SANTA CRUZ BIOTECHNOLOGY, INC.

PDX-1 (B-11): sc-390792

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Pancreatic duodenal homeobox-1 protein (PDX-1), also designated Insulin promoter factor (IPF1), Insulin upstream factor 1 (IUF1), somatostatin *trans*-activating factor-1 (STF-1) and glucose-sensitive factor (GSF), is a 282 amino acid homeodomain-containing transcription factor present in pancreatic β-cells. PDX-1 is a key regulator of pancreatic islet development and Insulin gene transcription in β-cells. PDX-1 is expressed in all cells at the early stages of development and is mainly restricted to the pancreas and duodenum in adult. HNF-3β, HNF-1α and SP1 positively regulate the PDX-1 enhancer element. PDX-1 is also regulated by Glucagon-like peptide through activation of adenylyl cyclase, which results in an increase in intracellular cAMP activity. The increased levels of cAMP, and the resulting activation of PKA, lead to an increase in PDX-1 transcription and translocation of the protein to the nuclei of β-cells. PDX-1 binds to the sequence C(C/T) and can heterodimerize with PBX. PDX-1 is phosphorylated by the SAPK2 pathway under high glucose concentrations. Mutations in the PDX-1 gene can cause maturity-onset diabetes of the young and pancreatic agenesis. The gene which encodes PDX-1 maps to human chromosome 13q12.2.

CHROMOSOMAL LOCATION

Genetic locus: PDX1 (human) mapping to 13q12.2; Pdx1 (mouse) mapping to 5 G3.

SOURCE

PDX-1 (B-11) is a mouse monoclonal antibody raised against amino acids 1-140 (deletion 20-56) of PDX-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-390792 X, 200 µg/0.1 ml.

PDX-1 (B-11) is available conjugated to agarose (sc-390792 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390792 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390792 PE), fluorescein (sc-390792 FITC), Alexa Fluor® 488 (sc-390792 AF488), Alexa Fluor® 546 (sc-390792 AF546), Alexa Fluor® 594 (sc-390792 AF594) or Alexa Fluor® 647 (sc-390792 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390792 AF680) or Alexa Fluor® 790 (sc-390792 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

PDX-1 (B-11) is recommended for detection of PDX-1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PDX-1 (B-11) is also recommended for detection of PDX-1 in additional species, including canine, bovine and porcine.

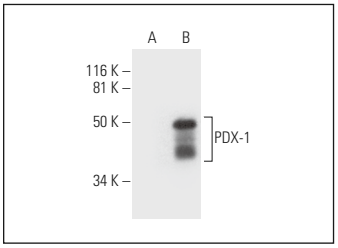
Suitable for use as control antibody for PDX-1 siRNA (h): sc-38760, PDX-1 siRNA (m): sc-38761, PDX-1 siRNA (r): sc-108040, PDX-1 shRNA Plasmid (h): sc-38760-SH, PDX-1 shRNA Plasmid (m): sc-38761-SH, PDX-1 shRNA Plasmid (r): sc-108040-SH, PDX-1 shRNA (h) Lentiviral Particles: sc-38760-V, PDX-1 shRNA (m) Lentiviral Particles: sc-38761-V and PDX-1 shRNA (r) Lentiviral Particles: sc-108040-V.

PDX-1 (B-11) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of PDX-1: 46 kDa.

Positive Controls: PDX-1 (h): 293T Lysate: sc-129445.

DATA



PDX-1 (B-11): sc-390792. Western blot analysis of PDX-1 expression in non-transfected: sc-117752 (**A**) and human PDX-1 transfected: sc-129445 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Van Pham, P., et al. 2014. Improved differentiation of umbilical cord blood-derived mesenchymal stem cells into Insulin-producing cells by PDX-1 mRNA transfection. Differentiation 87: 200-208.
2. Duan, J., et al. 2022. Swietenine and swietenolide from *Swietenia macrophylla* king improve Insulin secretion and attenuate apoptosis in H_2O_2 induced INS-1 cells. Environ. Toxicol. 37: 2780-2792.
3. Ding, L., et al. 2023. Zhx2 maintains islet β-cell mass and function by transcriptionally regulating Pax6. iScience 26: 106871.
4. Ding, L., et al. 2024. β-cell Tipe1 orchestrates insulin secretion and cell proliferation by promoting $G_{\alpha s}$/cAMP signaling via USP5. Adv. Sci. 11: e2304940.

RESEARCH USE

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