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# PRMT1 Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AP52749

## Product Information

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| **Application** | WB |
| **Primary Accession** | Q99873 |
| **Reactivity** | Human |
| **Host** | Mouse |
| **Clonality** | Monoclonal |
| **Isotype** | IgG2b |
| **Calculated MW** | 42462 |

## Additional Information

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| **Gene ID** | 3276 |
| **Other Names** | ANM 1;ANM1;ANM1_HUMAN;complete cds;HCP 1;HCP1;Heterogeneous nuclear ribonucleoprotein methyltransferase 1 like 2;Heterogeneous nuclear ribonucleoproteins methyltransferase like 2;Heterogeneous nuclear ribonucleoproteins methyltransferase like2;Histone-arginine N-methyltransferase PRMT1;HMT 2;HMT1 (hnRNP methyltransferase;HMT1 (hnRNP methyltransferase S. cerevisiae) like 2;HMT1 hnRNP methyltransferase;HMT1 hnRNP methyltransferase like 2 (S. cerevisiae);HMT1 hnRNP methyltransferase like 2;HMT1 hnRNP methyltransferase-like 2 (S. cerevisiae);HMT2;HRMT1 L2;HRMT1L 2;HRMT1L2;Human mRNA for suppressor for yeast mutant;Human mRNA for suppressor for yeast mutant complete cds;Interferon receptor 1 bound protein 4;Interferon receptor 1 bound protein4;Interferon receptor 1-bound protein 4;Interferon receptor 1bound protein 4;IR1 B4;IR1B 4;IR1B4;Mrmt 1;Mrmt1;PRMT 1;PRMT1;Protein arginine methyltransferase 1;Protein arginine N methyltransferase 1;Protein arginine N methyltransferase1;Protein arginine N-methyltransferase 1;R1B4;S. cerevisiae like 2. |
| **Dilution** | WB~~1:1000 |
| **Format** | Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide, pH 7.3. |
| **Storage** | Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles. |

## Protein Information

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| **Name** | PRMT1 ( HGNC:5187)<br><br>Arginine methyltransferase that methylates (mono and asymmetric |

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| **Function** | 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). Methylates the C-terminus of DSP, promoting its phosphorylation by GSK3B and subsequent recruitment to desmosome cell-cell junctions (PubMed:25733715). |
| **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) |

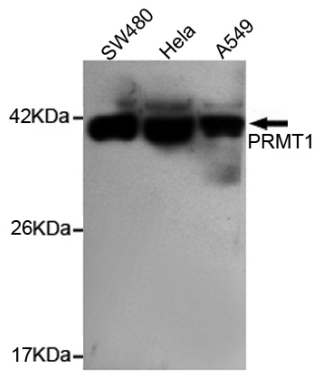
## Background

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. Together with dimethylated PIAS1, represses STAT1 transcriptional activity, in the late phase of interferon gamma (IFN-gamma) signaling. 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 FOXO1 and retains it in the nucleus increasing its transcriptional activity.

## References

Scott H.S.,et al.Genomics 48:330-340(1998).
Nikawa J.,et al.Gene 171:107-111(1996).
Scorilas A.,et al.Biochem. Biophys. Res. Commun. 278:349-359(2000).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Ebert L.,et al.Submitted (MAY-2004) to the EMBL/GenBank/DDBJ databases.

## Images




Western blot detection of PRMT1 in Hela,A549 and SW480 cell lysates using PRMT1 mouse mAb (1:1000 diluted).Predicted band size:42KDa.Observed band size:42KDa.

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