

Insulin A (C-12): sc-7839

BACKGROUND

Insulin is a secreted peptide hormone that elicits metabolic effects such as increases in glucose uptake and glycogen synthesis leading to a decrease in blood glucose concentration. Insulin is first formed as a precursor molecule, preproinsulin, which is later cleaved to proinsulin and finally to the mature Insulin hormone. Mature Insulin consists of 51 amino acids, contained within an A chain and a B chain that are connected by 2 disulfide bridges. It increases cell permeability to monosaccharides, amino acids and fatty acids. Insulin is secreted by the pancreas at basal levels in the absence of exogenous stimuli, with secretion increasing in response to glucose. Insulin action is effected by the binding of Insulin to cell-surface receptors on the target cell membrane. Defects of Insulin are the cause of hyperproinsulinemia and of type-II diabetes mellitus.

REFERENCES

1. Kahn, C.R. 1985. The molecular mechanism of Insulin action. *Ann. Rev. Med.* 36: 429-451.
2. Lammers, R., et al. 1989. Differential signalling potential of Insulin- and IGF-1-receptor cytoplasmic domains. *EMBO J.* 8: 1369-1375.

CHROMOSOMAL LOCATION

Genetic locus: INS (human) mapping to 11p15.5; Ins1 (mouse) mapping to 19 D2.

SOURCE

Insulin A (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Insulin A of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-7839 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Insulin A (C-12) is recommended for detection of the Insulin A chain of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Insulin A (C-12) is also recommended for detection of the Insulin A chain in additional species, including equine, canine and porcine.

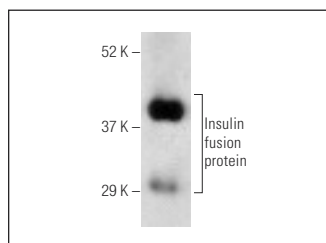
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

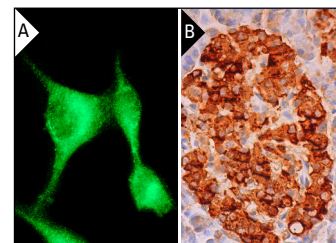
RESEARCH USE

For research use only, not for use in diagnostic procedures.

DATA



Insulin A (C-12): sc-7839. Western blot analysis of human recombinant Insulin fusion protein.



Insulin A (C-12): sc-7839. Immunofluorescence staining of methanol-fixed MIA PaCa-2 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans (B).

SELECT PRODUCT CITATIONS

1. Kataoka, K., et al. 2004. Differentially expressed Maf family transcription factors, c-Maf and MafA, activate Glucagon and Insulin gene expression in pancreatic islet α - and β -cells. *J. Mol. Endocrinol.* 32: 9-20.
2. Beeton, C., et al. 2006. Kv1.3 channels are a therapeutic target for T cell-mediated autoimmune diseases. *Proc. Natl. Acad. Sci. USA* 103: 17414-17419.
3. Tayaramma, T., et al. 2006. Chromatin-remodeling factors allow differentiation of bone marrow cells into Insulin-producing cells. *Stem Cells* 24: 2858-2867.
4. Peng, S.W., et al. 2009. Heterogeneity in mitotic activity and telomere length implies an important role of young islets in the maintenance of islet mass in the adult pancreas. *Endocrinology* 150: 3058-3066.
5. An, W., et al. 2010. Modulation of ghrelin O-acyltransferase expression in pancreatic islets. *Cell. Physiol. Biochem.* 26: 707-716.
6. de Carne Trecesson, S., et al. 2011. Escape from p21-mediated oncogene-induced senescence leads to cell dedifferentiation and dependence on anti-apoptotic Bcl-x_L and MCL1 proteins. *J. Biol. Chem.* 286: 12825-12838.
7. Wei, L., et al. 2011. Induction of diabetes with signs of autoimmunity in primates by the injection of multiple-low-dose streptozotocin. *Biochem. Biophys. Res. Commun.* 412: 373-378.
8. Liu, Z., et al. 2012. Different expression systems for production of recombinant proteins in *Saccharomyces cerevisiae*. *Biotechnol. Bioeng.* 109: 1259-1268.
9. Xiao, X., et al. 2013. No evidence for beta cell neogenesis in murine adult pancreas. *J. Clin. Invest.* 123: 2207-2217.

PROTOCOLS

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