**Product datasheet**

**Recombinant human Insulin protein (Active) ab123768**

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**Overview**

**Product name**  
Recombinant human Insulin protein (Active)

**Protein length**  
Full length protein

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**Description**

**Nature**  
Recombinant

**Source**  
Escherichia coli

**Amino Acid Sequence**

**Accession**  
P01308

**Species**  
Human

**Sequence**

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GIVEQCCTSIC SLYQLENYCN FVNQHL CGSHLVEALY LVCGERGFFY TPKT
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**Molecular weight**  
6 kDa

**Additional sequence information**  
Two chain, non-glycosylated polypeptide chain. (aa 25-54 and 90-110)

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**Specifications**

Our **Abpromise guarantee** covers the use of ab123768 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

**Biological activity**  
ab123768 is fully biologically active when compared to World Health Organization (WHO) reference standard which is 28 units/mg.

**Applications**

Functional Studies

SDS-PAGE

HPLC

**Purity**

> 98 % SDS-PAGE.

> 98% HPLC Endotoxin Level: <0.1 ng/µg of Insulin. Recombinant Insulin is purified by proprietary chromatographic techniques.

**Form**

Lyophilised

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**Preparation and Storage**

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Stability and Storage
Shipped at 4°C. Store at 4°C prior to reconstitution. Store at -20°C. Store under desiccating conditions.
This product is an active protein and may elicit a biological response in vivo, handle with caution.

Reconstitution
Centrifuge the vial prior to opening. Reconstitute in 0.01 N HCl. The solution can then be diluted to other aqueous buffers. Upon reconstitution, ab123768 should be stored at 4°C for 2-7 days. For long-term storage, it is recommended to add a carrier protein (0.1% HSA or BSA) and store aliquots at -20°C or -70°C. Avoid freeze-thaw cycles.

Function
Insulin decreases blood glucose concentration. It increases cell permeability to monosaccharides, amino acids and fatty acids. It accelerates glycolysis, the pentose phosphate cycle, and glycogen synthesis in liver.

Involvement in disease
Defects in INS are the cause of familial hyperproinsulinemia (FHPRI) [MIM:176730].
Defects in INS are a cause of diabetes mellitus insulin-dependent type 2 (IDDM2) [MIM:125852].
IDDM2 is a multifactorial disorder of glucose homeostasis that is characterized by susceptibility to ketoacidosis in the absence of insulin therapy. Clinical features are polydipsia, polyphagia and polyuria which result from hyperglycemia-induced osmotic diuresis and secondary thirst. These derangements result in long-term complications that affect the eyes, kidneys, nerves, and blood vessels.
Defects in INS are a cause of diabetes mellitus permanent neonatal (PNDM) [MIM:606176].
PNDM is a rare form of diabetes distinct from childhood-onset autoimmune diabetes mellitus type 1. It is characterized by insulin-requiring hyperglycemia that is diagnosed within the first months of life. Permanent neonatal diabetes requires lifelong therapy.
Defects in INS are a cause of maturity-onset diabetes of the young type 10 (MODY10) [MIM:613370]. MODY10 is a form of diabetes that is characterized by an autosomal dominant mode of inheritance, onset in childhood or early adulthood (usually before 25 years of age), a primary defect in insulin secretion and frequent insulin-independence at the beginning of the disease.

Sequence similarities
Belongs to the insulin family.

Cellular localization
Secreted.

Images
Under reducing conditions and stained with Coomassie Blue.

Lane 1: 2 µg Human Insulin.
Lane 2: 5 µg Human Insulin.
Lane 3: 10 µg Human Insulin.

Human recombinant insulin has a predicted MW of 5.81 kDa

Please note: All products are “FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE”

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit https://www.abcam.com/abpromise or contact our technical team.

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