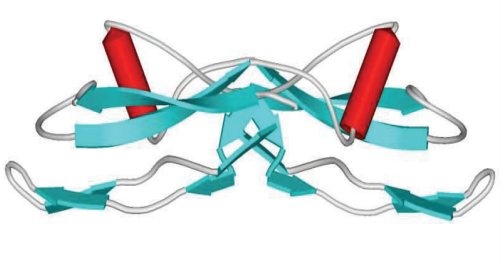
Glial Cell Line-Derived Neurotrophic Factor

Human, Recombinant (rHuGDNF)

Expressed in *E. coli*
Cat. No. CRP0845
Lot. No. (See product label)



PDB **rendering based on 1ivo.**

PRODUCT INFORMATION

Description: Glial cell-derived neurotrophic factor (GDNF) is a neurotrophic factor that is a member of the TGF-β superfamily. GDNF is founding member of the GDNF family of ligands, which to date include GDNF, neurturin (NTN), persephin (PSP) and artemin (ART). GDNF is a glycosylated disulfide-linked homodimeric protein of approximately 15 kDa. Mature rat and human GDNF share 93% sequence homology, with strong species cross-reactivity. GDNF promotes survival of various neuronal cells in central and peripheral nervous systems and different stages of development, including motoneurons, midbrain dopaminergic neurons, Purkinje cells and sympathetic neurons. Cells known to express GDNF include Sertoli cells, type 1 astrocytes, Schwann cells, neurons, pinealocytes and skeletal muscle cells. In addition,exogenously applied GDNF has been shown to rescue damaged facial motor neurons *in vivo*. Glial cell-derived neurotrophic factor is expressed in *E. coli*.

Background: The recombinant form of this protein was shown to promote the survival and differentiation of dopaminergic neurons in culture, and was able to prevent apoptosis of motor neurons induced by axotomy. The encoded protein is processed to a mature secreted form that exists as a homodimer. The mature form of the protein is a ligand for the product of the RET (rearranged during transfection) protooncogene.

M. W. : 15,199 Da

Recombinant: Expressed in *E. coli*

Purity: >95% as determined by SDS-PAGE.

Specific Activity: The biological activity of GDNF is measured by its ability to support survival and stimulate neurite outgrowth of cultured embryonic chick dorsal root ganglia. Activity can also be measured by its ability to bind recombinant human GFRα1/Fc.

Storage buffer: Liquid. (non-refolded)

Storage: Store at -80°C. Best use within three months from the date of receipt of this protein. Aliquot to avoid repeated freeze-thaw cycles.

FOR RESEARCH USE ONLY

GENE INFORMATION

Gene Name: GDNF

Synonyms: ATF1; ATF2; HFB1-GDNF; ATF; hGDNF; Astrocyte- derived trophic factor; Glial cell line-derived neurotrophic factor precursor; astrocyte-derived trophic factor; glial cell derived neurotrophic factor; glial cell line derived neurotrophic factor; glial derived neurotrophic factor

mRNA Refseq: NM_000514

Protein Refseq: NP_000505

MIM: 600837

GeneID: 2668

Uniprot ID: P39905

Chromosome Location: 5p13.1-p12

Function: growth factor activity, protein homodimerization activity

Process: anti-apoptosis, biological process, negative regulation of neuron apoptosis, nervous system development, neural development, signal transduction, regulation of dopamine uptake

REFERENCES

1. Tomac A, Lindqvist E, Lin LF, et al. Protection and repair of the nigrostriatal dopaminergic system by GDNF in vivo. *Nature*.1995;373 (6512): 335–339.

2. Oppenheim RW, Houenou LJ, Johnson JE, et al. Developing motor neurons rescued from programmed and axotomy-induced cell death by GDNF. *Nature*.1995; 373 (6512): 344–346.

3. Lin LF, Doherty DH, Lile JD, et al. GDNF: a glial cell line-derived neurotrophic factor for midbrain dopaminergic neurons. *Science*; 1993; 260 (5111): 1130–1132.

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