Recombinant Rat Neuropilin-2 Fc Chimera

Catalog Number: 567-N2

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived

Rat Neuropilin-2 Gln23-Asp857 (Val809-Asp825 del) Accession # O35276	IEGRDMD	Human IgG_1 (Pro100-Lys330)	6-His tag

N-terminus C-terminus

N-terminal Sequence Analysis No results obtained: Gln23 predicted

Structure / Form Disulfide-linked homodimer

Predicted Molecular Mass 120 kDa (monomer)

SPECIFICATIONS

SDS-PAGE 130-150 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
Immobilized Recombinant Rat Neuropilin-2 Fc Chimera at 5 µg/mL (100 µL/well) can bind recombinant human $VEGF_{165}$ in the presence of 2 µg/mL of heparin with an apparent Kd <1nM.

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

Purity >90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 200 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

Neuropilin-2 (Nrp2) is a transmembrane glycoprotein that plays an important role in neuronal axon guidance and development of the vascular system (1). Neuropilin-2 is differentially expressed in the developing nervous system (2). It binds to Semaphorins 3B, 3C, and 3F, leading to neuronal growth cone collapse (2-4). This action is important for repulsive axon guidance and accurate axon projection to target fields (4-7). Neuropilin-2 interacts with a range of proteins that regulate cell growth and morphology. It associates with TGF-beta RI and enhances the ability of TGF-beta to induce epithelial mesenchymal transition during tumorigenesis (8). It associates with Integrin α6β1 and promotes α6β1 mediated adhesion to Laminin (9). Neuropilin-2 additionally binds the heparin-binding PlGF-2, HGF, $VEGF_{145}$, and $VEGF_{165}$ (10, 11) and associates with VEGF R1, VEGF R2, and VEGF R3 (12, 13). The presence of Neuropilin-2 on vascular endothelial cells potentiates the angiogenic signaling effects of HGF and $VEGF_{165}$ (11). Semaphorin 3F, however, can block the contribution of Neuropilin-2 to angiogenesis (13). In the vascular system, Neuropilin-2 is predominantly expressed on lymphatic vessel and capillary endothelial cells where it cooperates with VEGF R3 to induce lymphatic sprouting (14, 15). Neuropilin-2 is lost from sympathetic nerve fibers in rheumatoid arthritis (RA) synovium, while a soluble form is elevated in RA synovial fluid (16). Neuropilin-2 is expressed as an approximately 120 kDa molecule that associates into homo-oligomers or hetero-oligomers with Neuropilin-1 (3, 4). It can be polysialylated during dendritic cell maturation to reach sizes as large as 200 kDa (17). Mature rat Neuropilin-2 consists of an 836 amino acid (aa) extracellular domain (ECD) with two CUB domains, two complement factor 5/8-like domains, one MAM domain, and a Ser-Thr rich region, followed by a 25 aa transmembrane segment and a 42 aa cytoplasmic domain (18). Within the ECD, rat Neuropilin-2 shares 93% and 97% aa sequence identity with human and mouse Neuropilin-2, respectively.

References:

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