

PAP-2a (R-16): sc-51394

BACKGROUND

PAP-2 (phosphatidic acid phosphatase 2), also known as lipid phosphate phosphohydrolase (LPP), is a family of integral membrane glycoproteins that dephosphorylate a variety of lipid phosphates and play a role in signal transduction via the phospholipase D pathway. PAP-2 proteins function independently of Mg²⁺ and are insensitive to NEM (N-ethylmaleimide) inhibition. The lipid phosphates degraded by this family include ceramide 1-phosphate (C1P), sphingosine 1-phosphate (S1P), phosphatidic acid (PA) and lysophosphatidic acid (LPA). There are three PAP-2 isozymes: PAP-2a, PAP-2b and PAP-2c (also known as LPP1, LPP3 and LPP2 respectively). PAP-2a and PAP-2b are ubiquitously expressed and most effectively hydrolyze PA and LPA. PAP-2c is predominantly expressed in human brain, placenta and pancreas, and in mouse liver, lung and kidney. PAP-2c most effectively hydrolyzes LPA and S1P and may function as a cell cycle regulator.

REFERENCES

1. Roberts, R., Sciorra, V.A. and Morris, A.J. 1998. Human type 2 phosphatidic acid phosphohydrolases. Substrate specificity of the type 2a, 2b, and 2c enzymes and cell surface activity of the 2a isoform. *J. Biol. Chem.* 273: 22059-22067.
2. Nanjundan, M. and Possmayer, F. 2000. Characterization of the pulmonary N-ethylmaleimide-insensitive phosphatidate phosphohydrolase. *Exp. Lung Res.* 26: 361-381.
3. Pasquaré, S.J., Ilincheta de Boschero, M.G. and Giusto, N.M. 2001. Aging promotes a different phosphatidic acid utilization in cytosolic and microsomal fractions from brain and liver. *Exp. Gerontol.* 36: 1387-1401.
4. Simon, M.F., Rey, A., Castan-Laurel, I., Grés, S., Sibrac, D., Valet, P. and Saulnier-Blache, J.S. 2002. Expression of ectolipid phosphate phosphohydrolases in 3T3F442A preadipocytes and adipocytes. Involvement in the control of lysophosphatidic acid production. *J. Biol. Chem.* 277: 23131-23136.
5. Jia, Y.J., Kai, M., Wada, I., Sakane, F. and Kanoh, H. 2003. Differential localization of lipid phosphate phosphatases 1 and 3 to cell surface subdomains in polarized MDCK cells. *FEBS Lett.* 552: 240-246.

CHROMOSOMAL LOCATION

Genetic locus: Ppap2a (rat) mapping to 2q14.

SOURCE

PAP-2a (R-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of PAP-2a of rat origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-51394 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PAP-2a (R-16) is recommended for detection of PAP-2a of 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 PAP-2a siRNA (h): sc-106879, PAP-2a shRNA Plasmid (h): sc-106879-SH and PAP-2a shRNA (h) Lentiviral Particles: sc-106879-V.

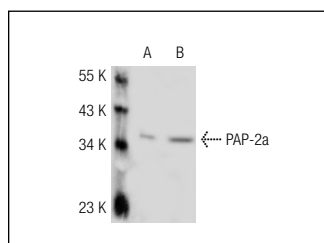
Molecular Weight of PAP-2a: 33 kDa.

Positive Controls: PAP-2a (h): 293T Lysate: sc-115817.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PAP-2a (R-16): sc-51394. Western blot analysis of PAP-2a expression in non-transfected: sc-117512 (A) and human PAP-2a transfected: sc-115817 (B) 293T 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.