Recombinant Mouse Insulin R/CD220
Catalog Number: 7544-MR

DESCRIPTION

Source: Chinese Hamster Ovary cell line, CHO-derived
His28-Ser748 (α subunit) & Ser753-Lys946, with a C-terminal 6-His tag (β subunit)
Accession # P15208

N-terminal Sequence Analysis
His28 (α subunit) & Ser753 (β subunit)

Predicted Molecular Mass
82.6 kDa (α subunit) & 22.5 kDa (β subunit)

SPECIFICATIONS

SDS-PAGE
120-150 & 38-41 kDa, reducing conditions

Activity
Measured by its binding ability in a functional ELISA.
When 15 ng/mL of biotinylated recombinant human Insulin is added to serially diluted Recombinant Mouse Insulin R/CD220, the concentration of Recombinant Mouse Insulin R/CD220 that produces 50% of the optimal binding response is 0.3-1.2 μg/mL.

Endotoxin Level
<0.01 EU per 1 μg of the protein by the LAL method.

Purity
>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation
Lyophilized from a 0.2 μm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution
Reconstitute at 100 μg/mL in PBS.

Shipping
The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage
Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

The Insulin Receptor (gene name INSR, designated CD220) is a type I transmembrane glycoprotein in the Insulin/IGF Receptor family of receptor tyrosine kinases that share structural similarity and overlapping intracellular signaling events (1-3). The 1382 amino acid (aa) mouse Insulin R preproprotein is processed by proteolysis to remove the signal peptide and produce an extracellular α portion (aa 28-748), and an extracellular/transmembrane/cytoplasmic β subunit (aa 753-1372) (4). The extracellular domain (ECD) contains two homologous globular domains separated by a cysteine-rich domain and followed by three fibronectin type III domains. The intracellular region contains insulin-receptor substrate (IRS) docking sites, the kinase domain, and a phosphotyrosine-containing linker region. The Mouse Insulin R ECD shares 96%, 99%, 94% and 94% aa sequence identity with human, rat, equine and canine Insulin R, respectively. Insulin R may homodimerize, or heterodimerize with the IGF-I receptor (1, 3, 4). All receptor combinations bind insulin, IGF-I or IGF-II, but with differing affinities (2-6). This system allows fine tuning of signaling pathways according to the concentrations of insulin, IGF-I and IGF-II, and expression of receptor subunits on the cell surface (2, 3). Insulin R signaling regulates glucose uptake and metabolism, but also contributes to cell growth, differentiation and apoptosis (2, 3, 5, 6). Consistent with mice deleted for Insulin R, mutations in the human Insulin R gene have been linked severe insulin resistance (type A and Rabson-Mendenhall syndrome) that may include type II diabetes mellitus and, rarely, leprechaunism (Donohue syndrome) that also includes growth delays and endocrine system abnormalities (1, 7). The R&D Systems mouse Insulin R consists of the entire ECD and is a pre-receptor that does not contain bound insulin.

References: