Recombinant Human Neurturin (Histidine-tagged)

Catalog Number: 387-NE

DESCRIPTION

Source *E. coli*-derived

ATVID	10-His tag	SSNG	Human Neurturin (Ala96 - Val197) Accession # Q99748

N-terminus C-terminus

N-terminal Sequence Analysis	Ala
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	14 kDa (monomer)

SPECIFICATIONS

Activity	Measured by its ability to support the survival and stimulate neurite outgrowth of dissociated chick embryonic dorsal root ganglia (DRG) neurons. Davies, A.M. (1989) in *Neurotrophic Factor Bioassay Using Dissociated Neurons*, Nerve Growth Factor. Rush, R.A. (eds): John Willey and Sons, Ltd. 95. The ED_{50} for this effect is 2-6 ng/mL. Measured by its binding ability in a functional ELISA. Immobilized rhGFRα2/Fc Chimera at 1 µg/mL (100 µL/well) can bind hNeurturin with a linear range of 0.5-40 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 4 mM HCl 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.** ● 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.

BACKGROUND

Neurturin (NTN) is a member of the GDNF family of ligands which also includes glial cell-derived neurotrophic factor (GDNF), persephin, and artemin. GDNF family proteins are distant members of the TGF-β superfamily and contain a conserved seven cysteine motif found in the entire family. Human NTN encodes a 197 amino acid (aa) preproprotein with a 19 aa residue putative signal peptide and a 76 aa pro region. Proteolytic cleavage of the pro-protein occurs at an RXXR consensus sequence. The native protein is a disulfide-linked homodimer with a calculated monomeric mass of about 12.5 kDa. The amino acid sequence of human NTN shares 91% identity to mouse NTN. NTN also shares about 42% similarity with GDNF. The bioactivities of all GDNF family ligands are mediated through a receptor complex composed of a high affinity ligand binding component (GFRα1 - GFRα4) and a common signaling component, cRET (receptor tyrosine kinase). NTN prefers to bind GFRα2 but can also bind GFRα1. NTN can promote the survival of a variety of neurons including sympathetic, sensory, and central nervous system neurons. The wide expression of NTN in both neuronal and non-neuronal tissues suggests that NTN may regulate the development and maintenance of the central and peripheral nervous systems and other systems.

References:

1. Kotzbauer, P. *et al.* (1996) Nature **384**:467.
2. Baloh, R.H. *et al.* (1997) Neuron **18**:793.
3. Baloh, R.H. *et al.* (1998) Neuron **21**:1291.

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