### Recombinant Human Neurturin

**Catalog Number:** 1297-NE

#### 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 GFRα2/GDNF-Rα2 Fc Chimera (Catalog # 613-FR).

Measured by its binding ability in a functional ELISA.

Immobilized Recombinant Human GFRα2/GDNF-Rα2 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 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 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 as well as non-neuronal systems (9).

#### References: