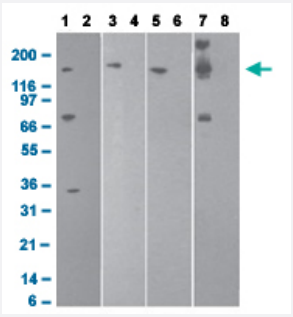
DNMT1 monoclonal antibody, clone 60B1220.1

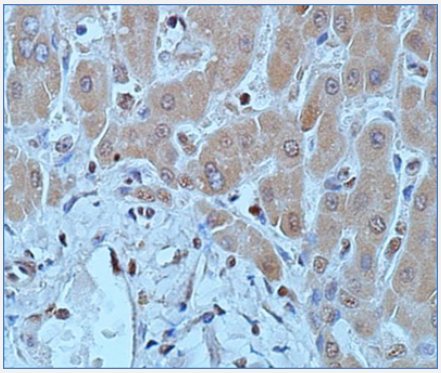
Catalog # MAB0079 Size 100 ug

Applications



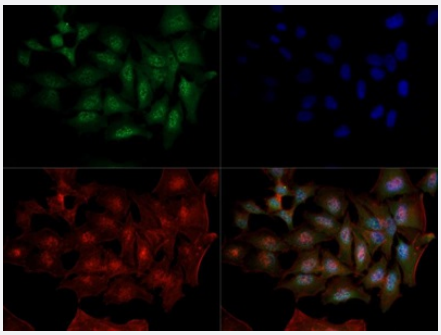
Western Blot

Western blot analysis with DNMT1 monoclonal antibody, clone 60B1220.1 (Cat # MAB0079).
Lane 1: 2102EP (human embryonic carcinoma) in the absence of immunizing peptide
Lane 2: 2102EP (human embryonic carcinoma) in the presence of immunizing peptide
Lane 3: Recombinant human Dnmt1 protein in the absence of immunizing peptide
Lane 4: Recombinant human Dnmt1 protein in the presence of immunizing peptide
Lane 5: NIH 3T3 (mouse embryonic fribroblast) in the absence of immunizing peptide
Lane 6: NIH 3T3 (mouse embryonic fribroblast) in the presence of immunizing peptide
Lane 7: D3 (mouse embryonic stem cell) in the absence of immunizing peptide
Lane 8: D3 (mouse embryonic stem cell) in the presence of immunizing peptide



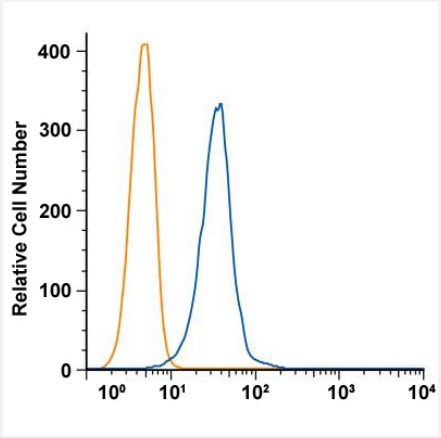
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections)

Immunohistochemical staining (Formalin-fixed paraffin-embedded sections) of human hepatocellular carcinoma with DNMT1 monoclonal antibody, clone 60B1220.1 (Cat # MAB0079).



Immunofluorescence

Immunofluorescent staining of HeLa cells with DNMT1 monoclonal antibody, clone 60B1220.1 (Cat # MAB0079) with Dylight 488 (Green). Nuclei and alpha-tubulin were counterstained with DAPI (Blue) and Dylight 550 (Red). An antibody dilution of 1:10 was used.



Flow Cytometry

Flow cytometric analysis of HeLa cells with DNMT1 monoclonal antibody, clone 60B1220.1 (Cat # MAB0079) (Blue). Orange: isotype control.

Specification

Product Description	Mouse monoclonal antibody raised against synthetic peptide of DNMT1.
Immunogen	A synthetic peptide corresponding to amino acids 637-650 of human DNMT1.
Sequence	EKDDREDKENAFKR
Host	Mouse
Reactivity	Human, Mouse
Form	Liquid
Purification	Protein G purification
Isotype	IgG1, kappa

Recommend Usage	ChIP (1:20-1:1000) Flow Cytometry Immunocytochemistry (1:10) Immunofluorescence (1:10) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) (1:50-1:500) Immunohistochemistry (Free floating sections) (1:500) Immunohistochemistry (Frozen sections) (1:500) Immunoprecipitation (1:10-1:500) Western Blot (0.1-0.5 ug/mL) The optimal working dilution should be determined by the end user.
Storage Buffer	In PBS (0.05% sodium azide)
Storage Instruction	Store at 4°C. For long term storage store at -20°C. Aliquot to avoid repeated freezing and thawing.
Note	This product contains sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which shoul d be handled by trained staff only.

Applications

- ChIP
- Western Blot

Western blot analysis with DNMT1 monoclonal antibody, clone 60B1220.1 (Cat # MAB0079).
Lane 1: 2102EP (human embryonic carcinoma) in the absence of immunizing peptide
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Lane 7: D3 (mouse embryonic stem cell) in the absence of immunizing peptide
Lane 8: D3 (mouse embryonic stem cell) in the presence of immunizing peptide

- Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections)

Immunohistochemical staining (Formalin-fixed paraffin-embedded sections) of human hepatocellular carcinoma with DNMT1 monoclonal antibody, clone 60B1220.1 (Cat # MAB0079).

- Immunohistochemistry (Frozen sections)
- Immunocytochemistry
- Immunofluorescence

Immunofluorescent staining of HeLa cells with DNMT1 monoclonal antibody, clone 60B1220.1 (Cat # MAB0079) with Dylight 488 (Green). Nuclei and alpha-tubulin were counterstained with DAPI (Blue) and Dylight 550 (Red). An antibody dilution of 1:10 was used.

- Immunoprecipitation
- Flow Cytometry

  Flow cytometric analysis of HeLa cells with DNMT1 monoclonal antibody, clone 60B1220.1 (Cat # MAB0079) (Blue). Orange: isotype control.

- Immunohistochemistry (Free floating sections)

Gene Info — DNMT1

Entrez GeneID	1786
Protein Accession#	NP_001370
Gene Name	DNMT1
Gene Alias	AIM, CXXC9, DNMT, FLJ16293, MCMT, MGC104992
Gene Description	DNA (cytosine-5-)-methyltransferase 1
Omim ID	126375
Gene Ontology	Hyperlink
Gene Summary	DNA (cytosine-5-)-methyltransferase 1 has a role in the establishment and regulation of tissue-specific patterns of methylated cytosine residues. Aberrant methylation patterns are associated with certain human tumors and developmental abnormalities. Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq
Other Designations	CXXC finger protein 9|DNA methyltransferase 1

Publication Reference

- HPV38 impairs UV-induced transcriptional activation of the IL-18 pro-inflammatory cytokine.

  Maria Grazia Ceraolo, Maria Carmen Romero-Medina, Simone Gobbato, Giusi Melita, Hanna Krynska, Cecilia Sirand, Purnima Gupta, Daniele Viarisio, Alexis Robitaille, Jacqueline Marvel, Massimo Tommasino, Assunta Venuti, Tarik Gheit.

  mSphere 2023 Dec; 8(6):e0045023.

  Application: ChIP, Human, HK cells

- Epigenetic Alteration of the Cancer-Related Gene TGFBI in B Cells Infected with Epstein-Barr Virus and Exposed to Aflatoxin B1: Potential Role in Burkitt Lymphoma Development.

  Francesca Manara, Antonin Jay, Grace Akinyi Odongo, Fabrice Mure, Mohamed Ali Maroui, Audrey Diederichs, Cecilia Sirand, Cyrille Cuenin, Massimo Granai, Lucia Mundo, Hector Hernandez-Vargas, Stefano Lazzi, Rita Khoueiry, Henri Gruffat, Zdenko Herceg and Rosita Accardi.

  Cancers 2022 Mar; 14(5):1284.

  Application: ChIP, Human, Loukes cells, RPMI-8226 cells

- Human papillomavirus type 38 alters wild-type p53 activity to promote cell proliferation via the downregulation of integrin alpha 1 expression.

  Maria Carmen Romero-Medina, Assunta Venuti, Giusi Melita, Alexis Robitaille, Maria Grazia Ceraolo, Laura Pacini, Cecilia Sirand, Daniele Viarisio, Valerio Taverniti, Purnima Gupta, Mariafrancesca Scalise, Cesare Indiveri, Rosita Accardi, Massimo Tommasino.

  PLoS Pathogens 2020 Aug; 16(8):e1008792.

  Application: ChIP, WB-Tr, Human, Human keratinocytes

- Human mitochondrial DNA is extensively methylated in a non-CpG context.

  Patil V, Cuenin C, Chung F, Aguilera JRR, Fernandez-Jimenez N, Romero-Garmendia I, Bilbao JR, Cahais V, Rothwell J, Herceg Z.

  Nucleic Acids Research 2019 Nov; 47(19):10072.

  Application: WB-Tr, Human, MCF 10A cells

- DNA methylation in cystathionine-γ-lyase (CSE) gene promoter induced by ox-LDL in macrophages and in apoE knockout mice.

  Du HP, Li J, You SJ, Wang YL, Wang F, Cao YJ, Hu LF, Liu CF.

  Biochemical and Biophysical Research Communications 2016 Jan; 469(3):776.

  Application: WB-Ce, Mouse, RAW 264.7 cells, peritoneal macrophage

- Down-regulation of toll-like receptor 9 expression by beta human papillomavirus type 38 and implications for cell cycle control.

  Pacini L, Savini C, Ghittoni R, Saidj D, Lamartine J, Hasan UA, Accardi R, Tommasino M.

  Journal of Virology 2015 Nov; 89(22):11396.

  Application: ChIP, WB-Ce, Human, HFK cells

- Homocysteine Triggers Inflammatory Responses in Macrophages through Inhibiting CSE-H2S Signaling via DNA Hypermethylation of CSE Promoter.

  Li JJ, Li Q, Du HP, Wang YL, You SJ, Wang F, Xu XS, Cheng J, Cao YJ, Liu CF, Hu LF.

  International Journal of Molecular Sciences 2015 Jun; 16(6):12560.

  Application: WB, Mouse, Raw264.7 cells

- Epstein-Barr Virus Down-Regulates Tumor Suppressor DOK1 Expression.

  Siouda M, Frecha C, Accardi R, Yue J, Cuenin C, Gruffat H, Manet E, Herceg Z, Sylla BS, Tommasino M.

  PLoS Pathogens 2014 May; 10(5):e1004125.

  Application: WB-Tr, Human, RPMI 8226 cells

- The E7 oncoprotein from beta human papillomavirus type 38 induces the formation of an inhibitory complex for a subset of p53-regulated promoters.

  Saidj D, Cros MP, Hernandez-Vargas H, Guarino F, Sylla B, Tommasino M, Accardi R.

  Journal of Virology 2013 Nov; 87(22):12139.

  Application: WB, ChIP, Human, HFK cells

- Arsenic induces functional re-expression of estrogen receptor α by demethylation of DNA in estrogen receptor-negative human breast cancer.

  Du J, Zhou N, Liu H, Jiang F, Wang Y, Hu C, Qi H, Zhong C, Wang X, Li Z.

  PLoS One 2012 Apr; 7(4):e35957.

  Application: ChIP, WB-Ce, Human, MCF-7, MDA-MB-231 cells

- Inhibition of p53 represses E-cadherin expression by increasing DNA methyltransferase-1 and promoter methylation in serous borderline ovarian tumor cells.

  Cheng JC, Auersperg N, Leung PC.

  Oncogene 2011 Sep; 30(37):3930.

  Application: WB, Human, SBOT3.1, SBOT4, MPSC1 cells

- CCCTC-binding factor activates PARP-1 affecting DNA methylation machinery.

  Guastafierro T, Cecchinelli B, Zampieri M, Reale A, Riggio G, Sthandier O, Zupi G, Calabrese L, Caiafa P.

  The Journal of Biological Chemistry 2008 Jun; 283(32):21873.

- Helicobacter pylori regulates p21(WAF1) by histone H4 acetylation.

  Xia G, Schneider-Stock R, Diestel A, Habold C, Krueger S, Roessner A, Naumann M, Lendeckel U.

  Biochemical and Biophysical Research Communications 2008 Feb; 369(2):526.

- Epigenetic silencing of O6-methylguanine DNA methyltransferase gene in NiS-transformed cells.

  Ji W, Yang L, Yu L, Yuan J, Hu D, Zhang W, Yang J, Pang Y, Li W, Lu J, Fu J, Chen J, Lin Z, Chen W, Zhuang Z.

  Carcinogenesis 2008 Jan; 29(6):1267.

- Neither DNA hypomethylation nor changes in the kinetics of erythroid differentiation explain 5-azacytidine's ability to induce human fetal hemoglobin.

  Mabaera R, Greene MR, Richardson CA, Conine SJ, Kozul CD, Lowrey CH.

  Blood 2007 Oct; 111(1):411.

- Role of the polycomb repressive complex 2 in acute promyelocytic leukemia.

  Villa R, Pasini D, Gutierrez A, Morey L, Occhionorelli M, Vire E, Nomdedeu JF, Jenuwein T, Pelicci PG, Minucci S, Fuks F, Helin K, Di Croce L.

  Cancer Cell 2007 Jun; 11(6):513.

- Aberrant epigenetic modifications in hepatocarcinogenesis induced by hepatitis B virus X protein.

  Park IY, Sohn BH, Yu E, Suh DJ, Chung YH, Lee JH, Surzycki SJ, Lee YI.

  Gastroenterology 2007 Apr; 132(4):1476.

  Application: WB-Tr, Human, CHL cells

- Zebra fish Dnmt1 and Suv39h1 regulate organ-specific terminal differentiation during development.

  Rai K, Nadauld LD, Chidester S, Manos EJ, James SR, Karpf AR, Cairns BR, Jones DA.

  Molecular and Cellular Biology 2006 Oct; 26(19):7077.

  Application: WB, Human, Zebra fish, Embryos, HEK 293 cells

- Induction of DNA methylation and gene silencing by short interfering RNAs in human cells.

  Kawasaki H, Taira K.

  Nature 2006 Jun; 441(7097):1176.

- Stage-specific induction of DNA methyltransferases in olfactory receptor neuron development.

  Jessica L MacDonald, Christopher S Y Gin, A Jane Roskams.

  Developmental Biology 2005 Dec; 288(2):461.

  Application: IF, IHC, Mouse, Mouse olfactory epithelium, OP27 cells

- Corrigendum to "An Association of DNMT3b Protein Expression With P16INK4a Promoter Hypermethylation in Non-Smoking Female Lung Cancer With Human Papillomavirus Infection" [Cancer Lett. 226 (1) (2005 Aug 8) 77-84].

  Torng-Sen Lin, Huei Lee, Ruei-A Chen, Ming-Lin Ho, Chia-Yu Lin, Ya-Hui Chen, Yi-Yu Tsai, Ming-Chih Chou, Ya-Wen Cheng.

  Cancer Letters 2005 Aug; 226(1):77.

  Application: IHC-P, Human, Human lung tumors

- Establishment and characterization of SRIK-NKL: a novel CD8+ natural killer/T cell line derived from a patient with leukemic phase of acute lymphoblastic lymphoma.

  Bejai I S Srivastava, Maya D Srivastava.

  Leukemia Research 2005 Jul; 29(7):771.

  Application: ICC, IHC-Fr, Human, Human CD8+ NK/T cell line SRIK-NKL cells

- 5-Aza-deoxycytidine induces selective degradation of DNA methyltransferase 1 by a proteasomal pathway that requires the KEN box, bromo-adjacent homology domain, and nuclear localization signal.

  Kalpana Ghoshal, Jharna Datta, Sarmila Majumder, Shoumei Bai, Huban Kutay, Tasneem Motiwala, Samson T Jacob.

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  Application: IF, WB-Ce, WB-Tr, Human, Monkey, Mouse, COS-7, DLD1b, H38-5, HeLa, P1798, RKO, ts20 cells

- Immunology of cutaneous vasculitis associated with both etanercept and infliximab.

  M D Srivastava, F Alexander, R J Tuthill.

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- Deregulation of DNA methyltransferases and loss of parental methylation at the insulin-like growth factor II (Igf2)/H19 loci in p53 knockout mice prior to tumor development.

  In Young Park, Bo Hwa Sohn, Jung Ha Choo, Cheol O Joe, Je Kyung Seong, Young Ik Lee, Jae Hoon Chung.

  Journal of Cellular Biochemistry 2005 Feb; 94(3):585.

  Application: WB-Ti, Mouse, Mouse livers, Mouse thymus

- Loss of estrogen receptor signaling triggers epigenetic silencing of downstream targets in breast cancer.

  Yu-Wei Leu, Pearlly S Yan, Meiyun Fan, Victor X Jin, Joseph C Liu, Edward M Curran, Wade V Welshons, Susan H Wei, Ramana V Davuluri, Christoph Plass, Kenneth P Nephew, Tim H-M Huang.

  Cancer Research 2004 Nov; 64(22):8184.

  Application: ChIP, Human, MCF-7 cells

- RNA interference-mediated knockdown of DNA methyltransferase 1 leads to promoter demethylation and gene re-expression in human lung and breast cancer cells.

  Makoto Suzuki, Noriaki Sunaga, David S Shames, Shinichi Toyooka, Adi F Gazdar, John D Minna.

  Cancer Research 2004 May; 64(9):3137.

  Application: WB-Tr, Human, HCC1954, NCI-H1299 cells

- Components of a pathway maintaining histone modification and heterochromatin protein 1 binding at the pericentric heterochromatin in Mammalian cells.

  Huawei Xin, Ho-Guen Yoon, Prim B Singh, Jiemin Wong, Jun Qin.

  The Journal of Biological Chemistry 2004 Mar; 279(10):9539.

  Application: WB-Tr, Human, HeLa cells

- Double RNA interference of DNMT3b and DNMT1 enhances DNA demethylation and gene reactivation.

  Leu YW, Rahmatpanah F, Shi H, Wei SH, Liu JC, Yan PS, Huang TH.

  Cancer Research 2003 Oct; 63(19):6110.

  Application: WB-Tr, Human, CP70 cells

- Analysis of mammalian proteins involved in chromatin modification reveals new metaphase centromeric proteins and distinct chromosomal distribution patterns.

  Jeffrey M Craig, Elizabeth Earle, Paul Canham, Lee H Wong, Melissa Anderson, K H Andy Choo.

  Human Molecular Genetics 2003 Dec; 12(23):3109.

  Application: IF, Human, Mouse, Human chromosomes, Mouse chromosomes

- Decrease of DNA methyltransferase 1 expression relative to cell proliferation in transitional cell carcinoma.

  Fumihiro Kimura, Hans-Helge Seifert, Andrea R Florl, Simon Santourlidis, Christine Steinhoff, Sandra Swiatkowski, Csaba Mahotka, Claus-Dieter Gerharz, Wolfgang A Schulz.

  International Journal of Cancer 2003 May; 104(5):568.

  Application: WB-Ce, Human, 5637, HT1376, Normal uroepithelial cells, SD, SW1710, UP35, UP36, VmCub1, VmCub1 cells

- Farnesyltransferase inhibitor (L-744,832) restores TGF-beta type II receptor expression and enhances radiation sensitivity in K-ras mutant pancreatic cancer cell line MIA PaCa-2.

  Rachael A Alcock, Swatee Dey, Damodaran Chendil, Mohammed S Inayat, Mohammed Mohiuddin, George Hartman, Lee K Chatfield, Vincent S Gallicchio, Mansoor M Ahmed.

  Oncogene 2002 Nov; 21(51):7883.

  Application: WB-Ce, Human, MIA PaCa-2 cells

- The nucleolar remodeling complex NoRC mediates heterochromatin formation and silencing of ribosomal gene transcription.

  Raffaella Santoro, Junwei Li, Ingrid Grummt.

  Nature Genetics 2002 Nov; 32(3):393.

- The Epstein-Barr virus oncogene product, latent membrane protein 1, induces the downregulation of E-cadherin gene expression via activation of DNA methyltransferases.

  Chi-Neu Tsai, Chia-Lung Tsai, Ka-Po Tse, Hwan-You Chang, Yu-Sun Chang.

  PNAS 2002 Jul; 99(15):10084.

  Application: WB-Tr, Human, NPC076 cells

- Age-dependent DNA methylation changes in the ITGAL (CD11a) promoter.

  Zhiyong Zhang, Chun Deng, Qianjin Lu, Bruce Richardson.

  Mechanisms of Ageing and Development 2002 May; 123(9):1257.

  Application: WB-Ce, Human, Human T cells

- Lsh, a member of the SNF2 family, is required for genome-wide methylation.

  K Dennis, T Fan, T Geiman, Q Yan, K Muegge.

  Genes & Development 2001 Nov; 15(22):2940.

Pathway

- Cysteine and methionine metabolism
- Metabolic pathways

Disease

- Arsenic Poisoning
- Breast cancer
- Breast Neoplasms
- Carcinoma
- Colorectal Neoplasms
- Cues
- DNA Damage
- Genetic Predisposition to Disease
- Lupus Erythematosus
- Neoplasms
- Ovarian cancer
- Ovarian Neoplasms
- Satiety Response
- Spinal Dysraphism
- Stomach Neoplasms