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Protective Effect of Ginsenoside Rb1 and Rg1 against β-amyloid(25-35)-induced neurotoxicity on B103 cells

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Ginseng saponins have been known that they have positive effects on learning and memory processes and some ginsenosides were also reported to have neuroprotective activity *in vitro*. We tested whether or not Rb1 and Rg1, main components of ginseng saponins, protect neurotoxic effect of β-amyloid(25-35)(A β_{25-35}) on cultured B103 cells which is strongly related with the pathogenesis of Alzheimer's dementia. Treatment of Rb1 and Rg1 at various concentration(10nM, 50nM and 1 μM, respectively) in normal B103 cell line did not show any dose-dependent neurotoxic effect except Rb1 at concentration of 1 μM(17%). Rg1(1 μM) significantly blocked the neurotoxic effect of A β_{25-35}(50 μM) on cell viability(MTT) assays($P<0.05$). Rb1 at concentration of 1 μM also had some neuroprotective effect, but not as effective as Rg1. These neuroprotective effects are comparable to the one of estrogen(1.8nM). These results suggest the possibility that Rg1 and Rb1 may be available in treating Alzheimer's dementia.