

▶ GDNF (78-211): sc-4312 WB

BACKGROUND

Glial cell line-derived neurotrophic factor (GDNF) has been identified as a potent neurotrophic factor that enhances survival of midbrain dopaminergic neurons. GDNF is a glycosylated, disulfide-bonded homodimer and is a distantly related member of the TGF β superfamily of growth regulatory ligands. GDNF contains the seven conserved cysteine residues in the same relative spacing characteristic of all members of the TGF β super-family. In embryonic midbrain cultures, GDNF promotes the survival and morphological differentiation of dopaminergic neurons and increases their high-affinity dopamine uptake. On the basis of these findings, it has been suggested that GDNF may have utility in the treatment of Parkinson's disease, which is marked by progressive degeneration of midbrain dopaminergic neurons.

REFERENCES

1. Schubert, D., Heinemann, S., Carlisle, W., Tarikas, H., Kimes, B., Patrick, J., Steinbach, J.H., Culp, W., and Brandt, B.L. 1974. Clonal cell lines from the rat central nervous system. *Nature* 249: 224-227.
2. Derynck, R., Jarrett, J.A., Chen, E.Y., Eaton, D.H., Bell, J.R., Assoian, R.K., Roberts, A.B., Sporn, M.B., and Goeddel, D.V. 1985. Human transforming growth factor- β cDNA sequence and expression in tumor cell lines. *Nature* 316: 701-705.
3. ten Dijke, P., Hansen, P., Iwata, K.K., Pieler, C., and Foulkes, J.G. 1988. Identification of a new member of the transforming growth factor type b gene family. *Proc. Natl. Acad. Sci. USA* 85: 4715-4719.
4. Miller, D.A., Pelton, R.W., Derynck, R., and Moses, H.L. 1990. Transforming growth factor β : a family of growth regulatory peptides. *Ann. N.Y. Acad. Sci.* 593: 208-217.
5. Lin, L.H., Doherty, D.H., Lile, J.D., Bektesh, S., and Collins, F. 1993. GDNF: a glial cell line-derived neurotrophic factor for midbrain dopaminergic neurons. *Science* 260: 1130-1132.
6. Pozas, E., and Ibanez, C.F. 2005. GDNF and GFR α 1 promote differentiation and tangential migration of cortical GABAergic neurons. *Neuron* 45: 701-713.
7. Schaller, B., Andres, R.H., Huber, A.W., Meyer, M., Perez-Bouza, A., Ducray, A.D., Seiler, R.W., Widmer, H.R. 2005. Effect of GDNF on differentiation of cultured ventral mesencephalic dopaminergic and non-dopaminergic calretinin-expressing neurons. *Brain Res* 1036: 163-172.
8. Amoresano, A., Incoronato, M., Monti, G., Pucci, P., de Franciscis, V., Cerchia, L. 2005. Direct interactions among Ret, GDNF and GFR α 1 molecules reveal new insights into the assembly of a functional three-protein complex. *Cell Signal* 17: 717-727.

SOURCE

GDNF (78-211) is expressed in *E. coli* as a 33 kDa tagged fusion protein corresponding to amino acids 78-211 of GDNF of human origin.

PRODUCT

GDNF (78-211) is purified from bacterial lysates (>98%) by column chromatography; supplied as 10 μ g in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

GDNF (78-211) is suitable as a Western blotting control for sc-328 and sc-9010.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

For research use only, not for use in diagnostic procedures.