Insulin R/CD220 Protein, Human (sf9, His-GST)

Cat. No.:	HY-P73244
Synonyms:	CD 220; HHF5; INSR; Insulin R; Insulin receptor; IR
Species:	Human
Source:	Sf9 insect cells
Accession:	P06213 (G989-S1382)
Gene ID:	3643
Molecular Weight:	Approximately 70 kDa

PROPERTIES

Biological Activity	The specific activity was determined to be >45 nmol/min/mg using Poly (Ala,Glu,Lys,Tyr) 6:2:5:1 as substrate.
Appearance	Solution.
Formulation	Supplied as a 0.2 μm filtered solution of 50 mM Tris, 100 mM NaCl, pH 7.4, 20% gly, 0.3 mM DTT
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	N/A
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background	The Insulin R/CD220 protein, a receptor tyrosine kinase, orchestrates the diverse actions of insulin through the phosphorylation of multiple intracellular substrates upon insulin binding. These substrates include insulin receptor substrates (IRS1, 2, 3, 4), SHC, GAB1, CBL, and other signaling intermediates. Phosphorylated IRS proteins activate two main signaling pathways: the PI3K-AKT/PKB pathway, pivotal for insulin's metabolic effects, and the Ras-MAPK pathway, which collaborates with PI3K to regulate cell growth and differentiation. The PI3K-AKT/PKB pathway triggers the translocation of the glucose transporter SLC2A4/GLUT4 to the cell membrane, facilitating glucose transport. Activated AKT/PKB, a downstream effector, induces an anti-apoptotic effect by phosphorylating BAD, regulates the expression of metabolic enzymes, and modulates the mTORC1 signaling pathway, integrating insulin signals for cell growth and metabolism. The Ras/RAF/MAP2K/MAPK pathway mediates insulin-induced cell growth, survival, and cellular differentiation. In addition to insulin, the receptor can bind insulin-like growth factors (IGFI and IGFII). Hybrid receptors composed of IGF1R and INSR isoforms exhibit varying affinities for IGFs and insulin, influencing their activation patterns. Furthermore, in adipocytes, the receptor inhibits lipolysis.

Caution: Product has not been fully validated for medical applications. For research use only.

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