

SAMHD1 Antibody (clone 2D7)
Mouse Monoclonal Antibody
Catalog # ALS17185**Specification**

SAMHD1 Antibody (clone 2D7) - Product Information

Application	IHC-P, IF, WB, FC
Primary Accession	O9Y3Z3
Other Accession	25939
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG2b
Calculated MW	72201

SAMHD1 Antibody (clone 2D7) - 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 2D7) is for research use only and not for use in diagnostic or therapeutic procedures.

SAMHD1 Antibody (clone 2D7) - 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:23602554, PubMed:23601106, PubMed:22056990, PubMed:24336198, PubMed:<a

[26294762](http://www.uniprot.org/citations/26294762), PubMed: [26431200](http://www.uniprot.org/citations/26431200), PubMed: [28229507](http://www.uniprot.org/citations/28229507), PubMed: [28834754](http://www.uniprot.org/citations/28834754), PubMed: [29670289](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/19525956), PubMed: [21613998](http://www.uniprot.org/citations/21613998), PubMed: [21720370](http://www.uniprot.org/citations/21720370), PubMed: [23602554](http://www.uniprot.org/citations/23602554), PubMed: [23601106](http://www.uniprot.org/citations/23601106), PubMed: [23364794](http://www.uniprot.org/citations/23364794), PubMed: [25038827](http://www.uniprot.org/citations/25038827), PubMed: [26101257](http://www.uniprot.org/citations/26101257), PubMed: [22056990](http://www.uniprot.org/citations/22056990), PubMed: [24336198](http://www.uniprot.org/citations/24336198), PubMed: [28229507](http://www.uniprot.org/citations/28229507), PubMed: [26294762](http://www.uniprot.org/citations/26294762), PubMed: [26431200](http://www.uniprot.org/citations/26431200)). Likewise, suppresses LINE-1 retrotransposon activity (PubMed: [24035396](http://www.uniprot.org/citations/24035396), PubMed: [29610582](http://www.uniprot.org/citations/29610582), PubMed: [24217394](http://www.uniprot.org/citations/24217394)). Not able to restrict infection by HIV-2 virus; because restriction activity is counteracted by HIV-2 viral protein Vpx (PubMed: [21613998](http://www.uniprot.org/citations/21613998), PubMed: [21720370](http://www.uniprot.org/citations/21720370)). In addition to virus restriction, dNTPase activity acts as a regulator of DNA precursor pools by regulating dNTP pools (PubMed: [23858451](http://www.uniprot.org/citations/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: [23602554](http://www.uniprot.org/citations/23602554), PubMed: [23601106](http://www.uniprot.org/citations/23601106), PubMed: [29610582](http://www.uniprot.org/citations/29610582), PubMed: [29670289](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/27477283), PubMed: [29670289](http://www.uniprot.org/citations/29670289)). Ability to promote DNA end resection at stalled replication forks is independent of dNTPase activity (PubMed: [29670289](http://www.uniprot.org/citations/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).

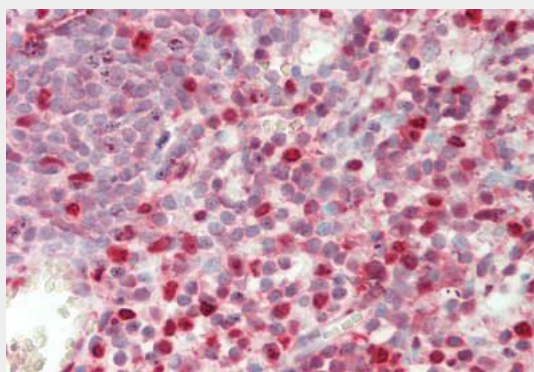
Volume

50 μ l

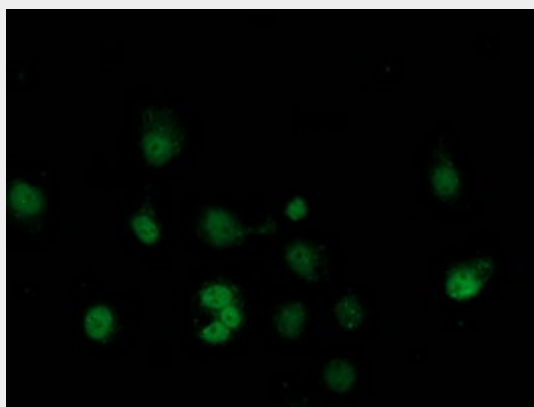
SAMHD1 Antibody (clone 2D7) - Protocols

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

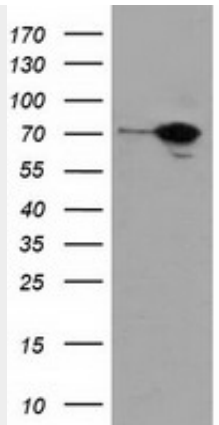
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

SAMHD1 Antibody (clone 2D7) - Images

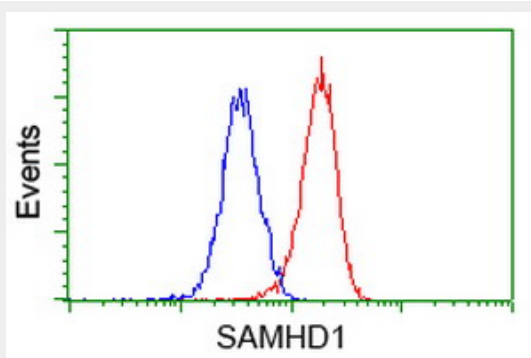
Human Tonsil: Formalin-Fixed, Paraffin-Embedded (FFPE)



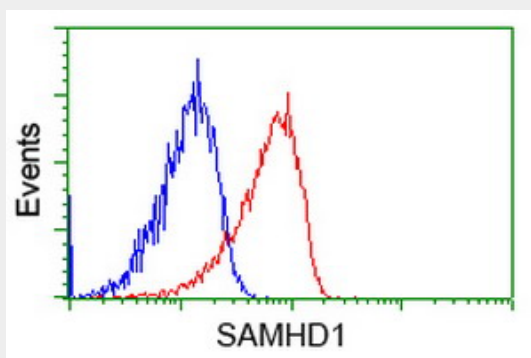
Anti-SAMHD1 mouse monoclonal antibody immunofluorescent staining of COS7 cells transiently...



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



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 2D7) - 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 2D7) - 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).