

쥐눈이콩(*Rhynchosia nulubilis*)의 SN4741 도파민세포에 대한 보호효과

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Protective Effect of *Rhynchosia doloubilis* Extracts on PD-related neurotoxicants-induced neuronal death in SN4741 cells

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Objectives

We report here the effects of *Rhynchosia nulubilis* extracts on PD-related toxins-induced dopaminergic neuronal cell death.

Materials and Methods

Materials & extraction

Seed of *Rhynchosia nulubilis* was germinated to 15 mm-length root at 20°C after presoaking in 0.05% low molecular weight soluble chitosan(5 kDa) and glutamic acid solution, respectively, for 4hr. The powder sample was extracted with ethanol at room temperature for 24h. The extracts were filtered, followed by rotary evaporator under 40°C.

Cell culture

Dopaminergic cell line, SN4741 was maintained DMEM(Gibco-BRL) supplemented with 10% heat-inactivated fetal bovine serum(FBS),1% glucose, 2mM L-glutamine, 10,000 units/ml, penicillin 10 µg/ml streptomycin in a humidified 5% CO2 incubator.

Measurement

SN4741 cells were treated with dieldrin, H₂O₂, rotenone, or paraquat in the presence or absence of *Rhynchosia nulubilis* extracts (10µg/ml). Subsequently, the measurement of formazan formation from MTT was assayed as index of cell viability.

Result

Pretreated with germinated *Rhynchosia nulubilis* extract did not show the protective effect against dieldrin or paraquat. On the other hand, H₂O₂ (100µg/ml)-induced cell death was partially blocked by non-germinated *Rhynchosia nulubilis* extract. In addition, rotenone-induced cell death was significantly inhibited by *Rhynchosia nulubilis* extract.

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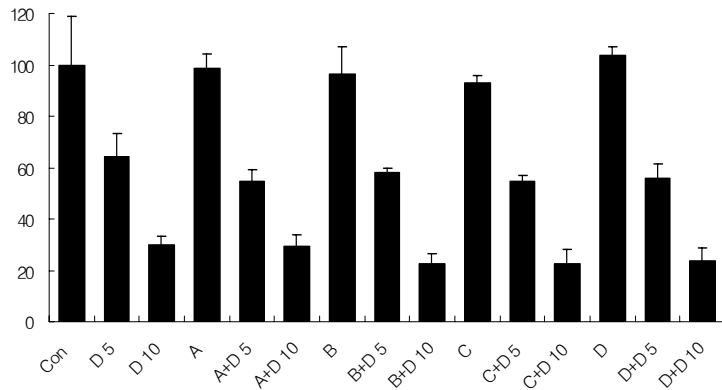


Fig. 1. Protective effect of *Rhynchosia nulubilis* extracts on the dieldrin-induced cell death in SN4741 cells.(A;Non-germination, B;water-soaking, C; Glutamic acid soaking, D; Chitosan soaking)

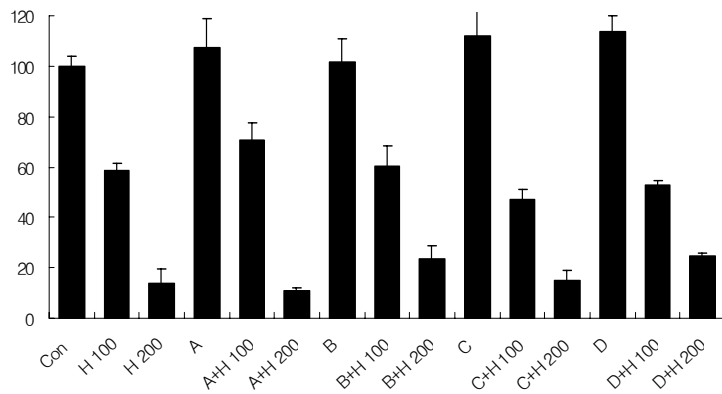


Fig. 2. Protective effect of *Rhynchosia nulubilis* extracts on the H₂O₂-induced cell death in SN4741 cells.(A;Non-germination, B;water-soaking, C; Glutamic acid soaking, D; Chitosan soaking)

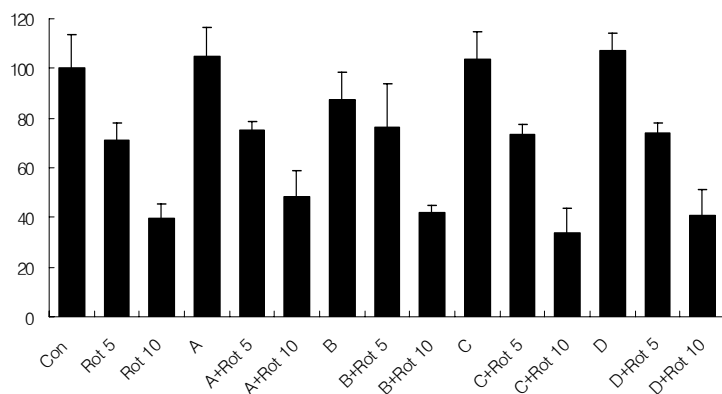


Fig. 3. Protective effect of *Rhynchosia nulubilis* extracts on the rotenone-induced cell death in SN4741 cells.(A;Non-germination, B;water-soaking, C; Glutamic acid soaking, D; Chitosan soaking)