Revision 1

#48701 Store at -20C

PTPRF/LAR (E9B9S) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB	H	Endogenous	150, 213	Rabbit IgG	#P10586	5792

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

PTPRF/LAR (E9B9S) Rabbit mAb recognizes endogenous levels of total PTPRF/LAR protein. This antibody detects the E-subunit of the processed PTPRF/LAR protein. Weak signal is detected in mouse and rat.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human PTPRF/LAR protein.

Background

Receptor type protein tyrosine phosphatase F (PTPRF, LAR) is a transmembrane PTP that helps to regulate insulin signaling, cell proliferation and cell migration. The PTPRF protein is composed of an extracellular segment that contains several Ig-like and fibronectin (Fn-III) domains, a transmembrane region and a pair of cytoplasmic phosphatase domains (1,2). Functional studies reveal that the membrane-associated D1 phosphatase domain is responsible for substrate dephosphorylation, while the D2 domain is important for substrate specificity (3). PTPRF negatively regulates insulin signaling through dephosphorylation of insulin receptor and insulin receptor substrate (4). This phosphatase activates the pro-apoptotic DAPK serine/threonine kinase by removing a phosphate at Tyr491/492, while the kinase Src replaces the phosphate to inactivate DAPK at the same time it down regulates PTPRF expression (5). PTPRF is commonly found at focal adhesions where it interacts with liprin, which localizes the phosphatase to the membrane, and the Rac/Rho family GTPase Trio (6). Localization of PTPRF at adherens junctions results in PTPRF modification of β-catenin, which inhibits cell migration by limiting the amount of available cytosolic β-catenin (7).

Background References

1. Cheng, A. et al. (2002) *Eur J Biochem* 269, 1050-9.
2. O'Grady, P. et al. (1994) *J Biol Chem* 269, 25193-9.
3. Tsujikawa, K. et al. (2001) *Mol Endocrinol* 15, 271-80.
4. Zhang, W.R. et al. (1996) *Mol Endocrinol* 10, 575-84.
5. Wang, W.J. et al. (2007) *Mol Cell* 27, 701-16.
6. Stoker, A.W. (2005) *J Endocrinol* 185, 19-33.
7. Müller, T. et al. (1999) *J Biol Chem* 274, 10173-83.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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