Recombinant Human Neurturin

Catalog Number: 1297-NE/CF

DESCRIPTION

Source	*E. coli*-derived Ala96-Val197, with an N-terminal Met Accession # Q99748
N-terminal Sequence Analysis	Met
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	11.8 kDa (monomer)

SPECIFICATIONS

Activity	Measured in a cell proliferation assay using SH-SY5Y human neuroblastoma cells. The ED_{50} for this effect is typically 20-80 ng/mL in the presence of Recombinant Human GFRα-2/GDNF Rα-2 Fc Chimera (Catalog # 613-FR). Measured by its binding ability in a functional ELISA. Immobilized Recombinant Human GFRα-2/GDNF Rα-2 Fc Chimera (Catalog # 613-FR) at 1 µg/mL can bind Recombinant Human Neurturin with an apparent K_D <3.0 nM.
Endotoxin Level	<0.01 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 4 mM HCl.
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 is a member of the GDNF family of ligands, which include glial cell-derived neurotrophic factor (GDNF), Neurturin, Persephin, and Artemin. GDNF family proteins are distant members of the Transforming Growth Factor β (TGF-β) superfamily (1-4). Similarly to other TGF-β family proteins, Neurturin is synthesized as a precursor protein that is cleaved at the dibasic cleavage site (RXXR) to release the carboxy-terminal domain. The carboxy-terminal domain of Neurturin contains the characteristic seven conserved cysteine residues necessary for the formation of the cysteine-knot and the single interchain disulfide bond. Biologically active human Neurturin is a disulfide-linked homodimer of the carboxy-terminal 102 amino acid residues. Mature human Neurturin shares approximately 92% amino acid sequence identity with mouse Neurturin. Mature Neurturin also shares about 40% similarities with the other three members of the GDNF family ligands (2-5). Unlike other members of TGF-β family, bioactivities of all GDNF family ligands are mediated through a unique multicomponent receptor complex composed of high affinity ligand binding component (GFRα-1-GFRα-4) and a common signaling component (cRET receptor tyrosine kinase). Each member of the GDNF family ligands has its preferred binding protein. Neurturin preferentially binds to GFRα-2 but can also bind GFRα-1 at higher concentrations (5-8). Neurturin had been shown to promote the survival of a variety of neurons including sympathetic, sensory, and central nervous system neurons. Neurturin is expressed in both neuronal and non-neuronal tissues. It may play a role in regulating the development and maintenance of the central and peripheral nervous systems and as well as non-neuronal systems (9).

References:

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