

**DESCRIPTION**

<b>Source</b>	Mouse myeloma cell line, NS0-derived			
	Human GFR $\alpha$ -2 (Ser22-Ser441) Accession # O00451	DIEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)	6-His tag
	N-terminus		C-terminus	

**N-terminal Sequence** Ser22

**Analysis**

**Predicted Molecular Mass** 74 kDa (monomer)

**Mass**

**SPECIFICATIONS**

<b>SDS-PAGE</b>	100 kDa, reducing conditions
<b>Activity</b>	Measured by its binding ability in a functional ELISA. Immobilized Recombinant Human Neurturin (Catalog # 1297-NE) at 1 $\mu$ g/mL can bind Recombinant Human GFR $\alpha$ -2/GDNF R $\alpha$ -2 Fc Chimera with an apparent $K_D$ <1 nM.
<b>Endotoxin Level</b>	<1.0 EU per 1 $\mu$ g of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 100 $\mu$ g/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Glial cell line-derived growth factor (GDNF), neurturin (NTN), persephin (PSP) and artemin, distant members of the TGF- $\beta$  superfamily, are 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  $\alpha$ -1 [GFR $\alpha$ -1], also known as Trn R1 or GFR $\alpha$ -2, also known as Trn R2). GFR $\alpha$ -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 or NTN to membrane-associated GFR $\alpha$ -1 or GFR $\alpha$ -2 initiates the association with and activation of the Ret tyrosine kinase.

Human GFR $\alpha$ -2 cDNA encodes a 464 amino acid (aa) residue protein with a putative N-terminal 21 aa residue hydrophobic signal peptide. Like other GPI-linked proteins, human GFR $\alpha$ -2 has a C-terminal hydrophobic region which is preceded by a three aa residue (GPS) GPI-binding site. Human GFR $\alpha$ -2 shares 96.5% amino acid identity with mouse GFR $\alpha$ -2. The expression of the various GFR $\alpha$ s are differentially regulated in the central and peripheral nervous system, suggesting complementary roles for the GFR $\alpha$ s 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.
4. Baloh, R.H. *et al.* (1998) Neuron **21**:1291.