

Recombinant Human INS therapeutic protein(Insulin human)

Cat. No. Insulin-P039H **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Recombinant Human Insulin therapeutic protein is an intermediate-acting insulin to improve glycemic control. It is synthesized using a strain of Escherichia coli bacteria that has been genetically altered to produce human insulin. Human insulin isophane suspension consists of a crystalline suspension of human insulin with protamine and zinc. This combination results in an intermediate-acting insulin with a slower onset of action and longer duration of activity than regular human insulin.

Species

Human

Description

The primary activity of insulin is the regulation of glucose metabolism. Insulin promotes glucose and amino acid uptake into muscle and adipose tissues, and other tissues except brain and liver. It also has an anabolic role in stimulating glycogen, fatty acid, and protein synthesis. Insulin inhibits gluconeogenesis in the liver. Insulin binds to the insulin receptor (IR), a heterotetrameric protein consisting of two extracellular alpha units and two transmembrane beta units. The binding of insulin to the alpha subunit of IR stimulates the tyrosine kinase activity intrinsic to the beta subunit of the receptor. The bound receptor is able to autophosphorylate and phosphorylate numerous intracellular substrates such as insulin receptor substrates (IRS) proteins, Cbl, APS, Shc and Gab 1. These activated proteins, in turn, lead to the activation of downstream signaling molecules including PI3 kinase and Akt. Akt regulates the activity of glucose transporter 4 (GLUT4) and protein kinase C (PKC) which play a critical role in metabolism and catabolism.

Molecular Mass

5.81 kDa

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AA Sequence	>A chainGIVEQCCTSICSLYQLENYCN>B chainFVNQHLCGSHLVEALYLVCGERGFFYTPKT
Endotoxin	< 0.1 EU per µg of the protein
Purity	>96%
Alias	INS; ILPR; IRDN; IDDM2; Insulin human

GENE INFORMATION

Gene Name	INS insulin [Homo sapiens]
Official Symbol	INS
Synonyms	INS; insulin; proinsulin; ILPR; IRDN; IDDM2; MODY10;
Gene ID	3630
mRNA Refseq	NM_000207
Protein Refseq	NP_000198
UniProt ID	P01308
Chromosome Location	11p15.5
Pathway	ATF-2 transcription factor network, organism-specific biosystem; Adipogenesis, organism-specific biosystem; Aldosterone-regulated sodium reabsorption, organism-specific biosystem; Aldosterone-regulated sodium reabsorption, conserved

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biosystem; Amyloids, organism-specific biosystem; Arf6 trafficking events, organism-specific biosystem; Developmental Biology, organism-specific biosystem;

Function

hormone activity; hormone activity; hormone activity; insulin receptor binding; insulin receptor binding; insulin-like growth factor receptor binding; protein binding;

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