SANTA CRUZ BIOTECHNOLOGY, INC.

PINX1 (A-9): sc-376588

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The Power to Question

BACKGROUND

PINX1 (PIN2/TRF1-interacting protein X1), also known as LPTL or LPTS (liver-related putative tumor suppressor), is a ubiquitously expressed protein that localizes to nucleoli and telomere speckles. PINX1 contains one G-patch domain and one telomeric inhibiting domain (TID) at its C-terminus. PINX1 interacts with the telomere protein TRF1 and the telomerase reverse transcriptase TERT. The TID domain of PINX1 specifically interacts with TERT and functions to inhibit its activity, thus participating in the regulation of telomerase activity. Overexpression of PINX1 leads to shortened telomeres, further supporting an inhibitory role of PINX1 on telomerase activity. The depletion of PINX1 significantly increases telomerase activity and may lead to tumorigenicity of cancer cells. This suggests that PINX1 acts as a tumor suppressor and can inhibit cell proliferation. In addition, PINX1 is involved in nucleolar RNA maturation.

REFERENCES

1. Zhou, X.Z., et al. 2001. The PIN2/TRF1-interacting protein PINX1 is a potent telomerase inhibitor. Cell 107: 347-359.
2. Guglielmi, B., et al. 2002. The yeast homolog of human PINX1 is involved in rRNA and small nucleolar RNA maturation, not in telomere elongation inhibition. J. Biol. Chem. 277: 35712-35719.
3. Banik, S.S., et al. 2004. Characterization of interactions between PINX1 and human telomerase subunits hTERT and hTR. J. Biol. Chem. 279: 51745-51748.
4. Hawkins, G.A., et al. 2004. Mutational analysis of PINX1 in hereditary prostate cancer. Prostate 60: 298-302.
5. Akiyama, Y., et al. 2004. Human PINX1, a potent telomerase inhibitor, is not involved in human gastrointestinal tract carcinoma. Oncol. Rep. 11: 871-874.
6. Kondo, T., et al. 2005. Loss of heterozygosity and histone hypoacetylation of the PINX1 gene are associated with reduced expression in gastric carcinoma. Oncogene 24: 157-164.
7. Campbell, L.J., et al. 2006. hTERT, the catalytic component of telomerase, is downregulated in the haematopoietic stem cells of patients with chronic myeloid leukaemia. Leukemia 20: 671-679.
8. Herrmann, G., et al. 2007. Conserved interactions of the splicing factor NTR1/SPP382 with proteins involved in DNA double-strand break repair and telomere metabolism. Nucleic Acids Res. 35: 2321-2332.
9. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 606505. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: PINX1 (human) mapping to 8p23.1; Pinx1 (mouse) mapping to 14 D1.

SOURCE

PINX1 (A-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 8-29 at the N-terminus of PINX1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376588 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

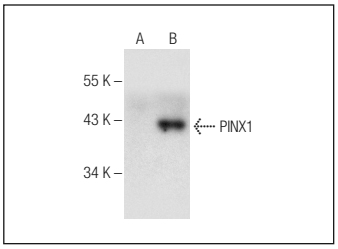
PINX1 (A-9) is recommended for detection of PINX1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PINX1 siRNA (h): sc-62814, PINX1 siRNA (m): sc-62815, PINX1 shRNA Plasmid (h): sc-62814-SH, PINX1 shRNA Plasmid (m): sc-62815-SH, PINX1 shRNA (h) Lentiviral Particles: sc-62814-V and PINX1 shRNA (m) Lentiviral Particles: sc-62815-V.

Molecular Weight of PINX1: 45 kDa.

Positive Controls: PINX1 (h): 293 Lysate: sc-113229, Jurkat nuclear extract: sc-2132 or A-431 nuclear extract: sc-2122.

DATA



PINX1 (A-9): sc-376588. Western blot analysis of PINX1 expression in non-transfected: sc-110760 (**A**) and human PINX1 transfected: sc-113229 (**B**) 293 whole cell lysates.

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.

PROTOCOLS

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