ALPHA DIAGNOSTIC INTERNATIONAL

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Product Data Sheet

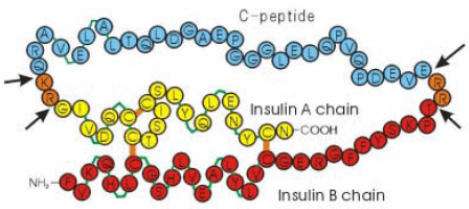
Mouse/Rat Insulin A, B, and C-peptides

☐ **Cat#** INSA15-P	Mouse/rat/hamster/ Insulin A chain peptide (90-110 aa)	**Size**:	500 ug
☐ **Cat#** INSB25-P	Mouse/rat Insulin B chain peptide (25-54 aa)	**Size**:	500 ug
☐ **Cat#** INSC35-P	Mouse Insulin C-peptide (57-87 aa)	**Size**:	500 ug

Insulin is the principal hormone responsible for glucose metabolism. It is synthesized in the cells of the islets of Langerhans as the precuror, proinsulin, which is processed to form C-peptide and insulin and both are secreted in equimolar amounts into the portal circulation. The mature insulin molecule comprises two polypeptide chairs, the A chain (21 amino acids) and the B chain (30 amino acids), which are linked by two inter-chain disulphide bridges. There is, in addition, a single intra-chain disulphide bridge in the A chain. The sequence of insulin is highly conserved in mammalian species, and is homologous with the insulin-like growth factors IGF-I and IGF-II. Secretion of insulin is mainly controlled by plasma glucose concentration and the hormones have a number of important metabolic actions. Its principal function is to control the uptake and utilization of glucose in peripheral tissues via the glucose transporter. This and other hypoglycemic activities, such as the inhibition of hepatic gluconeogenesis and glycogenolysis are counteracted by the hyperglycemic hormones including glucagons, epinephrine (adrenaline), growth hormone and cortisol. Insulin concentrations are severely reduced in insulin-dependent diabetes (DDM) and some other conditions such as hypopituitarism. Insulin concentrations may be raised in non-insulin-dependant diabetes (NIDDM), obesity, insulinoma and some endocrine dysfunctions such as Cushing's Syndrome and Acromegaly1, 2 The main clinical utility measurement is in the investigation of hypoglycemia. Insulin assay have been used in the following applications:

Mouse Insulin Structure

Fig. 1 Formation of rat insulin and c-peptide from proinsulin



Interchain disulfide bonds are located between the cysteines at positions A7 and B7 and between positions A20 and B19. An intrachain disulfide bond occurs between the cysteines at A6 and A11.1,2 Bovine insulin differs from human insulin at the following positions: alanine for threonine at A8, valine for isoleucine at A10, and alanine for threonine at the carboxyl terminal of the B-chain.

Mouse Insulin (protein accession #P01326)
Sequence: MALWMRFLPL LALLFLWESH PTQAFVKQHL CGSHLVEALY LVCGERGFFY TPMSRREVED PQVAQLELGG GPGAGDLQTL ALEVAQQKRG IVDQCCTSIC SLYQLENYCN
Length: 110 aa
Signal peptide: 1-24
B-chain: 25-54
C-peptide: 57-87
A-chain: 90-110
Cys-Cys (31-96; 43-109; 95-100).

Sources of Peptides

Cat # INSA15-P,
Sequence: GIVDQCCTSICSLYQLENYCN (Cys-95-Cys100)
Mol Wt: 2365.68
Formula:
Purity: >90%
Form: white to off white Powder
Storage: Store powder at -20oC for up to 6 months.
Note: Mouse insulin A chain peptide (1-21 aa or 90-110 aa or unprocessed insulin) is 100% conserved in rat, hamster; 95% in human, rabbit, pig and 90% in horse insulin A chain.

Cat # INSB25-P,
Sequence: FVKQHLCGSHLVEALYLVCGERGFFYTPMS
Mol Wt: 3432.9
Purity: >90%
Formula:
Form: white to off white Powder Powder
Storage: Store powder at -20oC for up to 6 months.
Note: This sequence is 100% conserved in mouse and rat; 96% in human, hamster, elephant, G. pig, rabbit, bovine, sheep, pig, horse, cat, and dog insulin B chain.

Cat # INSC35-P,
Sequence: EVEDPQVAQLELGGGPGAGDLQTLALEVAQQ
Mol Wt: 3133.3
Purity: >90%
Formula:
Form: white to off white Powder Powder
Storage: Store powder at -20oC for up to 6 months.
Note: This sequence is 100% conserved in mouse; 97% in rat, hamster, 78% in human, 65% in canine insulin C-peptide.

After reconstitution in water or in other buffers, store solution in small aliquots at -20oC for 3-6 months. Do not freeze and thaw or store diluted solutions.

References: Wentworth BM (1986) J. Mol Evol. 23, 305-312; Sawa T (19900 J. Mol./ Endocrinol. 5, 61-67; Buenzli HF (1972) oppe-Seyler's Z. Physiol. Chem. 353:451-458

For in vitro research use only

Related Material available for ADI

Human, mouse, rat Insulin and Insulin and C-peptdie ELISA kits Recombinant purified human, porcine, bovine insulin and antibodies

Human, mouse, and rat Anti-Insulin IgG (autoantibodies) and IgM ELISA ELISA

Human, bovine, and porcine Insulin Agarose affinity columns

INSLA15, B-25, C35-P 130919A

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