



# GDNF (hBA-134): sc-4865

## 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 $\beta$  superfamily of growth regulatory ligands. GDNF contains the seven conserved cysteine residues in the same relative spacing characteristic of all members of the TGF $\beta$  superfamily. 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.
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3. ten Dijke, P., Hansen, P., Iwata, K.K., Pieler, C. and Foulkes, J.G. 1988. Identification of another member of the transforming growth factor type  $\beta$  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  $\beta$ : 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.

## SOURCE

GDNF (hBA-134) is produced in *E. coli* as 30.4 kDa biologically active protein corresponding to 134 amino acids of GDNF of human origin.

## PRODUCT

GDNF (hBA-134) is purified from bacterial lysates (>98%); supplied as 10  $\mu$ g purified protein.

## BIOLOGICAL ACTIVITY

GDNF (hBA-134) is biologically active as determined by the dose-dependent dopamine uptake by rat mesencephalic cultures.

ED<sub>50</sub>: 5-10 ng/ml.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryo-preserved (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

## SELECT PRODUCT CITATIONS

1. Mendes-Oliveira, J., Campos, F.L., Ferreira, S.A., Tomé, D., Fonseca, C.P. and Baltazar, G. 2023. Endogenous GDNF is unable to halt dopaminergic injury triggered by microglial activation. *Cells* 13: 74.

## STORAGE

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

## RESEARCH USE

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