Human IGF1R / CD221 Protein (His & GST Tag)

Catalog Number: **10164-H20B1**

General Information

Gene Name Synonym:

CD221; IGF-I R; IGF1 Receptor; IGFIR; IGFR; JTK13

Protein Construction:

A DNA sequence encoding the human IGF1R (NP_000866.1) cytoplasmic domain (Met 954-Cys 1367) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus.

Source: Human

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 85 % as determined by SDS-PAGE

Bio Activity:

The specific activity was determined to be 554 nmol/min/mg using Poly(Glu,Tyr) 4:1 as substrate (see Activity Assay Protocol)

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Met

Molecular Mass:

The recombinant human IGF1R (aa 954-1367) /GST chimera consists of 651 amino acids and has a calculated molecular mass of 74.6 KDa.

Formulation:

Supplied as sterile 20 mM Tris, 500 mM NaCl, 20 % glycerol, pH 7.4.

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

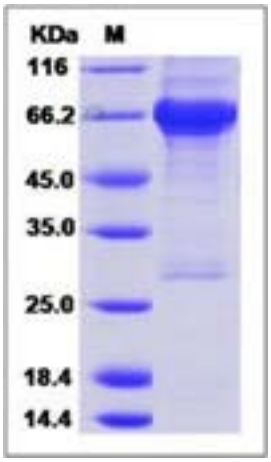
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

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. IGF1R signalling pathway is activated in the mammalian nervous system from early developmental stages. Its major effect on developing neural cells is to promote their growth and survival. This pathway can integrate its action with signalling 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 tumours, and mediates proliferation and apoptosis protection. IGF signalling also influences hypoxia signalling, protease secretion, tumour cell motility and adhesion, and thus can affect the propensity for invasion and metastasis. Therefore, the IGF1R is now an attractive anti-cancer treatment target.

References

1.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. 2.Riedemann J, *et al.* (2006) IGF1R signalling and its inhibition. Endocr Relat Cancer. 13 Suppl 1: 33-43. 3.Gualco E, *et al.* (2009) IGF-IR in neuroprotection and brain tumors. Front Biosci. 14: 352-75.