# Data Sheet (Cat.No.TMPY-05490)

TargetMol

## GFR Alpha-1/GFRA1 Protein, Human, Recombinant (hFc)

### General Information

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| Synonyms: | GDNF family receptor α1;GFR-α-1;GFR α-1/GFRA1;GDNFR;GDNFRA;GDNF family receptor alpha 1;RETL1;TRNR1;GFR-ALPHA-1;RET1L |
| Protein Construction: | A DNA sequence encoding the human GFRA1 (NP_001138925.1) (Met1-Ser424) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Gly 25 |
| Species: | Human |
| Expression Host: | HEK293 Cells |
| Accession: | P56159-2 |
| Molecular Weight: | 50.8 kDa (predicted) |

### QC Testing

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| Biological Activity: | Measured by its binding ability in a functional ELISA. Immobilized human GFRA1-Fc at 10 μg/mL (100 μL/well) can bind GDNF/Biotin , the EC50 of human GDNF/Biotin is 20-50 ng/mL. |
| Purity: | > 90 % as determined by SDS-PAGE. |
| Endotoxin: | < 1.0 EU/μg of the protein as determined by the LAL method. |
| Formulation: | Lyophilized from a solution filtered through a 0.22 μm 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 1 (GFRA1) 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. GFRA1 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. GDNF, a distantly related member of the transforming growth factor-β (TGF-â) superfamily, and its receptor components: GFRA1, Ret and neural cell adhesion molecule (NCAM) have been recently reported to be expressed in the testis and to be involved in the proliferation regulation of immature Sertoli cells.

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.