

DESCRIPTION

Source	<i>Spodoptera frugiperda</i> , Sf 21 (baculovirus)-derived rat GDNF protein Ser78-Ile211 Accession # Q07731
N-terminal Sequence Analysis	Ser78
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	15 kDa (monomer)

SPECIFICATIONS

Activity	Measured in a cell proliferation assay using SH-SY5Y human neuroblastoma cells. The ED ₅₀ for this effect is 2-12 ng/mL in the presence of Recombinant Rat GFRα-1/GDNF Rα-1 Fc Chimera (Catalog # 560-GR). Measured by its binding ability in a functional ELISA. Immobilized Recombinant Rat GFRα-1/GDNF Rα-1 Fc Chimera (Catalog # 560-GR) at 1 µg/mL binds Recombinant Rat GDNF with an apparent K _d <4 nM.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 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.

DATA

<p>Bioactivity</p> <p>Recombinant Rat GDNF (Catalog # 512-GF) promotes the survival of chick embryonic dorsal root ganglia neurons. The ED₅₀ for this effect is 1-3 ng/mL.</p>	<p>SDS-PAGE</p> <p>1 µg/lane of Recombinant Rat GDNF was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing major bands at 19 kDa and 33 kDa, respectively.</p>
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BACKGROUND

Glial Cell Line-derived Neurotrophic Factor (GDNF) is a discovered neurotrophic factor that has been shown to promote the survival of various neuronal subpopulations in both the central as well as the peripheral nervous systems at different stages of their development. Neuronal subpopulations that have been shown to be affected by GDNF include motoneurons, midbrain dopaminergic neurons, Purkinje cells and sympathetic neurons.

Native GDNF, a disulfide-linked homodimeric glycoprotein, is a novel member of the TGF-β superfamily. Rat GDNF cDNA encodes a 211 amino acid residue prepropeptide that is processed to yield a dimeric protein composed of two 134 amino acid residue subunits. The GDNF sequence contains two potential glycosylation sites and insect cell-expressed recombinant rat GDNF proteins are glycosylated. Mature rat and human GDNF exhibit approximately 93% amino acid sequence identity and show considerable species cross-reactivity. Cells known to express GDNF include Sertoli cells, type 1 astrocytes, Schwann cells, neurons, pinealocytes and skeletal muscle cells.