

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

Catalog Number: 11081-H08H-B



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

CD220; HHF5; Insulin Receptor

### Protein Construction:

A DNA sequence encoding the human INSR isoform long (NP\_000199.2) extracellular domain (Met1-Lys956) was expressed, fused with a polyhistidine tag at the C-terminus. The purified protein was biotinylated in vitro.

**Source:** Human

**Expression Host:** Human Cells

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE.

### Endotoxin:

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

### Stability:

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

**Predicted N terminal:** His 28 & Ser 763

### Molecular Mass:

The recombinant human INSR isoform long consists of 940 amino acids and predicts a molecular mass of 107 kDa.

### 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:

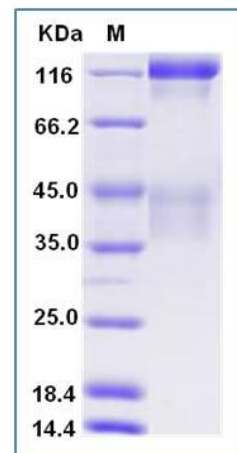
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**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 the protein 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, fibroblasts, 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. Ulrich 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.

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For US Customer: Fax: 267-657-0217 • Tel: 215-583-7898

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