

# SAMHD1 Polyclonal Antibody

Catalog # AP73674

## Product Information

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Application	WB, IHC-P
Primary Accession	<a href="#">Q9Y3Z3</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	72201

## Additional Information

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Gene ID	25939
Other Names	SAMHD1; MOP5; SAM domain and HD domain-containing protein 1; Dendritic cell-derived IFNG-induced protein; DCIP; Monocyte protein 5; MOP-5
Dilution	WB~~Western Blot: 1/500 - 1/2000. IHC-p: 1/100-1/300. ELISA: 1/20000. Not yet tested in other applications. IHC-P~~Western Blot: 1/500 - 1/2000. IHC-p: 1/100-1/300. ELISA: 1/20000. Not yet tested in other applications.
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

## Protein Information

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Name	SAMHD1 ( <a href="#">HGNC:15925</a> )
Function	<p>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:<a href="#">19525956</a>, PubMed:<a href="#">21613998</a>, PubMed:<a href="#">21720370</a>, PubMed:<a href="#">22056990</a>, PubMed:<a href="#">23601106</a>, PubMed:<a href="#">23602554</a>, PubMed:<a href="#">24336198</a>, PubMed:<a href="#">26294762</a>, PubMed:<a href="#">26431200</a>, PubMed:<a href="#">28229507</a>, PubMed:<a href="#">28834754</a>, PubMed:<a href="#">29670289</a>). 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:<a href="#">19525956</a>, PubMed:<a href="#">21613998</a>, PubMed:<a href="#">21720370</a>, PubMed:<a href="#">22056990</a>, PubMed:<a href="#">23364794</a>, PubMed:<a href="#">23601106</a>, PubMed:<a href="#">23602554</a>, PubMed:<a href="#">24336198</a>, PubMed:<a href="#">25038827</a>, PubMed:<a href="#">26101257</a>, PubMed:<a href="#">26294762</a>, PubMed:<a href="#">26431200</a>, PubMed:<a href="#">28229507</a>). Likewise, suppresses LINE-1 retrotransposon activity (PubMed:<a href="#">24035396</a>, PubMed:<a href="#">24217394</a>, PubMed:<a href="#">29610582</a>). Not able to</p>

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).

## Background

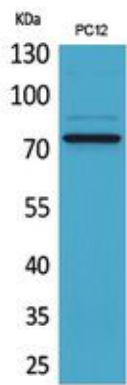
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Protein that acts both as a host restriction factor involved in defense response to virus and as a regulator of DNA end resection at stalled replication forks (PubMed:[19525956](#), PubMed:[21613998](#), PubMed:[21720370](#), PubMed:[23602554](#), PubMed:[23601106](#), PubMed:[22056990](#), PubMed:[24336198](#), PubMed:[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:[23602554](#), PubMed:[23601106](#), PubMed:[23364794](#), PubMed:[25038827](#), PubMed:[26101257](#), PubMed:[22056990](#), PubMed:[24336198](#), PubMed:[28229507](#), PubMed:[26294762](#), PubMed:[26431200](#)). Likewise, suppresses LINE-1 retrotransposon activity (PubMed:[24035396](#), PubMed:[29610582](#), PubMed:[24217394](#)). 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:[23602554](#), PubMed:[23601106](#), 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).

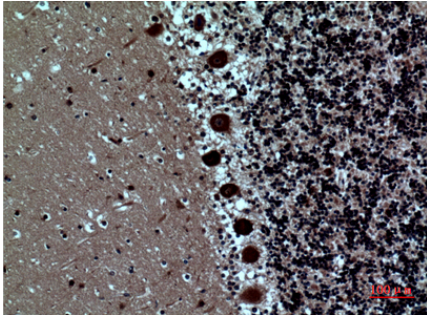
## Images

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Western Blot analysis of PC12 cells using SAMHD1 Polyclonal Antibody.. Secondary antibody was diluted at



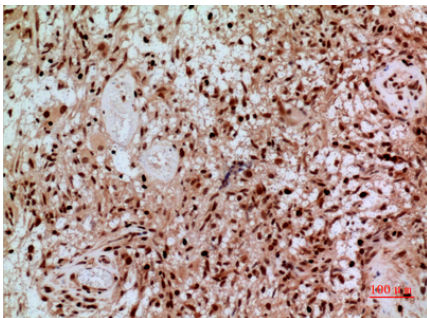
1:20000 cells nucleus extracted by Minute™  
Cytoplasmic and Nuclear Fractionation kit  
(SC-003, Invent biotech, MN, USA).



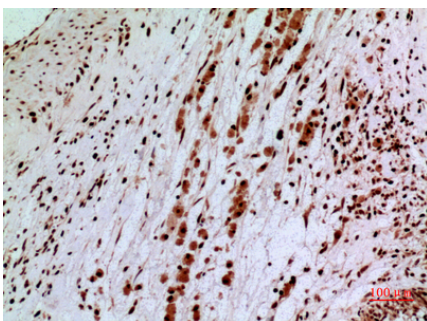
Immunohistochemical analysis of paraffin-embedded  
human-brain, antibody was diluted at 1:100



Immunohistochemical analysis of paraffin-embedded  
human-spleen, antibody was diluted at 1:100



Immunohistochemical analysis of paraffin-embedded  
human-brain, antibody was diluted at 1:100



Immunohistochemical analysis of paraffin-embedded  
human-brain, antibody was diluted at 1:100

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