

Recombinant Human GDNF

Catalog # FL116

Product Specifications

Appearance	Sterile filtered White lyophilized (freeze-dried) powder.
Purity	> 97% by SDS-PAGE or HPLC.
Endotoxin	< 0.1 EU/μg of rHuGDNF protein as determined by LAL method.
Expression System	Expressed in E. coli.
Species	Human
Tag	Tag free.
Activity	Fully biologically active when compared to standard. The ED50 as determined by a cell proliferation assay using rat C6 cells is less than 0.1 ng/ml, corresponding to a specific activity of $\geq 5.0 \times 10^7$ IU/mg.
Formulation	Lyophilized from a 0.2 μm filtered concentrated solution in 20 mM PB, with 500 mM NaCl, 0.05% (v/v) Tween-20, pH 7.4.
Reconstitution	Before use this product, please read the direction below carefully. This vial must be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in a sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/ml. Stock solutions should be apportioned into working aliquots and stored at $\leq -20^\circ\text{C}$. Further dilutions should be made in appropriate buffered solutions.
Accession #	P39905 Ser77-Ile211
Amino acid sequence	SPDKQMAVLRPRRERNRQAAAANPENSRGKGRGRRGQRGKNRGCVLTAIHLNVTDLGLGYETKEELIFRYCSGSCDAAETTYDKILKNLSRNRRLVSDKVGQACCRPIAFDDDLFLDDNLVYHILRKHS AKRCGCI
Molecular weight	Approximately 30.1 kDa, a homodimeric protein consisting of two 134 amino acid non-glycosylated polypeptide chains.
Synonyms	ATF, ATF-1
Stability & Storage	Shipped on wet ice. For long term storage, the product should be stored $\leq -20^\circ\text{C}$. Please avoid repeated freeze-thaw cycles after reconstitution. 36 months from date of receipt, -20 to -70°C as supplied. 1 month, 2 to 8°C under sterile conditions after reconstitution. 3 months, -20 to -70°C under sterile conditions after reconstitution.
Precautions	Recombinant Human GDNF is for research use only and not for use in diagnostic or therapeutic procedures.

Background

GDNF is a disulfide-linked, homodimeric neurotrophic factor structurally related to Artemin, Neurturin and Persephin. These proteins belong to the cysteine-knot superfamily of growth factors that assume stable dimeric protein structures. GDNF signals through a multicomponent receptor system, composed of a RET and one of the four GFR α ($\alpha 1$ - $\alpha 4$) receptors. GDNF specifically promotes dopamine uptake and survival, and morphological differentiation of midbrain neurons. Using a Parkinson's disease mouse model, GDNF has been shown to improve conditions such as bradykinesia, rigidity, and postural instability. The functional human GDNF ligand is a disulfide-linked homodimer consisting of two 15kDa polypeptide chains called monomers. Each monomer contains seven conserved cysteine residues, including Cys-101, which is used for inter-chain disulfide bridging, and others that are involved in the intramolecular ring formation known as the cysteine-knot configuration. Cells known to express GDNF include Sertoli cells, type 1 astrocytes, Schwann cells, neurons, pinacocytes and skeletal muscle cells. Rat and human mature GDNF shows 93% sequence identity and have species cross-reactivity. The calculated molecular weight of Recombinant Human GDNF is 30.1kDa.

