

PDX-1 (E-5): sc-390808

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-3b, HNF-1a 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 (E-5) 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 μ g IgG_{2b} 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-390808 X, 200 μ g/0.1 ml.

APPLICATIONS

PDX-1 (E-5) 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 μ g per 100-500 μ g 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 (E-5) 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.

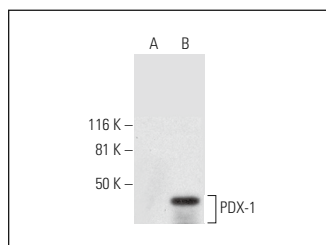
PDX-1 (E-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of PDX-1: 46 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PDX-1 (E-5): sc-390808. 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

- Pettinato, G., et al. 2014. Formation of well-defined embryoid bodies from dissociated human induced pluripotent stem cells using microfabricated cell-repellent microwell arrays. *Sci. Rep.* 4: 7402.
- Zheng, Y.C., et al. 2016. Comparison of regulation mechanisms of five mulberry ingredients on Insulin secretion under oxidative stress. *J. Agric. Food Chem.* 64: 8763-8772.
- Liu, S.N., et al. 2020. The Chinese patent medicine, Jin-tang-ning, ameliorates hyperglycemia through improving β cell function in pre-diabetic KKAY mice. *Chin. J. Nat. Med.* 18: 827-836.

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.



See **PDX-1 (B-11): sc-390792** for PDX-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.