

Human Recombinant Insulin

Cell Culture Tested

Product Code: CF034

Product Description:

Source: Yeast

Molecular Weight: ~6 kDa

Amino Acid Sequence:

MALWMRLPL	LALLALWGPD	PAAAFVNQHL
CGSHLVEALY	LVCG ERGFFY	TPKTRREAED
LQVGQVELGG	GPGAGSLQPL	ALEGLQKRG
IVEQCCTSIC	SLYQLENYCN	

Human insulin is a dimeric polypeptide hormone secreted by pancreatic cells.

The primary function of insulin is to regulate glucose uptake by recruiting membrane glucose transporter Glut-4 to cell surface of muscles and fat cells. Other functions of insulin involves memory development and cognitive behaviour. The amino acid sequence of insulin is well conserved among species. Bovine insulin differs from human insulin in only three amino acid residues. Bovine insulin has often been used as growth supplement in cells culture at 1-10 µg/ml. Mature human insulin is generated by removal of signal sequence and propeptide. It is a small globular protein with in two polypeptide chains, chain A and B linked by two disulfide bonds in addition to one disulfide loop in chain A. Recombinant insulin is a monomeric protein of ~6 kDa consisting of 51 amino acid residues.

CF034 is Human recombinant insulin expressed in Yeast, filtered through 0.2 micron filter and lyophilized with no additives.

Directions:

1. Reconstitute human recombinant insulin in dilute HCl as required.
Note: Do not Vortex
2. Filter Sterilized by using low protein binding 0.2 micron filters.
3. Store in working aliquotes. Refer the storage and shelf life sections for details.
4. Avoid repeated freeze-thaw cycles.

Quality Control:

Appearance

White powder or practically white crystals.

Solubility

Soluble at 10mg per ml in 10mM HCl

Microbial enumeration test

The total bacterial count does not exceed 300 cfu/gm.

Bacterial endotoxins (by gel clot method)

Not more than 10 USP Endotoxin Units/mg.

Loss on drying (by oven method)

Not more than 10.0% of its weight

Assay(%)

95-105%

Assay(IU/mg)

NLT 27.5 IU/mg

Bioidentity (in vivo)

Potency NLT 15 IU/mg

Storage and Shelf Life:

Shelf life of human recombinant insulin depends on the storage temperature and the form in which it is stored. Refer the table given below for recommended storage time of different forms of human recombinant insulin at different storage temperatures.

Product form	Temperature	Storage time
Powder	-30 to -10°C	4 years
Reconstituted	2°C to 8°C	1 month
	-30 to -10°C	1 Year

Once reconstituted, aliquot the solution into smaller volumes and freeze for future use. Repeated freezing and thawing of the reconstituted frozen solution should be avoided as it causes denaturation of protein to some extent.

Disclaimer:

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