

Datasheet for ABIN3076631

## SAMHD1 Protein (AA 1-626) (Strep Tag)



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### Overview

Quantity:	250 µg
Target:	SAMHD1
Protein Characteristics:	AA 1-626
Origin:	Human
Source:	Cell-free protein synthesis (CFPS)
Protein Type:	Recombinant
Purification tag / Conjugate:	This SAMHD1 protein is labelled with Strep Tag.
Application:	SDS-PAGE (SDS), ELISA, Western Blotting (WB)

### Product Details

Brand:	AliCE®
Sequence:	<p> MQRADSEQPS KRPRCDDSPR TPSNTPSAEA DWSPGLELHP DYKTWGPEQV CSFLRRGGFE  EPVLLKNIRE NEITGALLPC LDES RFENLG VSSLGERKKL LSYIQLVQI HVDTMKVIND  PIHGHIELHP LLVRIIDTPQ FQRLRYIKQL GGGYYVFPGA SHNRFEHSLG VGYPAGCLVH  ALGEKQPELQ ISERDVLVCVQ IAGLCHDLGH GPF SHMFDGR FIPLARPEVK WTHEQGSVMM  FEHLINSNGI KPVMEQYGLI PEEDICFIKE QIVGPLESPV EDSLWPYKGR PENKSFLYEI  VSNKRNGIDV DKWDYFARDC HHLGIQNNFD YKRFIKFARV CEVDNELRIC ARDKEVGNLY  DMFHTRNSLH RRAYQHKVGN IIDTMITDAF LKADDYIEIT GAGGKKYRIS TAIDDMEAYT  KLTDNIFLEI LYSTDPKLKD AREILKQIEY RNLFKYVGET QPTGQIKIKR EDYESLPKEV  ASAKPKVLLD VKLKAEDFIV DVINMDYGMQ EKNPIDHVSF YCKTAPNRAI RITKNQVSQL  LPEKFAEQLI RVYCKKVDRK SLYAARQYFV QWCADRNFTK PQDGDVIAPL ITPQKKEWND  STSVQNPTRL REASKSRVQL FKDDPM </p>

**Sequence without tag. The proposed Strep-Tag is based on experience s with the expression system, a different complexity of the protein could make another tag necessary. In case you have a special request, please contact us.**

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### Characteristics:

#### Key Benefits:

- Made in Germany - from design to production - by highly experienced protein experts.
- Protein expressed with ALiCE® and purified in one-step affinity chromatography
- These proteins are normally active (enzymatically functional) as our customers have reported (not tested by us and not guaranteed).
- State-of-the-art algorithm used for plasmid design (Gene synthesis).

This protein is a **made-to-order protein** and will be made for the first time for your order. Our experts in the lab try to ensure that you receive soluble protein.

The big advantage of ordering our **made-to-order proteins** in comparison to ordering custom made proteins from other companies is that there is no financial obligation in case the protein cannot be expressed or purified.

#### Expression System:

- ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.
- During lysate production, the cell wall and other cellular components that are not required for protein production are removed, leaving only the protein production machinery and the mitochondria to drive the reaction. During our lysate completion steps, the additional components needed for protein production (amino acids, cofactors, etc.) are added to produce something that functions like a cell, but without the constraints of a living system - all that's needed is the DNA that codes for the desired protein!

#### Concentration:

- The concentration of our recombinant proteins is measured using the absorbance at 280nm.
- The protein's absorbance will be measured against its specific reference buffer.
- We use the ExPASy's ProtParam tool to determine the absorption coefficient of each protein.

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### Purification:

One-step Strep-tag purification of proteins expressed in Almost Living Cell-Free Expression System (ALiCE®).

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### Purity:

> 70-80 % as determined by SDS PAGE, Western Blot and analytical SEC (HPLC).

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## Product Details

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Grade: custom-made

## Target Details

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Target: SAMHD1

Alternative Name: SAMHD1 ([SAMHD1 Products](#))

Background: Deoxynucleoside triphosphate triphosphohydrolase SAMHD1 (dNTPase) (EC 3.1.5.-) (Dendritic cell-derived IFNG-induced protein) (DCIP) (Monocyte protein 5) (MOP-5) (SAM domain and HD domain-containing protein 1) (hSAMHD1),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: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). {ECO:0000250|UniProtKB:Q60710,

## Target Details

ECO:0000269|PubMed:19525956, ECO:0000269|PubMed:21613998,  
ECO:0000269|PubMed:21720370, ECO:0000269|PubMed:22056990,  
ECO:0000269|PubMed:23364794, ECO:0000269|PubMed:23601106,  
ECO:0000269|PubMed:23602554, ECO:0000269|PubMed:23858451,  
ECO:0000269|PubMed:24035396, ECO:0000269|PubMed:24217394,  
ECO:0000269|PubMed:24336198, ECO:0000269|PubMed:25038827,  
ECO:0000269|PubMed:26101257, ECO:0000269|PubMed:26294762,  
ECO:0000269|PubMed:26431200, ECO:0000269|PubMed:27477283,  
ECO:0000269|PubMed:28229507, ECO:0000269|PubMed:28834754,  
ECO:0000269|PubMed:29610582, ECO:0000269|PubMed:29670289}.

Molecular Weight: 72.2 kDa

UniProt: [Q9Y3Z3](#)

## Application Details

Application Notes: In addition to the applications listed above we expect the protein to work for functional studies as well. As the protein has not been tested for functional studies yet we cannot offer a guarantee though.

Comment: ALiCE®, our Almost Living Cell-Free Expression System is based on a lysate obtained from *Nicotiana tabacum* c.v.. This contains all the protein expression machinery needed to produce even the most difficult-to-express proteins, including those that require post-translational modifications.

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Restrictions: For Research Use only

## Handling

Format: Liquid

Buffer: The buffer composition is at the discretion of the manufacturer.

Standard Storage Buffer: PBS pH 7.4, 10 % Glycerol **Might differ depending on protein.**

Handling

Handling Advice: Avoid repeated freeze-thaw cycles.

Storage: -80 °C

Storage Comment: Store at -80°C.

Expiry Date: 12 months