

SAMHD1 Antibody (clone 3F5)
Mouse Monoclonal Antibody
Catalog # ALS16624

Specification

SAMHD1 Antibody (clone 3F5) - Product Information

Application	WB, IHC-P, IF, FC
Primary Accession	Q9Y3Z3
Other Accession	25939
Reactivity	Human, Mouse, Rat, Monkey, Dog
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2b
Calculated MW	72201
Dilution	WB~~1:1000 IHC-P~~N/A IF~~1:50~200 FC~~1:10~50

SAMHD1 Antibody (clone 3F5) - Additional Information

Gene ID 25939

Other Names

SAMHD1, AGS5, CHBL2, DCIP, HDDC1, Monocyte protein 5, MOP-5, MOP5, SBBI88, Mg11, SAM domain and HD domain 1

Target/Specificity

Human SAMHD1 / DCIP

Reconstitution & Storage

PBS, pH 7.3, 1% BSA, 50% glycerol, 0.02% sodium azide. Store at -20°C. Minimize freezing and thawing.

Precautions

SAMHD1 Antibody (clone 3F5) is for research use only and not for use in diagnostic or therapeutic procedures.

SAMHD1 Antibody (clone 3F5) - 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:21720370)

href="http://www.uniprot.org/citations/22056990" target="_blank">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

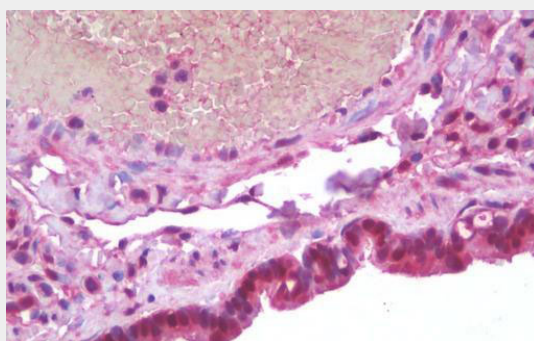
Expressed in heart, skeletal muscle, spleen, liver, small intestine, placenta, lung and peripheral blood leukocytes (PubMed:11064105). No expression is seen in brain and thymus (PubMed:11064105).

SAMHD1 Antibody (clone 3F5) - Protocols

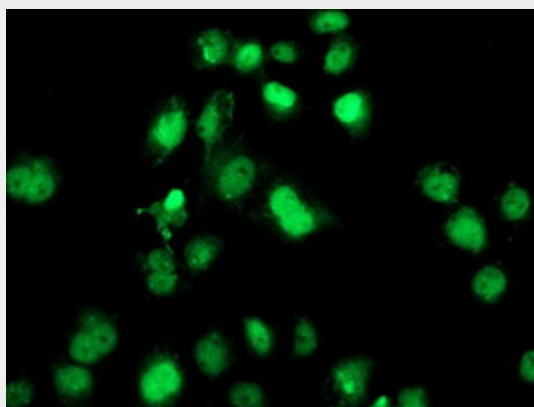
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

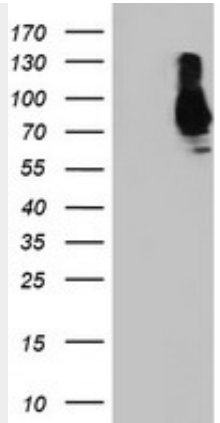
SAMHD1 Antibody (clone 3F5) - Images



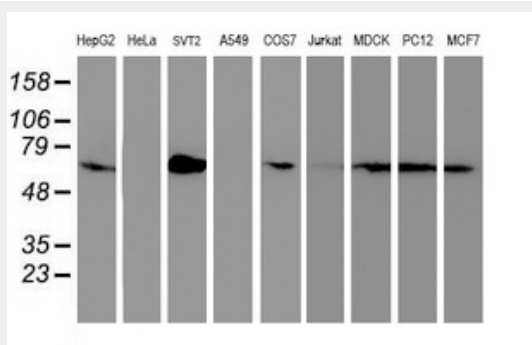
Anti-SAMHD1 antibody IHC staining of human lung.



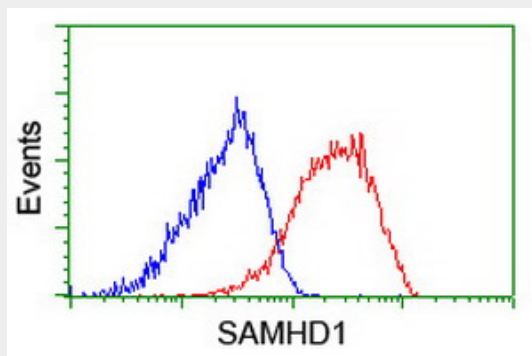
Anti-SAMHD1 mouse monoclonal antibody immunofluorescent staining of COS7 cells transiently...



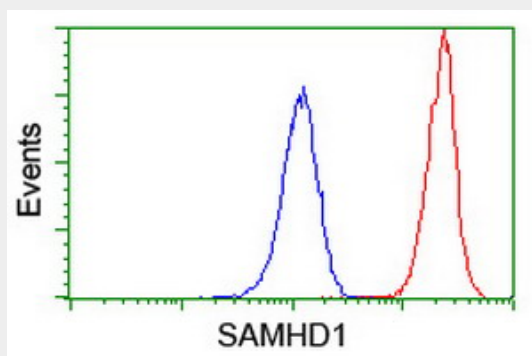
HEK293T cells were transfected with the pCMV6-ENTRY control (Left lane) or pCMV6-ENTRY SAMHD1...



Western blot of extracts (35 ug) from 9 different cell lines by using anti-SAMHD1 monoclonal...



Flow cytometry of HeLa cells, using anti-SAMHD1 antibody (Red), compared to a nonspecific...



Flow cytometry of Jurkat cells, using anti-SAMHD1 antibody (Red), compared to a nonspecific...

SAMHD1 Antibody (clone 3F5) - Background

Host restriction nuclease that blocks early-stage virus replication in dendritic and other myeloid cells. Likewise, suppresses LINE-1 retrotransposon activity. May function by reducing the cellular dNTP levels to levels too low for retroviral reverse transcription to occur. May play a role in mediating proinflammatory responses to TNF-alpha signaling.

SAMHD1 Antibody (clone 3F5) - References

Li N.,et al.Immunol. Lett. 74:221-224(2000).
Takayama K.,et al.Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
Wiemann S.,et al.Genome Res. 11:422-435(2001).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Deloukas P.,et al.Nature 414:865-871(2001).