Data Sheet (Cat.No.TMPY-02588)

TargetMol

NGFR/p75NTR Protein, Mouse, Recombinant (hFc)

General Information

Synonyms:	p75NGFR;RP23-67E18.6;p75;p75NTR;LNGFR;Tnfrsf16;nerve growth factor receptor (TNFR superfamily, member 16)
Protein Construction:	A DNA sequence encoding the extracellular domain of mouse NGFR (Q9Z0W1) (Met 1-Asn 253) was fused with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Lys 22
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	Q9Z0W1
Molecular Weight:	50.6 kDa (predicted); 70-80 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Measured by its ability to inhibit NGF-dependent proliferation of TF-1 human erythroleukemic cells. The ED50 for this effect is typically 0.5-3 μg/mL in the presence of 2 ng/mL Recombinant mouse NGF.
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

Nerve growth factor receptors (NGFRs) belong to a large growth factor receptor family. NGFR includes two types of receptors: high-affinity nerve growth factor receptor and low-affinity nerve growth factor receptor. The high-

affinity nerve growth factor receptor is also referred to as the Trk family whose members are bound by some neurotrophins with high affinity.Nerve growth factorbinds with TrkA after being released from target cells, the NGF / TrkA complex is subsequently trafficked back to the cell body. The Low-affinity nerve growth factor receptor also named p75 which binds with all kinds of neurotrophins with low affinity. All four kinds of neurotrophins, including Nerve growth factor, Brain-derived neurotrophic factor, Neurotrophin-3, and Neurotrophin-4 bind to the p75. Studies have proved that NGFR acts as a molecular signal switch that determines cell death or survival by three steps. First, pro-nerve growth factor (prNGF) triggers cell apoptosis by its high-affinity binding to p75NTR, while NGF induces neuronal survival with low-affinity binding. Second, p75NTR mediates cell death by combining with co-receptor Sortilin, whereas it promotes neuronal survival through combination with proNGF. Third, the release of the intracellular domain chopper or cleavage short p75 NTR can independently initiate neuronal apoptosis.

Reference

Chen LW, et al. (2008) The proNGF-p75NTR-sortilin signalling complex as new target for the therapeutic treatment of Parkinson's disease. CNS Neurol Disord Drug Targets. 7(6): 512-23.

Deponti D, et al. (2009) The low-affinity receptor for neurotrophins p75NTR plays a key role for satellite cell function in muscle repair acting via RhoA. Mol Biol Cell.20(16): 3620-7.

Ken-ichiro K, et al. (2004) Necdin-related MAGE proteins differentially interact with the E2F1 transcription factor and the p75 neurotrophin receptor. J Biol Chem. 279 (3): 1703-12.