

PTF1 (G-17): sc-69318

BACKGROUND

PTF1, also known as PTF1A (pancreas specific transcription factor, 1A) or PTF1-p48, is a pancreas-specific protein that functions as a component of the trimeric pancreas transcription factor 1 (PTF1) complex. Localizing to the nucleus, PTF1 contains one basic helix-loop-helix (bHLH) domain and is believed to play an important role in mammalian pancreatic development, functioning as a transcription factor that regulates the specification of all three pancreatic cell types. PTF1 interacts with RBP-J κ and, together, they cooperate in regulating the expression of PDX-1 (pancreas/duodenum homeobox protein 1), a key regulator of pancreatic islet development and Insulin gene transcription in β -cells. Loss of functional PTF1 can cause pancreatic progenitors to take on the normal fates of duodenal epithelia. Mutations in the gene encoding PTF1 lead to diabetes mellitus and cerebellar hypoplasia/agenesis, suggesting that PTF1 also plays an important role in cerebellar neurogenesis.

REFERENCES

- Krapp, A., et al. 1998. The bHLH protein PTF1-p48 is essential for the formation of the exocrine and the correct spatial organization of the endocrine pancreas. *Genes Dev.* 12: 3752-3763.
- Kawaguchi, Y., et al. 2002. The role of the transcriptional regulator Ptf1a in converting intestinal to pancreatic progenitors. *Nat. Genet.* 32: 128-134.
- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607194. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Miyatsuka, T., et al. 2007. Ptf1a and RBP-J cooperate in activating Pdx1 gene expression through binding to Area III. *Biochem. Biophys. Res. Commun.* 362: 905-909.
- Masui, T., et al. 2007. Early pancreatic development requires the vertebrate Suppressor of Hairless (RBPJ) in the PTF1 bHLH complex. *Genes Dev.* 21: 2629-2643.
- Yamada, M., et al. 2007. Origin of climbing fiber neurons and their developmental dependence on Ptf1a. *J. Neurosci.* 27: 10924-10934.
- Burlison, J.S., et al. 2008. Pdx-1 and Ptf1a concurrently determine fate specification of pancreatic multipotent progenitor cells. *Dev. Biol.* 316: 74-86.
- Boije, H., et al. 2008. Temporal and spatial expression of transcription factors FoxN4, Ptf1a, Prox1, Isl1 and Lim1 mRNA in the developing chick retina. *Gene Expr. Patterns* 8: 117-123.
- Hald, J., et al. 2008. Generation and characterization of Ptf1a antiserum and localization of Ptf1a in relation to Nkx6.1 and Pdx1 during the earliest stages of mouse pancreas development. *J. Histochem. Cytochem.* 56: 587-595.

CHROMOSOMAL LOCATION

Genetic locus: PTF1A (human) mapping to 10p12.2; Ptf1a (mouse) mapping to 2 A3.

SOURCE

PTF1 (G-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PTF1 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-69318 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-69318 X, 200 μ g/0.1 ml.

APPLICATIONS

PTF1 (G-17) is recommended for detection of PTF1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

PTF1 (G-17) is also recommended for detection of PTF1 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for PTF1 siRNA (h): sc-76285, PTF1 siRNA (m): sc-76286, PTF1 shRNA Plasmid (h): sc-76285-SH, PTF1 shRNA Plasmid (m): sc-76286-SH, PTF1 shRNA (h) Lentiviral Particles: sc-76285-V and PTF1 shRNA (m) Lentiviral Particles: sc-76286-V.

PTF1 (G-17) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of PTF1: 42 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

STORAGE

Store at 4 $^{\circ}$ 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.

PROTOCOLS

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