

PDX-1 (A-17): sc-14664

BACKGROUND

Pancreatic duodenal homeobox-1 protein (PDX-1), also designated Insulin promoter factor (IPF1), Insulin upstream factor 1 (IUF1), somatostatin transactivating 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-3 β , HNF-1 α 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 (A-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PDX-1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-14664 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-14664 X, 200 μ g/0.1 ml.

APPLICATIONS

PDX-1 (A-17) is recommended for detection of PDX-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

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

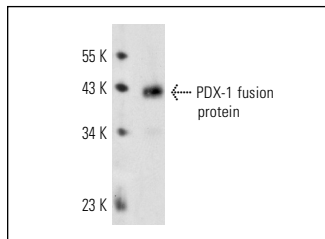
PDX-1 (A-17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of PDX-1: 46 kDa.

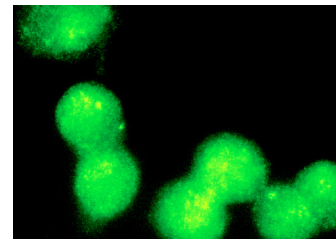
STORAGE

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

DATA



PDX-1 (A-17): sc-14664. Western blot analysis of human recombinant PDX-1 fusion protein.



PDX-1 (A-17): sc-14664. Immunofluorescence staining of methanol-fixed MIA PaCa-2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Iguchi, H., et al. 2005. Sox-6 attenuates glucose-stimulated Insulin secretion by repressing PDX-1 transcriptional activity and is down-regulated in hyperInsulinemic obese mice. *J. Biol. Chem.* 280: 37669-37680.
2. Imai, J., et al. 2005. Constitutively active PDX1 induced efficient Insulin production in adult murine liver. *Biochem. Biophys. Res. Commun.* 326: 402-409.
3. Wu, P., et al. 2010. The relationship between GPR40 and lipotoxicity of the pancreatic β -cells as well as the effect of pioglitazone. *Biochem. Biophys. Res. Commun.* 403: 36-39.
4. Fujimoto, K., et al. 2010. Targeting cyclophilin D and the mitochondrial permeability transition enhances β -cell survival and prevents diabetes in Pdx1 deficiency. *Proc. Natl. Acad. Sci. USA* 107: 10214-10219.
5. Fujimoto, K., et al. 2010. Loss of Nix in Pdx1-deficient mice prevents apoptotic and necrotic β cell death and diabetes. *J. Clin. Invest.* 120: 4031-4039.
6. von Burstin, J., et al. 2010. The pancreatic and duodenal homeobox protein PDX-1 regulates the ductal specific keratin 19 through the degradation of MEIS1 and DNA binding. *PLoS ONE* 5: e12311.
7. Reichert, M., et al. 2013. The Prrx1 homeodomain transcription factor plays a central role in pancreatic regeneration and carcinogenesis. *Genes Dev.* 27: 288-300.

RESEARCH USE

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



Try **PDX-1 (B-11): sc-390792** or **PDX-1 (E-5): sc-390808**, our highly recommended monoclonal alternatives to PDX-1 (A-17). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **PDX-1 (B-11): sc-390792**.