SANTA CRUZ BIOTECHNOLOGY, INC.

PP2A-Cα (h): 293T Lysate: sc-114598

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In eukaryotes, the phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions, including division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the protein phosphatases. In general, the protein phosphatase (PP) holoenzyme is a trimeric complex composed of a regulatory subunit, a variable subunit, and a catalytic subunit. Four major families of protein phosphatase catalytic subunits have been identified, designated PP1, PP2A, PP2B (calcineurin) and PP2C. Characteristic of the protein phosphatase complexes, the PP2A phosphatase core enzyme is composed of a regulatory subunit and a catalytic subunit, the latter of which exists as two isoforms, designated PP2Aα and PP2Aβ. The multiple subunits of PP2A work in concert to regulate a variety of metabolic pathways, including transcription, translation, cell cycle progression and oncogenic transformation.

REFERENCES

1. Strack, S., Ruediger, R., Walter, G., Dagda, R.K., Barwacz, C.A. and Cribbs, J.T. 2002. Protein phosphatase 2A holoenzyme assembly: identification of contacts between B-family regulatory and scaffolding A subunits. J. Biol. Chem. 277: 20750-20755.
2. Avdi, N.J., Malcolm, K.C., Nick, J.A. and Worthen, G.S. 2002. A role for protein phosphatase-2A in p38 mitogen-activated protein kinase-mediated regulation of the c-Jun NH_2-terminal kinase pathway in human neutrophils. J. Biol. Chem. 277: 40687-40696.
3. Zhou, J., Pham, H.T., Ruediger, R. and Walter, G. 2003. Characterization of the Aα and Aβ subunit isoforms of protein phosphatase 2A: differences in expression, subunit interaction, and evolution. Biochem. J. 369: 387-398.
4. Shern, J.F., Sharer, J.D., Pallas, D.C., Bartolini, F., Cowan, N.J., Reed, M.S., Pohl, J. and Kahn, R.A. 2003. Cytosolic ARL2 is complexed with cofactor D and protein phosphatase 2A. J. Biol. Chem. 278: 40829-40836.
5. Prickett, T.D. and Brautigan, D.L. 2004. Overlapping binding sites in protein phosphatase 2A for association with regulatory A and α-4 (MTAP42) subunits. J. Biol. Chem. 279: 38912-38920.
6. Gergs, U., Boknik, P., Buchwalow, I., Fabritz, L., Matus, M., Justus, I., Hanske, G., Schmitz, W. and Neumann, J. 2004. Overexpression of the catalytic subunit of protein phosphatase 2A impairs cardiac function. J. Biol. Chem. 279: 40827-40834.
7. Avci, C.B., Sahin, F., Gunduz, C., Selvi, N., Aydin, H.H., Oktem, G., Topcuoglu, N. and Saydam, G. 2007. Protein phosphatase 2A (PP2A) has a potential role in CAPE-induced apoptosis of CCRF-CEM cells via effecting human telomerase reverse transcriptase activity. Hematology 12: 519-525.
8. Sun, L., Gao, J., Dong, X., Liu, M., Li, D., Shi, X., Dong, J.T., Lu, X., Liu, C. and Zhou, J. 2008. EB1 promotes Aurora-B kinase activity through blocking its inactivation by protein phosphatase 2A. Proc. Natl. Acad. Sci. USA 105: 7153-7158.
9. Zhao, B., Sun, L., Haas, M., Denenberg, A.G., Wong, H.R. and Shanley, T.P. 2008. PP2A regulates upstream members of the c-jun N-terminal kinase mitogen-activated protein kinase signaling pathway. Shock 29: 181-188.

CHROMOSOMAL LOCATION

Genetic locus: PPP2CA (human) mapping to 5q31.1.

PRODUCT

PP2A-Cα (h): 293T Lysate represents a lysate of human PP2A-Cα transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

PP2A-Cα (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive PP2A-Cα antibodies. Recommended use: 10-20 µl per lane.

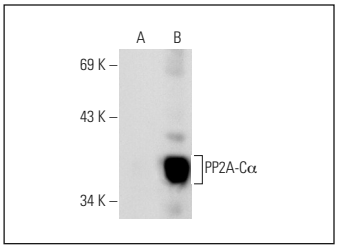
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PP2A-Cα/β (G-4): sc-166034 is recommended as a positive control antibody for Western Blot analysis of enhanced human PP2A-Cα expression in PP2A-Cα transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

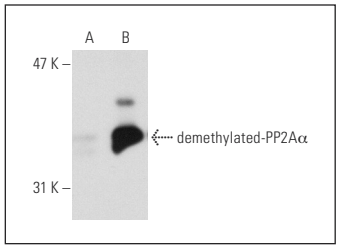
RECOMMENDED SUPPORT REAGENTS

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.

DATA



PP2A-Cα/β (G-4): sc-166034. Western blot analysis of PP2A-Cα expression in non-transfected: sc-117752 (**A**) and human PP2A-Cα transfected: sc-114598 (**B**) 293T whole cell lysates.



demethylated-PP2A-C (4B7): sc-13601. Western blot analysis of demethylated-PP2Aα expression in non-transfected: sc-117752 (**A**) and demethylated-PP2Aα transfected: sc-114598 (**B**) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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.