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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:<a

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.

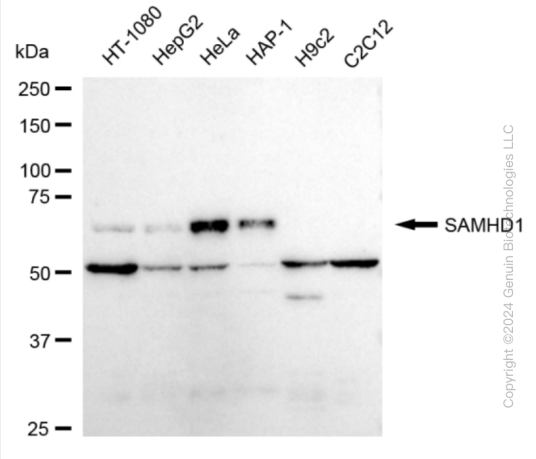
Tissue Location
Expressed in heart, skeletal muscle, spleen, liver, small intestine, placenta, lung and peripheral blood leukocytes (PubMed:11064105). No expression is seen in brain and thymus (PubMed:11064105).

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 Cytomety
- 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.

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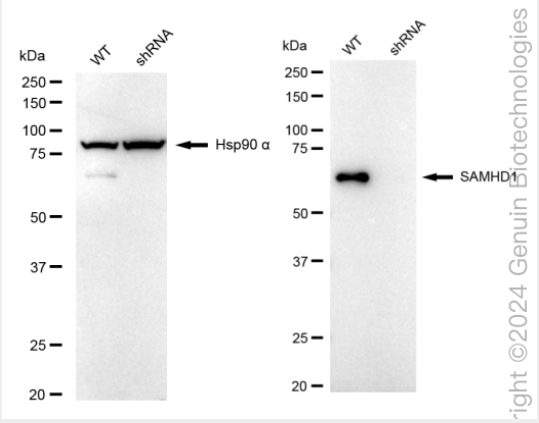
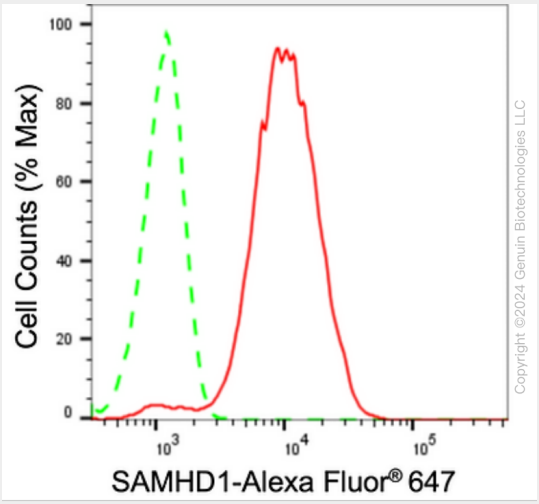
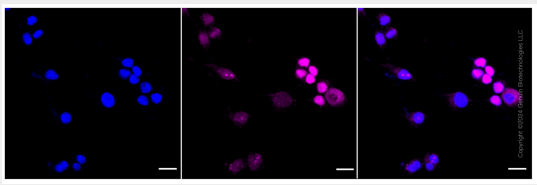


Western blotting analysis using anti-SAMHD1 antibody (Cat#AGI1644). SAMHD1 expression in wild-type (WT) and SAMHD1 shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-SAMHD1 antibody (Cat#AGI1644, 1:5,000) and HRP-conjugated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