

DESCRIPTION

Source *E. coli*-derived human GDNF protein
Accession # P39905.1

Predicted Molecular Mass 30.4 kDa (dimer), 15 kDa (monomer)

SPECIFICATIONS

SDS-PAGE Dimeric GDNF protein only

Activity No significant difference between EC₅₀ of reference and test lots

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Mass Spectrometry Single species with expected mass

Mycoplasma Negative when tested in both ribosomal RNA hybridization and luminescence assays

Formulation Lyophilized from acetonitrile/TFA See Certificate of Analysis for details.

PREPARATION AND STORAGE

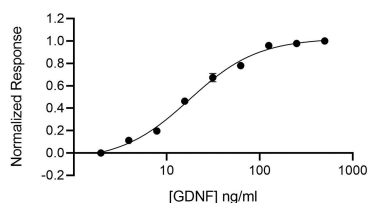
Reconstitution Resuspend in water at >100 µg/ml, prepare single use aliquots, add carrier protein if desired.

Shipping The product is shipped lyophilized at ambient temperature, on ice blocks or dry ice. Shipping at ambient temperature does not affect the bioactivity or stability of the protein. Upon receipt, store immediately at the conditions stated below.

Stability & Storage BulkLotPrefix assignment required for Storage Info

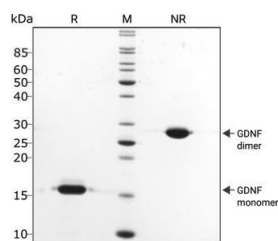
DATA

Bioactivity



Recombinant Human GDNF, Animal Free Protein Bioactivity
GDNF activity is determined using an SH-SY5Y cell proliferation assay. Cells were incubated in duplicates with different concentrations of GDNF in the presence of retinoic acid and recombinant GFR α1 for 3 days before viable cell measurement using an MTS assay. Cell proliferation is measured and normalized. EC₅₀ = 17.5 ng/ml (0.58 nM).

SDS-PAGE



Recombinant Human GDNF, Animal Free Protein SDS-PAGE
GDNF migrates as a single band at 30 kDa in non-reducing (NR) conditions and 15 kDa upon reduction (R). No contaminating protein bands are visible. Purified recombinant protein (3 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptoethanol, R) and non-reduced (NR) conditions and stained with Coomassie Brilliant Blue R250.

BACKGROUND

Glial Cell Line-derived Neurotrophic Factor (GDNF) is a 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. Human GDNF cDNA encodes a 211 amino acid residue prepropeptide that is processed to yield a dimeric protein. Mature human GDNF was predicted to contain two 134 amino acid residue subunits. NS0 expressed mature human GDNF lacks 31 residues from the amino-terminus of the predicted sequence. This glycosylated recombinant mature human GDNF still contains the seven conserved Cys residues found in all members of the TGF-β superfamily and is biologically active. 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.

PRODUCT SPECIFIC NOTICES

The above product was manufactured, tested and released by R&D System's contract manufacturer, Qkine Ltd, at 1 Murdoch House, Cambridge, UK, CB5 8HW. The product is for research use only and not for the diagnostic or therapeutic use.