

# Insulin B (C-12): sc-377071

## 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, proinsulin, 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 two 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.

## CHROMOSOMAL LOCATION

Genetic locus: INS (human) mapping to 11p15.5; Ins2 (mouse) mapping to 7 F5.

## SOURCE

Insulin B (C-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 33-69 near the N-terminus of Insulin B of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Insulin B (C-12) is available conjugated to agarose (sc-377071 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377071 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377071 PE), fluorescein (sc-377071 FITC), Alexa Fluor<sup>®</sup> 488 (sc-377071 AF488), Alexa Fluor<sup>®</sup> 546 (sc-377071 AF546), Alexa Fluor<sup>®</sup> 594 (sc-377071 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-377071 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-377071 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-377071 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Insulin B (C-12) is available conjugated to biotin (sc-377071 B), 200 µg/ml, for WB, IHC(P) and ELISA.

Blocking peptide available for competition studies, sc-377071 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

Insulin B (C-12) is recommended for detection of Insulin B chain of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

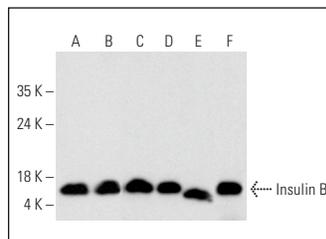
Insulin B (C-12) is also recommended for detection of Insulin B chain in additional species, including equine, canine, bovine and porcine.

Molecular Weight of Insulin B: 12 kDa.

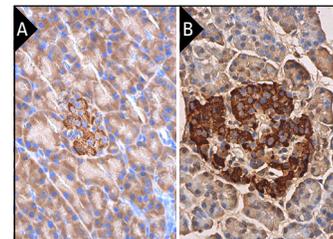
## STORAGE

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

## DATA



Insulin B (C-12) HRP: sc-377071 HRP. Direct western blot analysis of Insulin B expression in MIA PaCa-2 (A), CCRF-CEM (B), NCI-H460 (C), ZR-75-1 (D) and PANC-1 (E) whole cell lysates and human pancreas tissue extract (F).



Insulin B (C-12): sc-377071. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat pancreas tissue showing cytoplasmic staining of exocrine glandular cells and Islets of Langerhans (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells (B).

## SELECT PRODUCT CITATIONS

- Li, J.M., et al. 2013. Quercetin preserves  $\beta$ -cell mass and function in fructose-induced hyperinsulinemia through modulating pancreatic Akt/FoxO1 activation. *Evid. Based Complement. Alternat. Med.* 2013: 303902.
- Van Der Gugten, J.G., et al. 2016. Quantitation of Insulin analogues in serum using immunoaffinity extraction, liquid chromatography, and tandem mass spectrometry. *Methods Mol. Biol.* 1378: 119-130.
- Zhou, X., et al. 2017. RIP3 attenuates the pancreatic damage induced by deletion of ATG7. *Cell Death Dis.* 8: e2918.
- Zou, G., et al. 2018. MicroRNA-32 silences WWP2 expression to maintain the pluripotency of human amniotic epithelial stem cells and  $\beta$  islet-like cell differentiation. *Int. J. Mol. Med.* 41: 1983-1991.
- Okano, S., et al. 2019. Karyopherin  $\alpha$  2-expressing pancreatic duct glands and intra-islet ducts in aged diabetic C414A-mutant-CRY1 transgenic mice. *J. Diabetes Res.* 2019: 7234549.
- Takagaki, Y., et al. 2020. Endothelial autophagy deficiency induces IL6-dependent endothelial mesenchymal transition and organ fibrosis. *Autophagy* 16: 1905-1914.
- Bai, X.P., et al. 2021. Influence of liver cirrhosis on blood glucose, Insulin sensitivity and islet function in mice. *Am. J. Med. Sci.* 362: 403-417.
- Hawari, I., et al. 2022. Understanding the mechanism of diabetes mellitus in a LRBA-deficient patient. *Biology* 11: 612.
- Ding, L., et al. 2023. Zhx2 maintains islet  $\beta$ -cell mass and function by transcriptionally regulating Pax6. *iScience* 26: 106871.

## RESEARCH USE

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

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA