

# Neuroprotective and Neurotrophic Effects of Isorosmanol

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The neurotoxicity induced by beta-amyloid (A $\beta$ ), which is one of the major causes of Alzheimer's disease (AD), leads to synaptic loss and subsequent neuronal death. Therefore, modulation of A $\beta$ -induced neurotoxicity, as well as regeneration of damaged synapses could be important therapeutic approaches to control AD. In this study, we found that isorosmanol, an abietane-type diterpene, protected PC12 cells against A $\beta$ -induced toxicity. Furthermore, isorosmanol promoted the generation of neurites. The neurotrophic effect of isorosmanol was enhanced by co-treatment with nerve growth factor (NGF). In addition, the neurite outgrowth induced by isorosmanol was accompanied by F-actin redistribution and increased expression of neurofilaments. Taken together, these results suggest that isorosmanol possesses both neuroprotective and neurotrophic effects, that might be beneficial for controlling AD.

*Key words:* Isorosmanol, Neurotrophic Effect, Beta-amyloid