

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human Ret protein Leu29-Arg635, with a C-terminal 10-His tag Accession # P07949
N-terminal Sequence Analysis	Leu29
Predicted Molecular Mass	69 kDa

SPECIFICATIONS

SDS-PAGE	101-113 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human Ret His-tag (Catalog # 10302-CR) is immobilized at 1 µg/mL (100 µL/well), Recombinant Human GDNF (Catalog # 212-GD) binds with an ED ₅₀ of 0.03-0.3 µg/mL in the presence of Recombinant Human GFR alpha-1/GDNF R alpha-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	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 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 GDNF (µg/mL)	Mean OD
10 ⁻³	0.15
10 ⁻²	0.45
10 ⁻¹	1.25
10 ⁰	1.55

When Recombinant Human Ret His-tag (Catalog # 10302-CR) is immobilized at 1 µg/mL, 100 µL/well, Recombinant Human GDNF (Catalog # [212-GD](#)) binds with an ED₅₀ of 0.03-0.3 µg/mL in the presence of Recombinant Human GFR alpha-1 Fc Chimera (Catalog # [714-GR](#)).

SDS-PAGE

2 µg/lane of Recombinant Human Ret His-tag (Catalog # 10302-CR) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 101-113 kDa.

BACKGROUND

Receptor tyrosine-protein kinase, also known as Ret, is encoded by the *C-RET* proto-oncogene. Mutations of the *C-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 (1, 2, 3). Human *C-RET* cDNA encodes a 1115 amino acid (aa) with a 28 aa signal peptide, a 679 aa cysteine-rich extracellular domain that contains a membrane anchored Ret-Cadherin 120 Da fragment, and a 456 aa cytoplasmic domain with a soluble Ret kinase fragment (4). 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 (5).

References:

1. Ma, Q. (2009) *Neuron* **64**:773.
2. Carlomagno, F. *et al.* (1998) *Endocrinology* **139**:3613.
3. Cabrera, J.R. *et al.* (2011) *J. Biol. Chem.* **286**:14628.
4. Iwamoto, T. *et al.* (1993) *Oncogene* **8**:1087.
5. Yang, L. *et al.* (2017) *Nat. Med.* **23**:1158.