Revision 1

Store at -20C

#29135

PME-1 (8A6-F8) Mouse mAb

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R	Endogenous	42	Mouse IgG1	#Q9Y570	51400

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

PME-1 (8A6-F8) Mouse mAb recognizes endogenous levels of total PME-1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant full-length mouse PME-1 protein.

Background

Protein phosphatase methylesterase 1 (PME-1) is an evolutionarily conserved enzyme that demethylates phosphatases (1). Post-translational modification (PTMs) of proteins is a cellular mechanism that increases the functional diversity of the proteome. Several forms of PTMs exist, including methylation and phosphorylation, the covalent addition of a methyl or phosphate group, respectively, to specific amino acids within a protein. In addition to enzymes that catalyze the addition of methyl groups or phosphates to proteins, specific enzymes that remove PTMs exist to provide an additional level of cellular regulation; methyl and phosphate PTMs are removed by methylesterases and phosphatases, respectively. Phosphoprotein phosphatase 2a (PP2A) is an essential serine/threonine phosphatase that, as part of various signal transduction pathways, regulates many fundamental cellular processes, including DNA replication, transcription, translation, metabolism, cell cycle progression, cell division, apoptosis, and development (2-4). PP2A function is regulated, in part, by phospho- and methyl modification of its catalytic subunit. PP2A is methylated at the carboxyl group of the C-terminal Leucine 309 residue by leucine carboxyl methyltransferase (LCMT). Methylation of PP2A alters its cellular localization and its ability to interact with its regulatory subunits and substrates (5-8). PP2A is demethylated by PME-1 (9,10). PME-1 KO mice are post-natal lethal, and KO tissue exhibit altered PP2A activity and phospho-proteomic profile, consistent with a critical role PME-1 plays in regulating PP2A function (11). Dysregulated PP2A activity is linked to several diseases, including certain cancers and neurodegenerative diseases like Alzheimer's disease, suggesting that PME-1 could be the target of therapeutic intervention (12-14).

Background References

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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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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