Recombinant Human GFRα-1/GDNF Rα-1 Fc Chimera

Catalog Number: 11419-GR

DESCRIPTION

Source

Human embryonic kidney cell, HEK293-derived human GFR alpha-1/GDNF R alpha-1 protein

Human GFR α-1 (Ala19-Ser429) Accession # P56159.2	GGIEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Ala19
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	73 kDa

SPECIFICATIONS

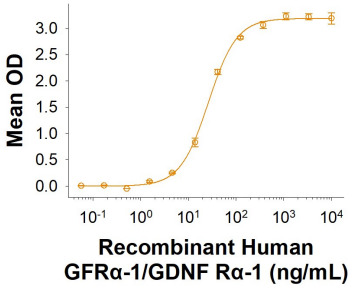
SDS-PAGE	77-90 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Recombinant Human GFRα-1/GDNF Rα-1 Fc Chimera (Catalog # 11419-GR) binds Recombinant Human GDNF Protein (Catalog # 212-GD) with an ED_{50} of 9.00-90.0 ng/mL.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in 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.

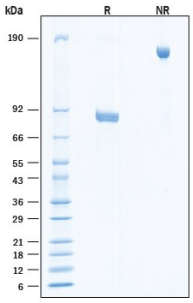
DATA

Binding Activity



Recombinant Human GFRα-1/GDNF Rα-1 Fc Chimera Protein Binding Activity. Recombinant Human GFRα-1 /GDNF Rα-1 Fc Chimera Protein (Catalog # 11419-GR) binds Recombinant Human GDNF Protein (Catalog # 212-GD) with an ED_{50} of 9.00-90.0 ng/mL.

SDS-PAGE



Recombinant Human GFRα-1/GDNF Rα-1 Fc Chimera Protein SDS-PAGE. 2 µg/lane of Recombinant Human GFRα-1/GDNF Rα-1 Fc Chimera Protein (Catalog # 11419-GR) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 77-90 kDa and 150-180 kDa, respectively.

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BACKGROUND

Glial cell line-derived growth factor (GDNF), neurturin (NTN), artemin and persephin are distant members of the TGF-β superfamily. They function as neurotrophic factors for a variety of neuronal populations in the central and peripheral nervous systems. The bioactivities of GDNF and NTN are mediated through a receptor complex composed of the non ligand-binding signaling subunit (c-Ret receptor tyrosine kinase) and either of two ligand binding subunits [GDNF receptor α-1 (GFRα-1) or GFRα-2]. GFRα-1 and -2 are members of a family of at least four cysteine-rich glycosyl-phosphatidylinositol (GPI)-linked cell surface proteins that share conserved placements of many of their cysteine residues. Binding of GDNF to membrane-associated GFRα-1 or GFRα-2 initiates the association with and activation of the Ret tyrosine kinase. Soluble GFRαs released enzymatically from the cell surface-associated protein with phosphatidylinositol phospholipase C, as well as recombinantly produced soluble GFRα-1, can also bind with high-affinity to GDNF and trigger the activation of Ret tyrosine kinase. Human GFRα-1 cDNA encodes a 465 amino acid (aa) residue protein with an N-terminal 24 aa residue hydrophobic signal peptide. Like other GPI-linked proteins, human GFRα-1 has a C-terminal hydrophobic region which is preceded by a three aa residue (ASS) GPI-binding site. Human GFRα-1 shares 93% aa identity with rat GFRα-1. The expression of the various GFRαs are differentially regulated in the central and peripheral nervous system, suggesting complementary roles for the GFRαs in mediating the activities of the GDNF family of neurotrophic factors.

References:

1. Thompson, J. *et al.* (1998) Mol. Cell Neurosci. **11**:117.
2. Trupp, M. *et al.* (1998) Mol. Cell Neurosci. **11**:47.
3. Baloh, R.H. *et al.* (1998) Proc. Natl. Acad. Sci. USA **95**:5801.

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