Recombinant Mouse Neurturin

Catalog Number: 477-MN

DESCRIPTION

Source	*E. coli*-derived mouse Neurturin protein Pro96-Val195 Accession # P97463.1
N-terminal Sequence Analysis	Pro96
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	11.7 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 2-10 ng/mL. Also measured in a cell proliferation assay using SH-SY5Y human neuroblastoma cells. Measured by its binding ability in a functional ELISA. Immobilized Recombinant Mouse GFRα-2/GDNF Rα-2 Fc Chimera (Catalog # 429-FR) at 1 µg/mL can bind Recombinant Mouse Neurturin with an apparent K_D <3.0 nM.
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 PBS.
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). Similar 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 Neurturin is a disulfide-linked homodimer of the carboxy-terminal 100 amino acid residues. Mature mouse Neurturin shares 91% amino acid sequence similarity with human 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 concentration (5-8). Neurturin has 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 as well as non-neuronal systems (9).

References:

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