

Insulin Protein, Human, Recombinant

General Information

Synonyms:	IDDM1;MODY10;ILPR;IDDM2;IRDN;IDDM;insulin;INS
Protein Construction:	A DNA sequence encoding human insulin B chain (P01308)(Phe25-Lys53) and human insulin A chain (P01308)(Gly90-Asn110) was expressed with a linker AAK. Predicted N terminal: Phe
Species:	Human
Expression Host:	P. pastoris (Yeast)
Accession:	P01308
Molecular Weight:	7.1 kDa (predicted); 6 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured in a serum-free cell proliferation assay using MCF-7 human breast cancer cells. The ED50 for this effect is typically 0.2-1 µg/mL.
Purity:	> 95% as determined by SDS-PAGE
Endotoxin:	Please contact us for more information.
Formulation:	Lyophilized from a solution filtered through a 0.22 µm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
Reconstituted with sterile deionized water to 0.13 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

INS (Insulin) is a Protein Coding gene. This gene encodes insulin, a peptide hormone that plays a vital role in the regulation of carbohydrate and lipid metabolism. After removal of the precursor signal peptide, proinsulin is post-translationally cleaved into three peptides: the B chain and A chain peptides, which are covalently linked via two disulfide bonds to form insulin, and C-peptide. The binding of insulin to the insulin receptor (INSR) stimulates glucose uptake. Diseases associated with INS include Hyperproinsulinemia and Maturity-Onset Diabetes Of The

Young, Type 10. A multitude of mutant alleles with phenotypic effects has been identified, including insulin-dependent diabetes mellitus, permanent neonatal diabetes mellitus, maturity-onset diabetes of the young type 10, and hyperproinsulinemia.

Reference

Veedefald S, Plamboeck A, Deacon C F, et al. Cephalic phase secretion of insulin and other enteropancreatic hormones in humans[J]. American Journal of Physiology-Gastrointestinal and Liver Physiology, 2016, 310(1): G43-G51.

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