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SAMHD1 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5632

Product Information

Application	WB
Primary Accession	Q9Y3Z3
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	72201
Isotype	Rabbit IgG
Antigen Source	HUMAN

Additional Information

Gene ID	25939
Antigen Region	204-230
Other Names	Deoxynucleoside triphosphate triphosphohydrolase SAMHD1, dNTPase, 315-, Dendritic cell-derived IFNG-induced protein, DCIP, Monocyte protein 5, MOP-5, SAM domain and HD domain-containing protein 1, SAMHD1, MOP5
Dilution	WB~~0.25
Target/Specificity	This SAMHD1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 204-230 amino acids from the Central region of human SAMHD1.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	SAMHD1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

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: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).

Background

This gene may play a role in regulation of the innate immune response. The encoded protein is upregulated in response to viral infection and may be involved in mediation of tumor necrosis factor-alpha proinflammatory responses. Mutations in this gene have been associated with Aicardi-Goutieres syndrome. [provided by RefSeq].

References

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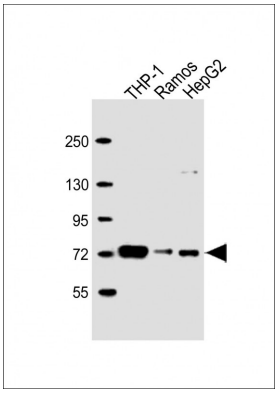
Dale, R.C., et al. Am. J. Med. Genet. A 152A (4), 938-942 (2010) :
Davila, S., et al. Genes Immun. 11(3):232-238(2010)
Rice, G.I., et al. Nat. Genet. 41(7):829-832(2009)
Liao, W., et al. Proteomics 8(13):2640-2650(2008)

Images



All lanes : Anti-SAMHD1 Antibody (Center) at 1:2000 dilution Lane 1: THP-1 whole cell lysate Lane 2: Ramos whole cell lysate Lane 3: HepG2 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 72 kDa Blocking/Dilution buffer: 5% NFDM/TBST.