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PRMT1 Antibody

Rabbit mAb
Catalog # AP91218

Product Information

Application	WB, IHC, IF, ICC, IP, IHF
Primary Accession	Q99873
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	Histone-arginine N-methyltransferase PRMT1; ANM1; HCP1; IR1B4; HRMT1L2;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	42462

Additional Information

Dilution	WB 1:500~1:1000 IHC 1:50~1:200 ICC/IF 1:100~1:500
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human PRMT1
Description	Arginine methyltransferase that methylates (mono and asymmetric dimethylation) the guanidino nitrogens of arginyl residues present in proteins such as ESR1, histone H2, H3 and H4, PIAS1, HNRNPA1, HNRNPD, NFATC2IP, SUPT5H, TAF15 and EWS. Constitutes the main enzyme that mediates monomethylation and asymmetric dimethylation of histone H4 'Arg-4' (H4R3me1 and H4R3me2a, respectively), a specific tag for epigenetic transcriptional activation.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	PRMT1 (HGNC:5187)
Function	Arginine methyltransferase that methylates (mono and asymmetric dimethylation) the guanidino nitrogens of arginyl residues present in proteins such as ESR1, histone H2, H3 and H4, FMR1, ILF3, HNRNPA1, HNRNPD, NFATC2IP, SUPT5H, TAF15, EWS, HABP4, SERBP1, RBM15, FOXO1, CHTOP, MAP3K5/ASK1, MICU1 and NPRL2 (PubMed:10749851, PubMed:15741314, PubMed:16879614, PubMed:18951090, PubMed:22095282, PubMed:25284789, PubMed:26575292, PubMed:26876602, PubMed:27642082, PubMed:30765518, PubMed:31257072, PubMed:38006878). Constitutes the main enzyme that mediates monomethylation and asymmetric dimethylation of histone H4 'Arg-3' (H4R3me1 and H4R3me2a, respectively), a specific tag for epigenetic transcriptional activation. May be involved in the regulation of TAF15

transcriptional activity, act as an activator of estrogen receptor (ER)-mediated transactivation, play a key role in neurite outgrowth and act as a negative regulator of megakaryocytic differentiation, by modulating p38 MAPK pathway. Methylates RBM15, promoting ubiquitination and degradation of RBM15 (PubMed:26575292). Methylates MRE11 and TP53BP1, promoting the DNA damage response (PubMed:15741314, PubMed:16294045, PubMed:29651020). Methylates FOXO1 and retains it in the nucleus increasing its transcriptional activity (PubMed:18951090). Methylates CHTOP and this methylation is critical for its 5-hydroxymethylcytosine (5hmC)-binding activity (PubMed:25284789). Methylates MAP3K5/ASK1 at 'Arg-78' and 'Arg-80' which promotes association of MAP3K5 with thioredoxin and negatively regulates MAP3K5 association with TRAF2, inhibiting MAP3K5 stimulation and MAP3K5-induced activation of JNK (PubMed:22095282). Methylates H4R3 in genes involved in glioblastomagenesis in a CHTOP- and/or TET1- dependent manner (PubMed:25284789). Plays a role in regulating alternative splicing in the heart (By similarity). Methylates NPRL2 at 'Arg-78' leading to inhibition of its GTPase activator activity and then the GATOR1 complex and consequently inducing timely mTORC1 activation under methionine-sufficient conditions (PubMed:38006878).

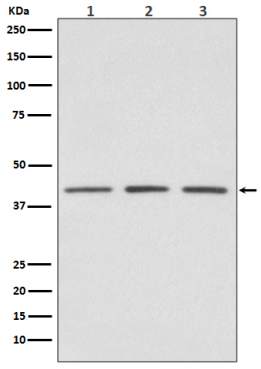
Cellular Location

Nucleus. Nucleus, nucleoplasm {ECO:0000250|UniProtKB:Q9JIF0}. Cytoplasm. Cytoplasm, cytosol {ECO:0000250|UniProtKB:Q9JIF0}. Lysosome membrane. Note=Mostly found in the cytoplasm Colocalizes with CHTOP within the nucleus. Low levels detected also in the chromatin fraction (By similarity). Upon methionine stimulation, localizes to the lysosome membrane in an NPRL2-dependent manner (PubMed:38006878). {ECO:0000250|UniProtKB:Q9JIF0, ECO:0000269|PubMed:38006878}

Tissue Location

Widely expressed (PubMed:11097842). Expressed strongly in colorectal cancer cells (at protein level) (PubMed:28040436). Expressed strongly in colorectal cancer tissues compared to wild-type colon samples (at protein level) (PubMed:28040436). Expressed strongly in colorectal cancer tissues compared to wild-type colon samples (PubMed:28040436)

Images



Western blot analysis of PRMT1 expression in (1) HeLa cell lysate; (2) NIH/3T3 cell lysate; (3) PC-12 cell lysate.