

LPPR4 (E-5): sc-515779

BACKGROUND

Phosphatidate phosphatases are 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 Mg^{2+} 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). LPPR4 (lipid phosphate phosphatase-related protein type 4), also known as LPR4, PHP1, PRG1 or PRG-1, is a 763 amino acid multi-pass membrane protein that belongs to the PA-phosphatase related phosphoesterase family. Exclusively expressed in neurons, LPPR4 hydrolyzes lysophosphatidic acid (LPA) and facilitates axonal outgrowth during development and regenerative sprouting. LPPR4 exists as two alternatively spliced isoforms and is encoded by a gene located on human chromosome 1p21.2.

REFERENCES

1. Seki, N., et al. 1997. Characterization of cDNA clones in size-fractionated cDNA libraries from human brain. *DNA Res.* 4: 345-349.
2. Bräuer, A.U., et al. 2003. A new phospholipid phosphatase, PRG-1, is involved in axon growth and regenerative sprouting. *Nat. Neurosci.* 6: 572-578.
3. Savaskan, N.E., et al. 2004. Molecular cloning and expression regulation of PRG-3, a new member of the plasticity-related gene family. *Eur. J. Neurosci.* 19: 212-220.
4. Sigal, Y.J., et al. 2005. Integral membrane lipid phosphatases/phosphotransferases: common structure and diverse functions. *Biochem. J.* 387: 281-293.
5. Tanic, N., et al. 2006. Identification of differentially expressed mRNA transcripts in drug-resistant versus parental human melanoma cell lines. *Anticancer Res.* 26: 2137-2142.
6. Theofilopoulos, S., et al. 2008. Novel function of the human presqualene diphosphate phosphatase as a type II phosphatidate phosphatase in phosphatidylcholine and triacylglyceride biosynthesis pathways. *Biochim. Biophys. Acta* 1781: 731-742.
7. Brindley, D.N., et al. 2009. Phosphatidate degradation: phosphatidate phosphatases (lipins) and lipid phosphate phosphatases. *Biochim. Biophys. Acta* 1791: 956-961.
8. Brindley, D.N. and Pilquill, C. 2009. Lipid phosphate phosphatases and signaling. *J. Lipid Res.* 50: S225-S230.

CHROMOSOMAL LOCATION

Genetic locus: LPPR4 (human) mapping to 1p21.2.

SOURCE

LPPR4 (E-5) is a mouse monoclonal antibody raised against amino acids 585-694 mapping near the C-terminus of LPPR4 of human origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

LPPR4 (E-5) is recommended for detection of LPPR4 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 LPPR4 siRNA (h): sc-78869, LPPR4 shRNA Plasmid (h): sc-78869-SH and LPPR4 shRNA (h) Lentiviral Particles: sc-78869-V.

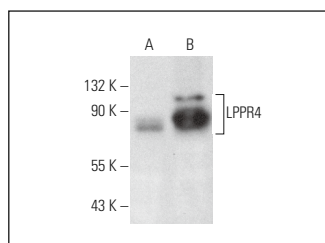
Molecular Weight of LPPR4 isoforms: 83/62 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, A2058 whole cell lysate: sc-364178 or BJ whole cell lysate: sc-364359.

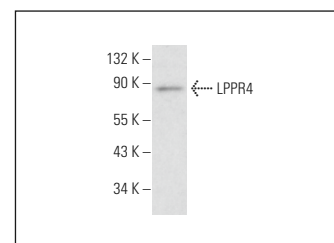
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



LPPR4 (E-5): sc-515779. Western blot analysis of LPPR4 expression in BJ (A) and IMR-32 (B) whole cell lysates.



LPPR4 (E-5): sc-515779. Western blot analysis of LPPR4 expression in A2058 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Zang, D., et al. 2020. LPPR4 promotes peritoneal metastasis via Sp1/Integrin α /FAK signaling in gastric cancer. *Am. J. Cancer Res.* 10: 1026-1044.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.