SANTA CRUZ BIOTECHNOLOGY, INC.

PP2A-B55γ (OS-5): sc-100417

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. The PP2A family comprises subfamily members PP2Aα and PP2Aβ. The PP2A catalytic subunit associates with a variety of regulatory subunits. PP2A-B55γ, also known as PPP2R2C, PR52, PR55G, IMYPNO or IMYPNO1, is one such regulatory subunit. It is the γ isoform of the B55 (or B1) regulatory subunit subfamily that belongs to the B family of regulatory subunits. The B subunit family is believed to participate in substrate specificity and catalytic activity.

REFERENCES

1. McCright, B., et al. 1996. The B56 family of protein phosphatase 2A (PP2A) regulatory subunits encodes differentiation-induced phosphoproteins that target PP2A to both nucleus and cytoplasm. J. Biol. Chem. 271: 22081-22089.
2. Turowski, P., et al. 1999. Vimentin dephosphorylation by protein phophatase 2A is modulated by the targeting subunit B55. Mol. Biol. Cell 10: 1997-2015.
3. Hrimech, M., et al. 2000. Human immunodeficiency virus type 1 Vpr-mediated G_2 cell cycle arrest: Vpr interferes with cell cycle signaling cascades by interacting with the B subunit of serine/threonine protein phosphatase 2A. EMBO J. 19: 3956-3967.
4. Hu, P., et al. 2000. Molecular cloning and mapping of the brain-abundant B1γ subunit of protein phosphatase 2A, PPP2R2C, to human chromosome 4p16. Genomics 67: 83-86.
5. Guo, C.Y., et al. 2002. ATM-dependent dissociation of B55 regulatory subunit from nuclear PP2A in response to ionizing radiation. J. Biol. Chem. 277: 4839-4844.
6. Campbell, E.M., et al. 2003. Fine mapping a quantitative trait locus affecting ovulation rate in swine on chromosome 8. J. Anim. Sci. 81: 1706-1714.

CHROMOSOMAL LOCATION

Genetic locus: PPP2R2C (human) mapping to 4p16.1, Ppp2r2c (mouse) mapping to 5 B3.

SOURCE

PP2A-B55γ (OS-5) is a mouse monoclonal antibody raised against recombinant PP2A-B55γ of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PP2A-B55-γ (OS-5) is recommended for detection of PP2A-B55-γ 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PP2A-B55-γ siRNA (h): sc-39189, PP2A-B55-γ siRNA (m): sc-39190, PP2A-B55-γ shRNA Plasmid (h): sc-39189-SH, PP2A-B55-γ shRNA Plasmid (m): sc-39190-SH, PP2A-B55-γ shRNA (h) Lentiviral Particles: sc-39189-V and PP2A-B55-γ shRNA (m) Lentiviral Particles: sc-39190-V.

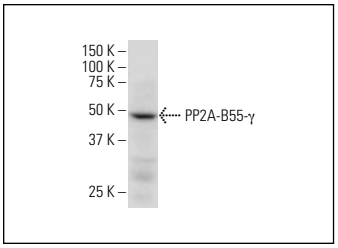
Molecular Weight of PP2A-B55γ: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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).

DATA



PP2A-B55-γ (OS-5): sc-100417. Western blot analysis of PP2A-B55-γ expression in HeLa whole cell lysate.

SELECT PRODUCT CITATIONS

1. Li, Y.N., et al. 2015. The association between salt-inducible kinase 2 (SIK2) and γ isoform of the regulatory subunit B55 of PP2A (B55γ) contributes to the survival of glioma cells under glucose depletion through inhibiting the phosphorylation of S6K. Cancer Cell Int. 15: 21.
2. Leong, W., et al. 2020. PP2A subunit PPP2R2C is downregulated in the brains of Alzheimer's transgenic mice. Aging 12: 6880-6890.

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.