SANTA CRUZ BIOTECHNOLOGY, INC.

PRPK (B-7): sc-514582

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

p53, a DNA-binding, oligomerization domain- and transcription activation domain-containing tumor suppressor, upregulates growth arrest and apoptosis-related genes in response to stress signals, thereby influencing programmed cell death, cell differentiation and cell cycle control mechanisms. PRPK (p53-related protein kinase), also known as TP53RK, is a 253 amino acid protein kinase that phosphorylates Ser15 of p53. PRPK phosphorylation of p53 causes increased stabilization and activity of p53. CGI-121 may act as an inhibitor of the PRPK-p53 interaction, thus preventing the phosphorylation of p53. Unphosphorylated p53 is degraded by the ubiquitin-proteasome pathway, which may ultimately lead to cell proliferation. PRPK contains a protein kinase domain with a conserved catalytic core. PRPK is localized to the nucleus of the cell and is highly expressed in testis, with lower expression in heart, kidney and spleen.

REFERENCES

1. Abe, Y., et al. 2001. Cloning and characterization of a p53-related protein kinase expressed in interleukin-2-activated cytotoxic T cells, epithelial tumor cell lines, and the testes. J. Biol. Chem. 276: 44003-44011.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608679. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Facchin, S., et al. 2003. Functional homology between yeast piD261/BUD32 and human PRPK: both phosphorylate p53 and PRPK partially complements piD261/Bud32 deficiency. FEBS Lett. 549: 63-66.
4. Miyoshi, A., et al. 2003. Identification of CGI-121, a novel PRPK (p53-related protein kinase)-binding protein. Biochem. Biophys. Res. Commun. 303: 399-405.
5. Abe, Y., et al. 2006. A Small Ras-like protein Ray/Rab1c modulates the p53-regulating activity of PRPK. Biochem. Biophys. Res. Commun. 344: 377-385.
6. Facchin, S., et al. 2007. Phosphorylation and activation of the atypical kinase p53-related protein kinase (PRPK) by Akt/PKB. Cell. Mol. Life Sci. 64: 2680-2689.

CHROMOSOMAL LOCATION

Genetic locus: TP53RK (human) mapping to 20q13.12.

SOURCE

PRPK (B-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 233-250 at the C-terminus of PRPK of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514582 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PRPK (B-7) is recommended for detection of PRPK of 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 PRPK siRNA (h): sc-76259, PRPK shRNA Plasmid (h): sc-76259-SH and PRPK shRNA (h) Lentiviral Particles: sc-76259-V.

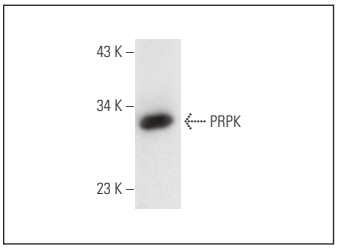
Molecular Weight of PRPK: 28 kDa.

Positive Controls: human heart extract: sc-363763.

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 A/G PLUS-Agarose: sc-2003 (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.

DATA



PRPK (B-7): sc-514582. Western blot analysis of PRPK expression in human heart tissue extract.

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.