

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived mouse GFR alpha-1/GDNF R alpha-1 protein Asp25-Ser430, with a C-terminal 6-His tag Accession # P97785
N-terminal Sequence Analysis	Ala19
Structure / Form	Monomer
Predicted Molecular Mass	47 kDa

SPECIFICATIONS

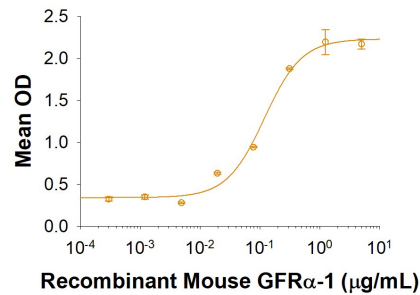
SDS-PAGE	57-67 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Rat GDNF (Catalog # 512-GF) is coated at 25 ng/mL (100 μ L/well), the concentration of Recombinant Mouse GFR α -1/GDNF R α -1 that produces 50% optimal binding response is 0.04-0.24 μ g/mL.
Endotoxin Level	<0.10 EU per 1 μ g 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 μ m filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 μ g/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, \leq -20 °C under sterile conditions after reconstitution.

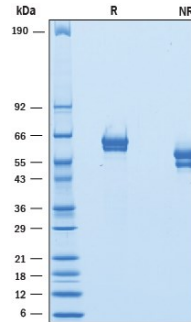
DATA

Binding Activity



When Recombinant Rat GDNF (Catalog # 512-GF) is coated at 25 ng/mL (100 μ L/well), Recombinant Mouse GFR α -1/GDNF R α -1 (Catalog # 10070-GR) binds with an ED₅₀ of 0.04-0.24 μ g/mL.

SDS-PAGE



2 μ g/lane of Recombinant Mouse GFR α -1/GDNF R α -1 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 57 - 67 kDa and 43 - 57 kDa, respectively.

BACKGROUND

Mouse GFR α -1/GDNF R α -1 contains a 24 amino acid (aa) signal peptide, a 406 aa GDNF receptor domain, and a 38 aa propeptide. Like other GPI-linked proteins, mouse GFR α -1/GDNF R α -1 has a C-terminal hydrophobic region which is preceded by a three aa residue (ASS) GPI-binding site. Mouse homolog's GDNF receptor domain contains 99% sequence identity with its rat homolog, and 95% sequence identity with its human homolog. The expression of the various GFRs are differentially regulated in the central and peripheral nervous system, suggesting complementary roles for the GFRs in mediating the activities of the GDNF family of neurotrophic factors (1, 2). GFR α -1/GDNF R α -1 is expressed by neuronal cells, Schwann cells, and injured sciatic nerve where it recruits c-Ret to the lipid rafts (4). It is also over-expressed in a subset of estrogen responsive breast cancers, where it enhances proliferation and cell scattering in response to GDNF (5). GDNF/GFR α -1/c-Ret signaling pathway is part of an inflammatory response in breast cancer. TNF α and IL-1 β enhance expression of GDNF in breast cancer tissue (5). Recent studies have discovered that GFR α -1/GDNF R α -1 expression is non-existent in Alzheimer brain neurons, which leads to no axonal regrowth and apoptosis (6). Addition of exogenous GFR α -1/GDNF R α -1 to the Alzheimer brain neurons was able to restore survival and axonal regrowth (6).

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. U.S.A.* **95**:5801.
4. Paratcha, G. *et al.* (2001) *Neuron* **29**:171.
5. Essegir, S. *et al.* (2007) *Cancer Res.* **67**:11732.
6. Konishi, Y. *et al.* (2014) *J Neurosci.* **34**:13127.