SANTA CRUZ BIOTECHNOLOGY, INC.

PTF1 (A-3): sc-393148

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-Jκ 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 and important role in cerebellar neurogenesis.

REFERENCES

1. 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.
2. Kawaguchi, Y., et al. 2002. The role of the transcriptional regulator PTF1A in converting intestinal to pancreatic progenitors. Nat. Genet. 32: 128-134.
3. 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/
4. 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.
5. Yamada, M., et al. 2007. Origin of climbing fiber neurons and their developmental dependence on PTF1A. J. Neurosci. 27: 10924-10934.

CHROMOSOMAL LOCATION

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

SOURCE

PTF1 (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 291-328 at the C-terminus of PTF1 of human origin.

PRODUCT

Each vial contains 200 µg IgM 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-393148 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-393148 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

PTF1 (A-3) is recommended for detection of PTF1 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).

PTF1 (A-3) is also recommended for detection of PTF1 in additional species, including canine 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 (A-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

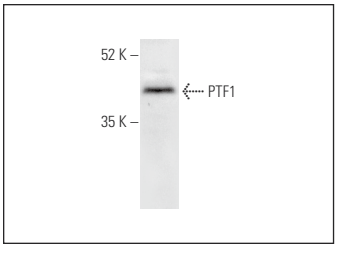
Molecular Weight of PTF1: 42 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285.

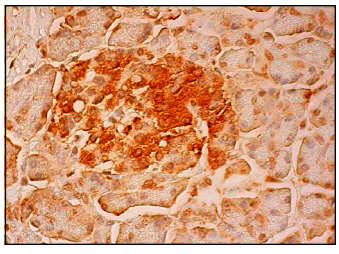
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PTF1 (A-3): sc-393148. Western blot analysis of PTF1 expression in MIA PaCa-2 whole cell lysate.



PTF1 (A-3): sc-393148. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear and cytoplasmic staining of exocrine glandular cells and Islet of Langerhans.

STORAGE

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