

Lysophospholipid Phosphatase (LPP) 3. Rabbit Polyclonal Antibody , Human

BACKGROUND

Phosphatidic acid phosphatase type 2 (PAP2) was originally identified as a plasma membrane enzyme that catalyses the dephosphorylation of the putative second messenger, phosphatidic acid (PA) to diacylglycerol (DG) [1]. Subsequently, multiple isoforms of PAP2 were cloned [2-5]. It was found that these enzymes dephosphorylate a number of lipid phosphates *in vitro* other than PA, including the potent bioactive lipids, lysophosphatidic acid (LPA) and sphingosine 1-phosphate (S1P). Therefore, they have been renamed lipid phosphate phosphatases (LPPs). Currently, there are four members of this family called LPP1, LPP1a, LPP2 and LPP3 [6].

S1P [7] and LPA [8] regulate the proliferation, differentiation, apoptosis and migration of cells by binding to a family of G protein-coupled receptors. Thus, EDG1/S1P1, EDG3/S1P3, EDG5/S1P2/AGR16/H218, EDG6/S1P4 and EDG8/S1P5/nrg-1 are high affinity S1P receptors [7] whereas EDG2/LPA1, EDG4/LPA2 and EDG7/LPA3 have high affinity for LPA [8].

Recently, the over-expression of LPP1 was shown to limit LPA-stimulated signalling in Rat2 fibroblasts [9] and LPA-stimulated DNA synthesis in HEK 293 cells [10]. Similarly, over-expression of LPP1, LPP1a and LPP2 attenuate S1P-signalling to the p42/p44 mitogen activated protein kinase cascade [11].

ORDERING INFORMATION

CATALOG NUMBER
X1529P

SIZE
100 µg

FORM
Unconjugated

HOST/CLONE
Rabbit

FORMULATION
Provided as solution in phosphate buffered saline with 0.08% sodium azide

CONCENTRATION
1 mg/ml

ISOTYPE
IgG

APPLICATIONS
Western Blot

SPECIES REACTIVITY

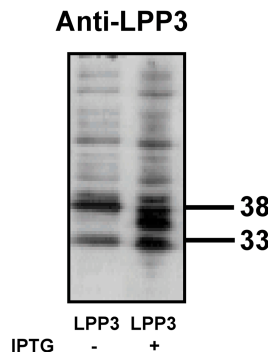
Human

IMMUNOGEN

Unique peptide derived from the human lysophospholipid phosphatase 3 protein.

Legend:

Western blot analysis using LPP3 antibody on bacterially expressed LPP3 protein when untreated (-) and treated with 0.1 mM IPTG (isopropyl-beta-D-thiogalactopyranoside) (+) at a dilution of 10 µg/ml.



For research use only. Not for use in human diagnostics or therapeutics.

POSITIVE CONTROL/TISSUE EXPRESSION

Transfected HEK-293 cells

COMMENTS

This antibody can be used for Western blotting (10-15 $\mu\text{g/ml}$). Optimal concentration should be evaluated by serial dilutions.

SHIP CONDITIONS

Ship at ambient temperature, freeze upon arrival

STORAGE CUSTOMER

Product should be stored at -20°C . Aliquot to avoid freeze/thaw cycles

STABILITY

Products are stable for one year from purchase when stored properly

REFERENCES

1. Jamal, Z., et al. (1991) Plasma membrane fractions from rat liver contain a phosphatidate phosphohydrolase distinct from that in the endoplasmic reticulum and cytosol. *J. Biol. Chem.* **266**, 2988-2996.
2. Kai, M., et al. (1997) Cloning and characterisation of two human isozymes of Mg^{2+} -independent phosphatidic acid phosphatase. *J. Biol. Chem.* **272**, 24572-24578.
3. Roberts, R., et al. (1998) Human type 2 phosphatidic phosphohydrolases. Substrate specificity of the type 2a, 2b and 2c enzymes and cell surface activity of the 2a isoforms. *J. Biol. Chem.* **273**, 22059-22067.
4. Leung, D.W., et al. (1998) Molecular cloning of two alternatively spliced forms of human phosphatidic acid phosphatase cDNAs that are differentially expressed in normal and tumor cells. *DNA Cell. Biol.* **17**, 377-385.
5. Tate, R.J., et al. (1999) Molecular cloning of magnesium-independent type 2 phosphatidic acid phosphatases from airway smooth muscle. *Cell. Signal.* **11**, 515-522.
6. Brindley, D.N & Waggoner, D.W. (1998) Mammalian lipid phosphate phosphohydrolases. *J. Biol. Chem.* **273**, 24281-24284.
7. Pyne, S. & Pyne, N.J. (2000) Sphingosine 1-phosphate in mammalian cells. *Biochem. J.* **349**, 385-402.
8. Kranenberg, O. & Moolenaar, W.H. (2001) Ras-MAP kinase signaling by lysophosphatidic acid and other G protein-coupled receptor agonists. *Oncogene* **20** 1540-1546.
9. Xu, J., et al. (2000) Lipid phosphate phosphatase-1 and Ca^{2+} control lysophosphatidate through EDG-2 receptors. *J. Biol. Chem.* **275**, 27520-27530.
10. Hooks, S.B., et al. (2001) Lysophosphatidic acid induced mitogenesis is regulated by lipid phosphate phosphatases and is EDG receptor independent. *J. Biol. Chem.* **276**, 4611-4621.
11. Alderton, F., et al. (2001) *J. Biol. Chem.* **276**, 13452-13460.

LAST MODIFIED 8/30/2007

For research use only. Not for use in human diagnostics or therapeutics.