

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human Ret protein		
	Human Ret (Leu29-Arg635) Accession # P07949	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence	Leu29		
Analysis			
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	94 kDa		

SPECIFICATIONS

SDS-PAGE	120 - 140 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human Ret Fc Chimera is immobilized at 1 µg/mL (100 µL/well), Recombinant Human GDNF (Catalog # 212-GD) binds with an ED ₅₀ of 0.02-0.12 µg/mL in the presence of Recombinant Human GFRα-1/GDNF Rα-1 Fc Chimera (Catalog # 714-GR).
Endotoxin Level	<0.10 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	<ul style="list-style-type: none"> • 12 months from date of receipt, ≤ -20 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

DATA

Binding Activity

Recombinant Human GDNF (µg/mL)	Mean OD
10 ⁻⁴	0.0
10 ⁻³	0.0
10 ⁻²	0.2
10 ⁻¹	0.8
10 ⁰	1.8
10 ¹	2.0

When Recombinant Human Ret Fc Chimera (Catalog # 9986-CR) is immobilized at 1 µg/mL, Recombinant Human GDNF (Catalog # 212-GD) binds with an ED₅₀ of 0.02-0.12 µg/mL in the presence of Recombinant Human GFRα-1/GDNF Rα-1 Fc Chimera (Catalog # 714-GR).

SDS-PAGE

2 µg/lane of Recombinant Human Ret Fc Chimera was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 120-140 kDa and 240-280 kDa, respectively.

BACKGROUND

The GDNF family of neurotrophic factors forms a subfamily within the TGF-beta superfamily. These proteins are potent survival factors for various central and peripheral neurons during development and in the adult animal. The GDNF family members (GDNF, Neurturin, Artemin and Persephin) signal through multicomponent receptors that consist of the Ret receptor tyrosine kinase and one of four glycosyl-phosphatidylinositol (GPI)-linked ligand-binding subunits (GFR alpha -1-4). GFR alpha -1 -2, -3 and -4 are the preferred ligand-binding subunits for GDNF, Neurturin, Artemin and Persephin, respectively. The Ret tyrosine-kinase receptor is encoded by the c-ret proto-oncogene. Mutations of the *Ret* gene have been associated with various human diseases affecting tissues derived from the neural crest, including Hirschsprung's disease, multiple endocrine neoplasia MEN2A and MEN2B, and familial medullary thyroid carcinoma. Human and mouse Ret share 83% amino acid sequence homology (77% homology in the extracellular domain and 93% homology in the cytoplasmic domain). Although Ret does not bind GDNF ligands directly, the extracellular domain of Ret binds the GDNF-GFR-alpha complex with high affinity and is a potent GDNF antagonist in the presence of soluble GFR-alpha (1-4).

References:

1. Trupp, M. *et al.* (1998) Mol. Cell. Neurosci. **11**:47.
2. Enokido, Y. *et al.* (1998) Curr. Biol. **8**:1019.
3. Carlomagno, F. *et al.* (1998) Endocrinology **139**:3613.
4. Baloh, R. *et al.* (1998) Neuron **21**:1291.