

Conserved dopamine neurotrophic factor

Conserved dopamine [neurotrophic factor](#) (CDNF), a member of the mammalian [mesencephalic astrocyte derived neurotrophic factor](#) family of conserved secreted factors, has been reported to protect and rescue [dopaminergic neurons](#) in vivo. PC12 pheochromocytoma cells are widely used as a cell model for Parkinson's disease (PD) for experimental studies. In the present study, PC12 cells were induced using 6-hydroxydopamine (6-OHDA) to mimic PD, which was used to investigate the protective and reversal effects of CDFN against PD in vitro. Cell growth was assessed using an MTT assay, the rate of cell apoptosis was detected using flow cytometry and the apoptotic morphology of cells was observed using terminal deoxynucleotidyl transferase-mediated deoxyuridine triphosphate nick end labeling (TUNEL) staining. Pre-treatment of PC12 cells with CDFN (50, 100 and 200 nM) prior to exposure to 100 μ M 6-OHDA for 24 h, resulted in a significant increase in cell viability compared with that of 6-OHDA only-treated cells, with cell survival rates of 46.6, 54.7 and 69.6%, respectively. In addition, PC12 cells were treated with CDFN (50, 100 and 200 nM) following 6-OHDA administration, which resulted in cell survival rates of 47.7, 57.6 and 57.5%, respectively. Flow cytometric and TUNEL staining analyses revealed that CDFN exhibited significant dose-dependent protective and reversal effects on the apoptotic rate of PC12 cells following 6-OHDA treatment. In conclusion, the results of the present study showed that CDFN exhibited neuroprotective and reversal effects on the 6-OHDA-induced apoptosis of PC12 cells in a dose-dependent manner ¹⁾.

¹⁾

Mei J, Niu C. Protective and reversal effects of conserved dopamine neurotrophic factor on PC12 cells following 6-hydroxydopamine administration. *Mol Med Rep*. 2015 Jul;12(1):297-302. doi: 10.3892/mmr.2015.3388. Epub 2015 Feb 24. PubMed PMID: 25738732.

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