

KD-Validated Anti-SAMHD1 Rabbit Monoclonal Antibody
Rabbit monoclonal antibody
Catalog # AGI1644**Specification****KD-Validated Anti-SAMHD1 Rabbit Monoclonal Antibody - Product Information**

Application	WB, FC, ICC
Primary Accession	Q9Y3Z3
Reactivity	Human
Clonality	Monoclonal
Isotype	Rabbit IgG
Calculated MW	Predicted, 72 kDa , observed , 72 kDa KDa
Gene Name	SAMHD1
Aliases	SAM And HD Domain Containing Deoxynucleoside Triphosphate Triphosphohydrolase 1; MOP-5; Monocyte Protein 5; SBBI88; HDDC1; Deoxynucleoside Triphosphate Triphosphohydrolase SAMHD1; SAM Domain And HD Domain-Containing Protein 1; Dendritic Cell-Derived IFNG-Induced Protein; SAM Domain And HD Domain 1; HSAMHD1; DNTPase; Mg11; AGS5; DCIP; Aicardi-Goutieres Syndrome 5; HD Domain Containing 1; EC 3.1.5.-; CHBL2; MOP5
Immunogen	A synthesized peptide derived from human SAMHD1

KD-Validated Anti-SAMHD1 Rabbit Monoclonal Antibody - 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)	

KD-Validated Anti-SAMHD1 Rabbit Monoclonal Antibody - 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)

[22056990](http://www.uniprot.org/citations/22056990), PubMed: [23601106](http://www.uniprot.org/citations/23601106), PubMed: [23602554](http://www.uniprot.org/citations/23602554), PubMed: [24336198](http://www.uniprot.org/citations/24336198), PubMed: [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: [22056990](http://www.uniprot.org/citations/22056990), PubMed: [23364794](http://www.uniprot.org/citations/23364794), PubMed: [23601106](http://www.uniprot.org/citations/23601106), PubMed: [23602554](http://www.uniprot.org/citations/23602554), PubMed: [24336198](http://www.uniprot.org/citations/24336198), PubMed: [25038827](http://www.uniprot.org/citations/25038827), PubMed: [26101257](http://www.uniprot.org/citations/26101257), PubMed: [26294762](http://www.uniprot.org/citations/26294762), PubMed: [26431200](http://www.uniprot.org/citations/26431200), PubMed: [28229507](http://www.uniprot.org/citations/28229507)). Likewise, suppresses LINE-1 retrotransposon activity (PubMed: [24035396](http://www.uniprot.org/citations/24035396), PubMed: [24217394](http://www.uniprot.org/citations/24217394), PubMed: [29610582](http://www.uniprot.org/citations/29610582)). 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: [23601106](http://www.uniprot.org/citations/23601106), PubMed: [23602554](http://www.uniprot.org/citations/23602554), 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

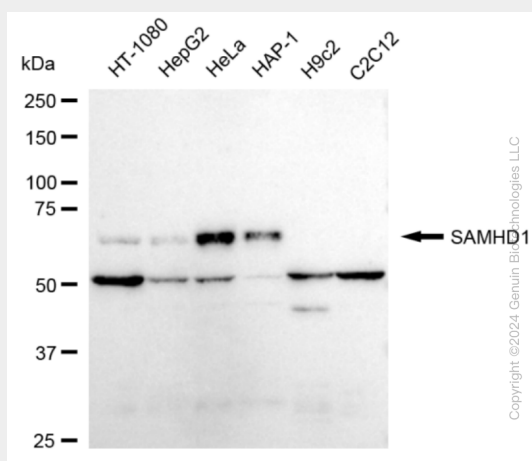
Expressed in heart, skeletal muscle, spleen, liver, small intestine, placenta, lung and peripheral blood leukocytes (PubMed:11064105). No expression is seen in brain and thymus (PubMed:11064105).

KD-Validated Anti-SAMHD1 Rabbit Monoclonal Antibody - Protocols

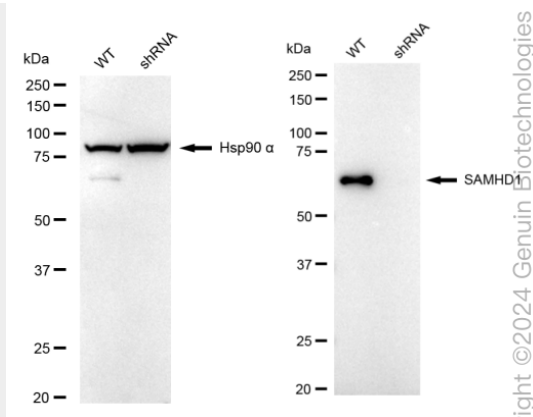
Provided below are standard protocols that you may find useful for product applications.

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

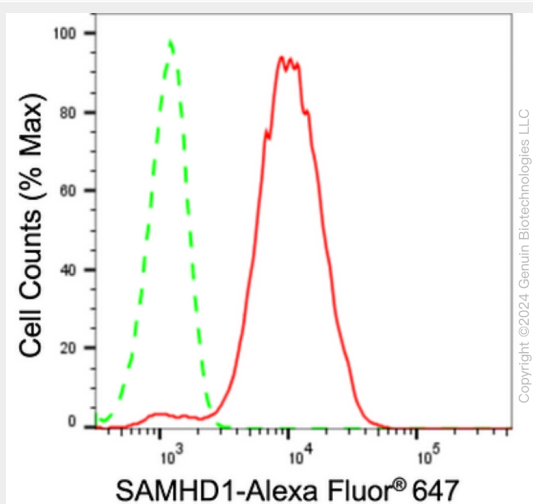
KD-Validated Anti-SAMHD1 Rabbit Monoclonal Antibody - Images



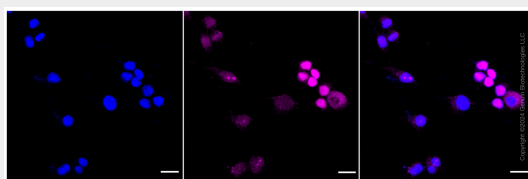
Western blotting analysis using anti-SAMHD1 antibody (Cat#AGI1644). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-SAMHD1 antibody (Cat#AGI1644, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-SAMHD1 antibody (Cat#AGI1644). SAMHD1 expression in wild-type (WT) and SAMHD1 shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-SAMHD1 antibody (Cat#AGI1644, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of SAMHD1 expression in HeLa cells using SAMHD1 antibody (Cat#AGI1644, 1:2,000). Green, isotype control; red, SAMHD1.



Immunocytochemical staining of HeLa cells with anti-SAMHD1 antibody (Cat#AGI1644, 1:1,000). Nuclei were stained blue with DAPI; SAMHD1 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: High. Scale bar: 20 µm.