may help to explain at least its inhibitory action on the progression of cerebral ischemia.

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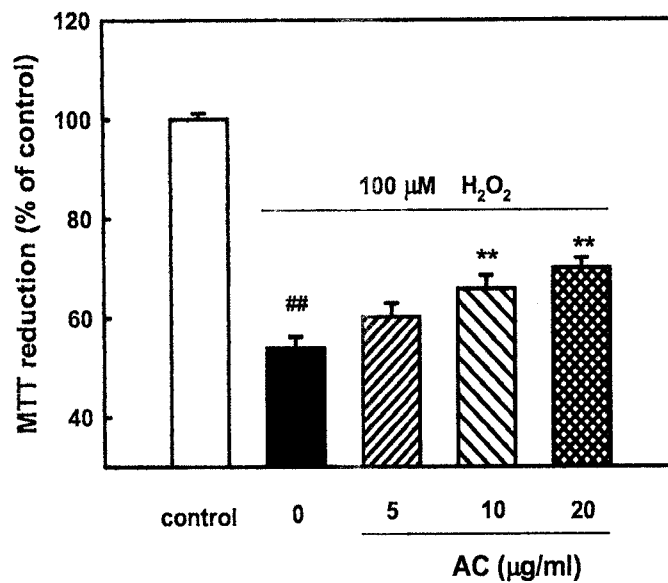


Fig. 1. Inhibitory effect of Aralia Cordata on H<sub>2</sub>O<sub>2</sub>-induced neuronal cell death in cultured cortical neurons. Neuronal death was measured by the MTT assay. ## p<0.01 compared to control. \*\* p<0.01 compared to 100 μM H<sub>2</sub>O<sub>2</sub>.

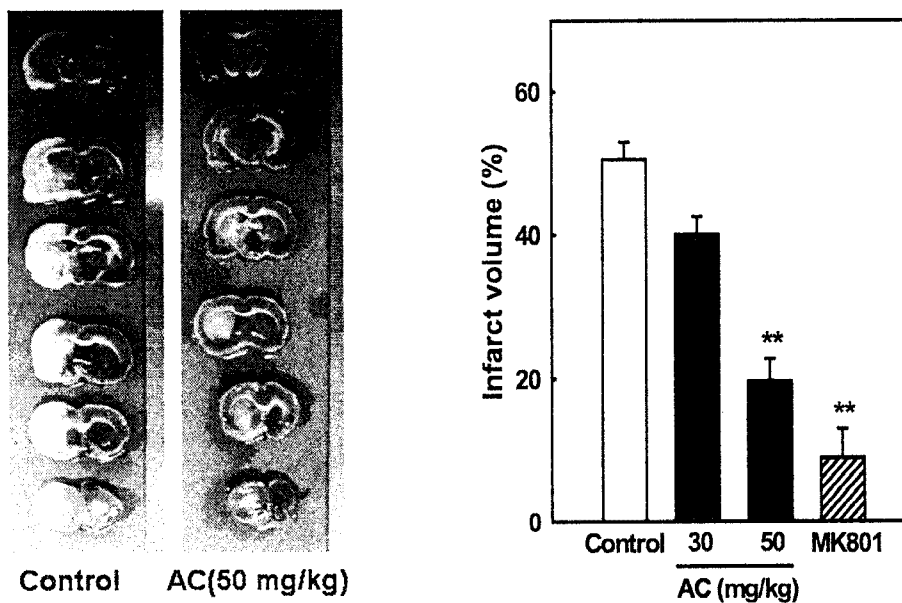


Fig. 2. Inhibitory effect of Aralia Cordata on MCAo induced brain infarct in rats. Representative TTC stained coronal brain sections are shown. \*\* p<0.01 compared to control.