SANTA CRUZ BIOTECHNOLOGY, INC.

BPNT1 (C-12): sc-393185

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

BPNT1 (3'(2'), 5'-bisphosphate nucleotidase 1), also known as BPntase, PAP phosphatase or PIP (PAP-inositol-1,4-phosphatase), is a member of the magnesium-dependent, lithium-sensitive phosphomonoesterase superfamily. Using magnesium as a cofactor, BPNT1 catalyzes the conversion of PAPS (adenosine 3'-phosphate 5' phosphosulfate) to APS (adenosine 5'-phosphosulfate) and the conversion of PAP (3'(2')-phosphoadenosine 5' phosphate) to AMP (adenosine 5'-phosphate). Expressed ubiquitously with highest levels in brain and kidney, BPNT1 is potently inhibited by lithium, a drug used for the treatment of manic depression and bipolar affective disorder, suggesting a possible role for BPNT1 in the etiology of mood disorders. Inhibition of BPNT1 leads to an accumulation of PAP and subsequent inhibition of sulfotransferases which may result in changes in gene expression, changes in phosphatidylinositol second messenger function and/or changes in sulfation processes.

REFERENCES

1. Alexander, J.R., et al. 1995. Frequency of positive family history in bipolar patients in a catchment-area population. Prog. Neuropsychopharmacol. Biol. Psychiatry 19: 367-373.
2. Spiegelberg, B.D., et al. 1999. Cloning and characterization of a mammalian lithium-sensitive bisphosphate 3'-nucleotidase inhibited by inositol 1,4-bisphosphate. J. Biol. Chem. 274: 13619-13628.
3. Shaltiel, G., et al. 2002. 3'(2')-phosphoadenosine 5'-phosphate phosphatase is reduced in postmortem frontal cortex of bipolar patients. Bipolar Disord. 4: 302-306.

CHROMOSOMAL LOCATION

Genetic locus: BPNT1 (human) mapping to 1q41; Bpnt1 (mouse) mapping to 1 H5.

SOURCE

BPNT1 (C-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 64-89 within an internal region of BPNT1 of human origin.

PRODUCT

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

BPNT1 (C-12) is available conjugated to agarose (sc-393185 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393185 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393185 PE), fluorescein (sc-393185 FITC), Alexa Fluor® 488 (sc-393185 AF488), Alexa Fluor® 546 (sc-393185 AF546), Alexa Fluor® 594 (sc-393185 AF594) or Alexa Fluor® 647 (sc-393185 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393185 AF680) or Alexa Fluor® 790 (sc-393185 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393185 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

BPNT1 (C-12) is recommended for detection of BPNT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 BPNT1 siRNA (h): sc-88049, BPNT1 siRNA (m): sc-105125, BPNT1 shRNA Plasmid (h): sc-88049-SH, BPNT1 shRNA Plasmid (m): sc-105125-SH, BPNT1 shRNA (h) Lentiviral Particles: sc-88049-V and BPNT1 shRNA (m) Lentiviral Particles: sc-105125-V.

Molecular Weight (predicted) of BPNT1 isoforms: 33/36 kDa.

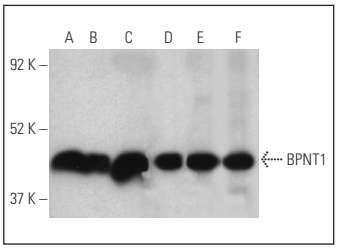
Molecular Weight (observed) of BPNT1: 37/43 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, Caki-1 cell lysate: sc-2224 or Jurkat whole cell lysate: sc-2204.

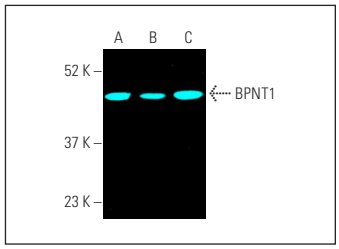
RECOMMENDED SUPPORT REAGENTS

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



BPNT1 (C-12): sc-393185. Western blot analysis of BPNT1 expression in Caki-1 (**A**), HeLa (**B**), KNRK (**C**) and Jurkat (**D**) whole cell lysates and human kidney (**E**) and rat liver (**F**) tissue extracts. Detection reagent used: m-IgG_1 BP-HRP: sc-525408.



BPNT1 (C-12): sc-393185. Fluorescent western blot analysis of BPNT1 expression in Jurkat (**A**) and Caki-1 (**B**) whole cell lysates and human kidney tissue extract (**C**). Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_1 BP-CFL 647: sc-533664.

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.