10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-SAMHD1 Monoclonal Antibody

Catalog # ABO14638

Product Information

Application	WB, IHC, IF, ICC, FC
Primary Accession	Q9Y3Z3
Host	Rabbit
Isotype	Rabbit IgG
Reactivity	Human
Clonality	Monoclonal
Format	Liquid
Description	Anti-SAMHD1 Monoclonal Antibody . Tested in WB, IHC, ICC/IF, Flow Cytometry applications. This antibody reacts with Human.

Additional Information

Gene ID	25939
Other Names	Deoxynucleoside triphosphate triphosphohydrolase SAMHD1, dNTPase, 3.1.5.-, Dendritic cell-derived IFNG-induced protein, DCIP, Monocyte protein 5 {ECO:0000303|Ref.2}, MOP-5 {ECO:0000303|Ref.2}, SAM domain and HD domain-containing protein 1, hSAMHD1, SAMHD1 (HGNC:15925)
Calculated MW	72201
Application Details	WB 1:1000-1:5000 IHC 1:50-1:200 ICC/IF 1:50-1:200 FC 1:50
Source	Eukaryota
Contents	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
Clone Names	Clone: AEEA-19
Immunogen	A synthesized peptide derived from human SAMHD1
Purification	Affinity-chromatography
Storage	Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.

Protein Information

Name	SAMHD1 (HGNC:15925)

Function

Protein that acts both as a host restriction factor involved in defense response to virus and as a regulator of DNA end resection at stalled replication forks (PubMed:19525956, PubMed:21613998, PubMed:21720370, PubMed:22056990, PubMed:23601106, PubMed:23602554, PubMed:24336198, PubMed:26294762, PubMed:26431200, PubMed:28229507, PubMed:28834754, PubMed:29670289). Has deoxynucleoside triphosphate (dNTPase) activity, which is required to restrict infection by viruses, such as HIV-1: dNTPase activity reduces cellular dNTP levels to levels too low for retroviral reverse transcription to occur, blocking early- stage virus replication in dendritic and other myeloid cells (PubMed:19525956, PubMed:21613998, PubMed:21720370, PubMed:22056990, PubMed:23364794, PubMed:23601106, PubMed:23602554, PubMed:24336198, PubMed:25038827, PubMed:26101257, PubMed:26294762, PubMed:26431200, PubMed:28229507). Likewise, suppresses LINE-1 retrotransposon activity (PubMed:24035396, PubMed:24217394, PubMed:29610582). Not able to restrict infection by HIV-2 virus; because restriction activity is counteracted by HIV-2 viral protein Vpx (PubMed:21613998, PubMed:21720370). In addition to virus restriction, dNTPase activity acts as a regulator of DNA precursor pools by regulating dNTP pools (PubMed:23858451). Phosphorylation at Thr-592 acts as a switch to control dNTPase-dependent and -independent functions: it inhibits dNTPase activity and ability to restrict infection by viruses, while it promotes DNA end resection at stalled replication forks (PubMed:23601106, PubMed:23602554, PubMed:29610582, PubMed:29670289). Functions during S phase at stalled DNA replication forks to promote the resection of gapped or reversed forks: acts by stimulating the exonuclease activity of MRE11, activating the ATR-CHK1 pathway and allowing the forks to restart replication (PubMed:29670289). Its ability to promote degradation of nascent DNA at stalled replication forks is required to prevent induction of type I interferons, thereby preventing chronic inflammation (PubMed:27477283, PubMed:29670289). Ability to promote DNA end resection at stalled replication forks is independent of dNTPase activity (PubMed:29670289). Enhances immunoglobulin hypermutation in B-lymphocytes by promoting transversion mutation (By similarity).

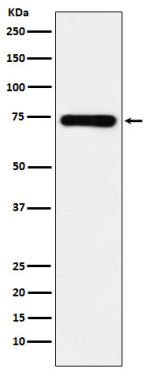
Cellular Location

Nucleus. Chromosome Note=Localizes to sites of DNA double-strand breaks in response to DNA damage.

Tissue Location

Expressed in heart, skeletal muscle, spleen, liver, small intestine, placenta, lung and peripheral blood leukocytes (PubMed:11064105). No expression is seen in brain and thymus (PubMed:11064105).

Images



Western blot analysis of SAMHD1 expression in MCF7 cell lysate.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.