

## **SAMHD1 Polyclonal Antibody**

**Catalog # AP73674**

## Specification

## SAMHD1 Polyclonal Antibody - Product Information

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

## SAMHD1 Polyclonal Antibody - Additional Information

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~~N/A

## Format

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

## Storage Conditions

-20°C

#### SAMHD1 Polyclonal Antibody - Protein Information

Name SAMHD1 (HGNC:15925)

## Function

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

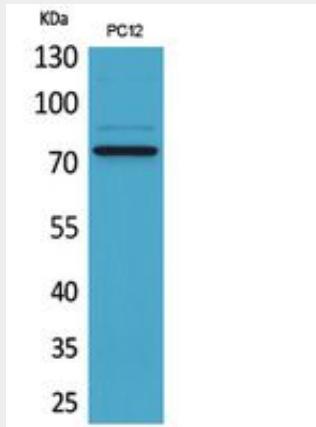
Expressed in heart, skeletal muscle, spleen, liver, small intestine, placenta, lung and peripheral blood leukocytes (PubMed:11064105). No expression is seen in brain and thymus (PubMed:11064105).

## SAMHD1 Polyclonal Antibody - Protocols

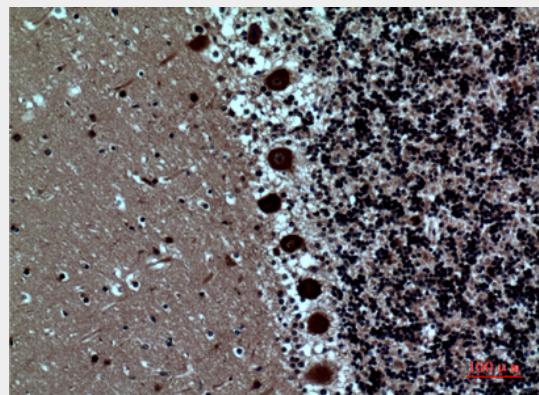
Provided below are standard protocols that you may find useful for product applications.

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

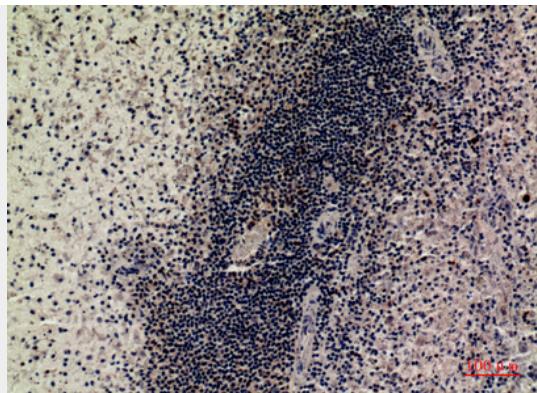
## SAMHD1 Polyclonal Antibody - Images



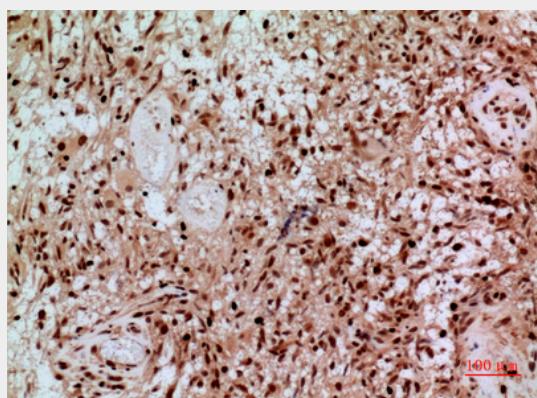
Western Blot analysis of PC12 cells using SAMHD1 Polyclonal Antibody.. Secondary antibody was diluted at 1:20000 cells nucleus extracted by Minute TM Cytoplasmic and Nuclear Fractionation kit (SC-003,Inventbiotech,MN,USA).



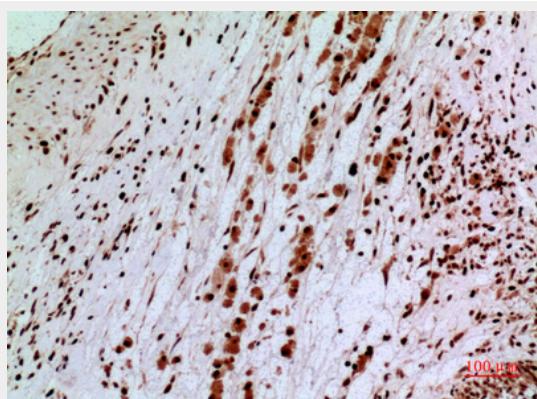
Immunohistochemical analysis of paraffin-embedded human-brain, antibody was diluted at 1:100



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

#### **SAMHD1 Polyclonal Antibody - Background**

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).