

# Recombinant Human Insulin

**Cat. No.** INS-5308H    **Lot. No.** (See product label)

## SPECIFICATION

|                            |   |
|----------------------------|---|
| <b>Product Overview</b>    | Recombinant Human Insulin is a two chain, non-glycosylated polypeptide chain containing 51 amino acids and has a MW = 5.8 kDa.  |
| <b>Species</b>             | Human   |
| <b>Source</b>              | E.coli  |
| <b>Description</b>         | INS is a hormone central to regulating carbohydrate and fat metabolism in the body. INS causes cells in the liver, muscle, and fat tissue to take up glucose from the blood, storing it as glycogen in the liver and muscle. INS stops the use of fat as an energy source by inhibiting the release of glucagon. With the exception of the metabolic disorder diabetes mellitus and Metabolic syndrome, INS is provided within the body in a constant proportion to remove excess glucose from the blood, which otherwise would be toxic. |
| <b>Form</b>                | Lyophilized from a sterile, concentrated (1 mg/ml) solution with no additives.  |
| <b>Molecular Weight</b>    | 5.8 kDa   |
| <b>Purity</b>              | >98.0% as determined by RP-HPLC and SDS-PAGE.   |
| <b>Endotoxin Level</b>     | <0.1 ng/g of recombinant human Insulin  |
| <b>Biological Activity</b> | 28 units/mg   |

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| <b>Reconstitution</b>   | Centrifuge vial prior to opening. Add sterile 0.005 N HCL to the vial to fully solubilize the protein to a concentration not more than 1 mg/ml.   |
| <b>Storage</b>          | Lyophilized product is stable at room temperature for 3 weeks, but it is recommended to store the lyophilized product desiccated at -20°C to -80°C. Upon reconstitution, protein should be stored at 2-4°C for one week and for future use at -20°C to -80°C. Add a carrier protein (0.1% HSA or BSA) as a stabilizer for long term storage. Please note that the addition of any carrier protein into this product may produce unwanted endotoxin. This depends upon the particular application employed. Avoid repeated freeze-thaw cycles. |
| <b>Official Symbol</b>  | INS   |
| <b>GENE INFORMATION</b> |   |
| <b>Gene Name</b>        | INS insulin [ Homo sapiens ]  |
| <b>Synonyms</b>         | INS; insulin; ILPR; IRDN; IDDM2; MODY10; proinsulin; OTTHUMP00000011161; OTTHUMP00000011162; OTTHUMP00000196036; OTTHUMP00000196038; OTTHUMP00000217519   |
| <b>Gene ID</b>          | 3630  |
| <b>mRNA Refseq</b>      | NM_000207   |
| <b>Protein Refseq</b>   | NP_000198   |
| <b>MIM</b>              | 176730  |
| <b>UniProt ID</b>       | P01308  |

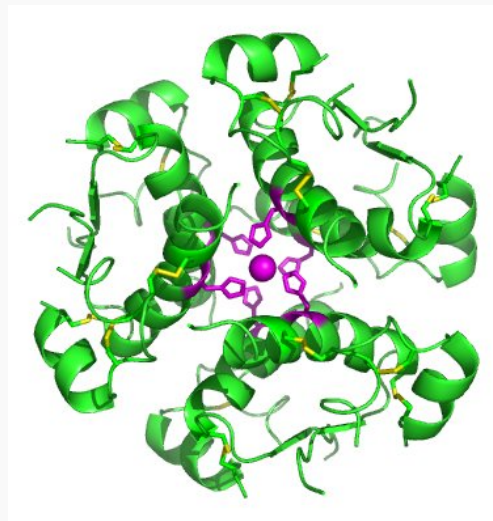
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| <b>Chromosome Location</b> | 11p15.5   |
| <b>Pathway</b>             | ATF-2 transcriptionfactor network; Adipogenesis; Arf6 trafficking events; Diabetes pathways;FOXA2 and FOXA3 transcription factor networks; Folate Metabolism; IRS activation;Insulin receptor recycling; Insulin signaling pathway; Maturity onsetdiabetes of the young; Progesterone-mediated oocyte maturation; Regulation ofInsulin Secretion; SHC-related events; Type I diabetes mellitus; mTORsignaling pathway |
| <b>Function</b>            | hormone activity;insulin receptor binding; insulin-like growth factor receptor binding;protein binding  |

**Computer-generated image of six insulin molecules assembled in a hexamer, highlighting the threefold symmetry, the zinc ions holding it together, and the histidine residues involved in zinc binding. Insulin is stored in the body as a hexamer, while the active form is the monomer.**



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