Data Sheet (Cat.No.TMPY-06905)

TargetMol

IGF1R/CD221 Protein, Human, Recombinant (His & Avi), Biotinylated

General Information

Synonyms:	CD221;insulin-like growth factor 1 receptor;JTK13;IGF1 Receptor;IGFR;IGF-I R;IGFIR
Protein Construction:	A DNA sequence encoding the human IGF1R (NP_000866.1) (Met1-Asn932) was expressed with a C-terminal polyhistidine tag followed by an AVI tag. The expressed protein was biotinylated in vivo by the Biotin-Protein ligase (BirA enzyme) which is co-expressed. Predicted N terminal: Glu 31
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P08069
Molecular Weight:	106.14 kDa (predicted); 116.4 kDa and 54.1 kDa (reducing conditions)

QC Testing

Biological Activity:	1.Loaded Anti-IGF-1R Antibody, human IgG1 on ProA Biosensor, can bind Recombinant Human IGF1R Protein, His Tag, Biotinylated with an affinity constant of 1.20nM as determined in BLI assay (Routinely tested). 2. Immobilized Anti-IGF-1R Antibody at 2 μg/mL (100 μL/well) can bind Recombinant Human IGF1R Protein (ECD, His & AVI Tag), Biotinylated , the EC50 is 1.2-3.6 ng/mL(QC tested).
Purity:	≥ 95 % as determined by SDS-PAGE. ≥ 90 % as determined by SEC-HPLC.
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

The insulin-like growth factor-1 receptor (IGF1R) is a transmembrane tyrosine kinase involved in several biological processes including cell proliferation, differentiation, DNA repair, and cell survival. This a disulfide-linked heterotetrameric transmembrane protein consisting of two α and two β subunits, and among which, the α subunit is extracellular while the β subunit has an extracellular domain, a transmembrane domain, and a cytoplasmic tyrosine kinase domain. The IGF1R signaling pathway is activated in the mammalian nervous system from the early developmental stages. Its major effect on developing neural cells is to promote their growth and survival. This pathway can integrate its action with signaling pathways of growth and morphogenetic factors that induce cell fate specification and selective expansion of specified neural cell subsets. Modulation of cell migration is another possible role that IGF1R activation may play in neurogenesis. In the mature brain, IGF-I binding sites have been found in different regions of the brain, and multiple reports confirmed a strong neuroprotective action of the IGF-IR against different pro-apoptotic insults. IGF1R is an important signaling molecule in cancer cells and plays an essential role in the establishment and maintenance of the transformed phenotype. Inhibition of IGF1R signaling thus appears to be a promising strategy to interfere with the growth and survival of cancer cells. IGF1R is frequently overexpressed by tumors and mediates proliferation and apoptosis protection. IGF signaling also influences hypoxia signaling, protease secretion, tumor cell motility, and adhesion, and thus can affect the propensity for invasion and metastasis. Therefore, IGF1R is now an attractive anti-cancer treatment target.Cancer ImmunotherapyImmune CheckpointImmunotherapyTargeted Therapy

Reference

Bhr C, et al. (2004) The insulin like growth factor-1 receptor (IGF-1R) as a drug target: novel approaches to cancer therapy. Growth Horm IGF Res. 14 (4): 287-95.
Riedemann J, et al. (2006) IGF1R signalling and its inhibition. Endocr Relat Cancer. 13 Suppl 1: 33-43.
Gualco E, et al. (2009) IGF-IR in neuroprotection and brain tumors.
Front Biosci. 14: 352-75. Annenkov A. (2009) The insulin-like growth factor (IGF) receptor type 1 (IGF1R) as an essential component of the signalling network regulating neurogenesis. Mol Neurobiol. 40 (3): 195-215.

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