Human Insulin Receptor / INSR / CD220 Protein (long isoform, His Tag)

Catalog Number: **11081-H08H**

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Biological Solution Specialist

General Information

Gene Name Synonym:

CD220; HHF5; Insulin Receptor; 4932439J01Rik; CD220; D630014A15Rik; IR; IR-A; IR-B

Protein Construction:

A DNA sequence encoding the human INSR isoform long (NP_000199.2) extracellular domain (Met 1-Lys 956) was expressed, fused with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: Human Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio Activity:

Measured by its binding ability in a functional ELISA . When 1 μg/ml of biotinylated human insulin is immobilized onto a streptavidin coated plate, it can bind human INSR (isoform long) with a linear range of 0.625-10 μg/ml .

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: His 28 & Ser 763

Molecular Mass:

The secreted recombinant human INSR isoform long consists of 940 amino acids and has a predicted molecular mass of 107 (83+24) kDa. As a result of glycosylation, the apparent molecular mass of rhINSR is approximately 125-135 kDa & 40-45 kDa, corresponding to the α subunit and the ECD of β subunit respectively in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, 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:

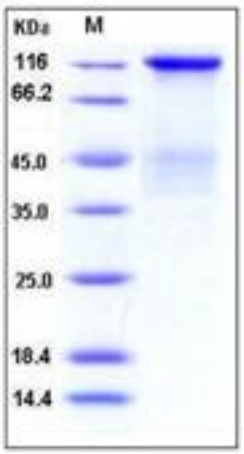
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

INSR (Insulin receptor), also known as CD220, is a transmembrane receptor that is activated by insulin. INSR belongs to theprotein kinase superfamily, and exists as a tetramer consisting of two alpha subunits and two beta subunits linked by disulfide bonds. The alpha and beta subunits are encoded by a single INSR gene, and the beta subunits pass through the cellular membrane. As the receptor for insulin with tyrosine-protein kinase activity, INSR associates with downstream mediators upon binding to insulin, including IRS1 (insulin receptor substrate 1) and phosphatidylinositol 3'-kinase (PI3K). IRS-1 binding and phosphorylation eventually leads to an increase in the high affinity glucose transporter (Glut4) molecules on the outer membrane of insulin-responsive tissues. INSR isoform long and isoform short are expressed in the peripheral nerve, kidney, liver, striated muscle, fibroblasts and skin, and is found as a hybrid receptor with IGF1R which also binds IGF1 in muscle, heart, kidney, adipose tissue, skeletal muscle, hepatoma, fibrobasts, spleen and placenta. Defects in Insulin Receptor/INSR are the cause of Rabson-Mendenhall syndrome (Mendenhall syndrome), insulin resistance (Ins resistance), leprechaunism (Donohue syndrome), and familial hyperinsulinemic hypoglycemia 5 (HHF5). It may also be associated with noninsulin-dependent diabetes mellitus (NIDDM).

References

1.Ebina Y., *et al.*,(1985), The human insulin receptor cDNA: the structural basis for hormone-activated transmembrane signalling. Cell 40:747-758.
2.Ullrich A., *et al.*, (1985), Human insulin receptor and its relationship to the tyrosine kinase family of oncogenes.Nature 313:756-761.
3.Grimwood J., *et al.*,(2004), The DNA sequence and biology of human chromosome 19.Nature 428:529-535.