

## GFR Alpha-2/GFRA2 Protein, Mouse, Recombinant (His)

### General Information

Synonyms:	Gdnfrb;Trnr2;GDNF family receptor alpha 2;GDNF family receptor $\alpha$ 2;GFR $\alpha$ -2/GFRA2
Protein Construction:	A DNA sequence encoding the mouse GFR $\alpha$ 2 (NP_032141.2) (Met 1-Ser 441) without the propeptide was expressed, fused with a polyhistidine tag at the C-terminus. Predicted N terminal: Ser 22
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	O08842-1
Molecular Weight:	48.5 kDa (predicted); 75 kDa (reducing condition, due to glycosylation)

### 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:	> 85 % 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

GFRA2 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. GFRA2 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. Experiments have improved that GFRA2 genetic variants and age may play a role in Tardive dyskinesia (TD) susceptibility, but further work is required to confirm these findings.

### Reference

Jing S, et al. (1997) GFRalpha-2 and GFRalpha-3 are two new receptors for ligands of the GDNF family. J Biol Chem. 272(52): 33111-7.

Jing S, et al. (1996) GDNF-induced activation of the ret protein tyrosine kinase is mediated by GDNFR-alpha, a novel receptor for GDNF. Cell. 85(7):1113-24.

Treanor JJ, et al. (1996) Characterization of a multicomponent receptor for GDNF. Nature. 382(6586): 80-3.

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