

## GFR Alpha-3/GFRA3 Protein, Mouse, Recombinant (hFc)

### General Information

Synonyms:	GFR $\alpha$ -3/GFRA3;GDNF family receptor $\alpha$ 3;GDNF family receptor alpha 3;GFR $\alpha$ 3;Y15110;GFRalpha3
Protein Construction:	A DNA sequence encoding the mouse GFRA3 (O35118) (Met 1-Arg 379), was fused with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Asn 29
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	O35118
Molecular Weight:	66.2 kDa (predicted); 70 kDa (reducing conditions)

### QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 80 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ $\mu$ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 $\mu$ m filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

#### Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

#### Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Glial cell line derived neurotrophic factor (GDNF) Family Receptor Alpha 3 (GFRA3) or GDNFRa3 is a member of the GDNF receptor family. It is a glycosylphosphatidylinositol (GPI)-linked cell surface receptor for both GDNF and NTN, and mediates activation of the RET tyrosine kinase receptor. GFRA3 / GDNFRa3 is a potent survival factor for central and peripheral neurons, and is essential for the development of kidneys and the enteric nervous system.

Glial cell line-derived neurotrophic factor (GDNF) and neurturin (NTN) are its binding ligand which are two structurally related, potent neurotrophic factors that play key roles in the control of neuron survival and differentiation. GDNF promotes the formation of a physical complex between GFRA/GDNFRa and the orphan tyrosin kinase receptor Ret, thereby inducing its tyrosine phosphorylation. The RET is a receptor tyrosine kinase representing the signal-transducing molecule of a multisubunit surface receptor complex for the GDNF, in which GFRA / GDNFRa acts as the ligand-binding component. The neurotrophic growth factor artemin binds selectively to GDNF family receptor  $\alpha 3$  (GFRA3 / GDNFRa3), forming a molecular complex with the co-receptor RET which mediates downstream signaling. This signaling pathway has been demonstrated to play an important role in the survival and maintenance of nociceptive sensory neurons and in the development of sympathetic neurons.

### Reference

Widenfalk J, et al. (2000) Neurturin, RET, GFRalpha-1 and GFRalpha-2, but not GFRalpha-3, mRNA are expressed in mice gonads. *Cell Tissue Res.* 299(3): 409-15.

Li J, et al. (2009) Autocrine regulation of early embryonic development by the artemin-GFRA3 (GDNF family receptor-alpha 3) signaling system in mice. *FEBS Lett.* 583(15): 2479-85.

Yang C, et al. (2006) Distribution of GDNF family receptor alpha3 and RET in rat and human non-neural tissues. *J Mol Histol.* 37(1-2): 69-77.

**Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins**

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel: 781-999-4286 E\_mail: info@targetmol.com Address: 34 Washington Street, Wellesley Hills, MA 02481