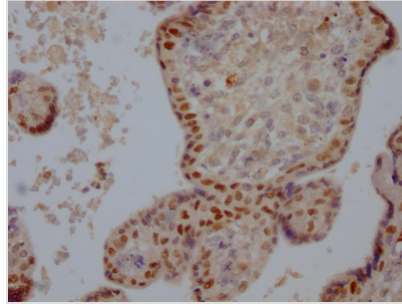


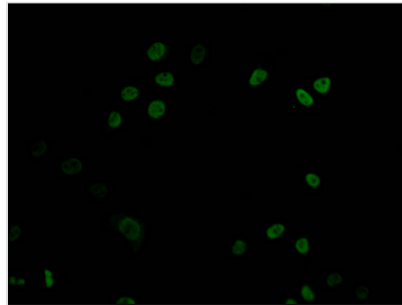


DNMT1 Recombinant Monoclonal Antibody

Product Code	CSB-RA160202A0HU
Storage	Upon receipt, store at -20°C or -80°C. Avoid repeated freeze.
Uniprot No.	P26358
Immunogen	A synthesized peptide derived from human Dnmt1
Species Reactivity	Human
Tested Applications	ELISA, IHC, IF; Recommended dilution: IHC:1:50-1:200, IF:1:20-1:200
Relevance	Methylates CpG residues. Preferentially methylates hemimethylated DNA. Associates with DNA replication sites in S phase maintaining the methylation pattern in the newly synthesized strand, that is essential for epigenetic inheritance. Associates with chromatin during G2 and M phases to maintain DNA methylation independently of replication. It is responsible for maintaining methylation patterns established in development. DNA methylation is coordinated with methylation of histones. Mediates transcriptional repression by direct binding to HDAC2. In association with DNMT3B and via the recruitment of CTCFL/BORIS, involved in activation of BAG1 gene expression by modulating dimethylation of promoter histone H3 at H3K4 and H3K9. Probably forms a corepressor complex required for activated KRAS-mediated promoter hypermethylation and transcriptional silencing of tumor suppressor genes (TSGs) or other tumor-related genes in colorectal cancer (CRC) cells (PubMed:24623306). Also required to maintain a transcriptionally repressive state of genes in undifferentiated embryonic stem cells (ESCs) (PubMed:24623306). Associates at promoter regions of tumor suppressor genes (TSGs) leading to their gene silencing (PubMed:24623306). Promotes tumor growth (PubMed:24623306).
Form	Liquid
Conjugate	Non-conjugated
Storage Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purification Method	Affinity-chromatography
Isotype	Rabbit IgG
Clonality	Monoclonal
Product Type	Recombinant Antibody
Immunogen Species	Homo sapiens (Human)
Research Area	Epigenetics and Nuclear Signaling
Gene Names	DNMT1
Clone No.	1A9
Image	



IHC image of CSB-RA160202A0HU diluted at 1:100 and staining in paraffin-embedded human placenta tissue performed on a Leica Bond™ system. After dewaxing and hydration, antigen retrieval was mediated by high pressure in a citrate buffer (pH 6.0). Section was blocked with 10% normal goat serum 30min at RT. Then primary antibody (1% BSA) was incubated at 4°C overnight. The primary is detected by a Goat anti-rabbit IgG polymer labeled by HRP and visualized using 0.05% DAB.



Immunofluorescence staining of HepG2 Cells with CSB-RA160202A0HU at 1:50, counter-stained with DAPI. The cells were fixed in 4% formaldehyde, permeated by 0.2% TritonX-100, and blocked in 10% normal Goat Serum. The cells were then incubated with the antibody overnight at 4°C. Nuclear DNA was labeled in blue with DAPI. The secondary antibody was FITC-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L).

Description

The production of the DNMT1 recombinant monoclonal antibody is a four-step process, starting with the sequencing of the DNMT1 monoclonal antibody gene, cloning the gene into a plasmid vector, transfecting the recombinant vector into a host cell line, and then purifying the resulting DNMT1 recombinant monoclonal antibody from the cell culture supernatant using affinity chromatography. The DNMT1 monoclonal antibody is derived from DNMT1 antibody-producing hybridomas and produced using a synthesized peptide from human DNMT1 as the immunogen. This recombinant DNMT1 monoclonal antibody is highly recommended for ELISA, IHC, and IF applications to detect human DNMT1 protein.

DNMT1 is responsible for copying the DNA methylation pattern from the parent strand to the daughter strand during DNA replication, ensuring that the methylation pattern is faithfully passed on to the next generation of cells. This modification is critical for gene expression regulation, genomic imprinting, and X-chromosome inactivation. DNMT1 is highly expressed in proliferating cells, including embryonic stem cells and cancer cells, where it plays a crucial role in regulating gene expression and cellular differentiation. Dysregulation of DNMT1 has been associated with a variety of diseases, including cancer and neurological disorders.