

# ZC3HAV1 Antibody

Catalog # ASC11164

## Product Information

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<b>Application</b>	WB, IF, ICC, E
<b>Primary Accession</b>	<a href="#">Q7Z2W4</a>
<b>Other Accession</b>	<a href="#">NP_078901</a> , <a href="#">27477138</a>
<b>Reactivity</b>	Human
<b>Host</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	IgG
<b>Calculated MW</b>	101431
<b>Concentration (mg/ml)</b>	1 mg/mL
<b>Conjugate</b>	Unconjugated
<b>Application Notes</b>	ZC3HAV1 antibody can be used for detection of ZC3HAV1 by Western blot at 1 µg/mL. Antibody can also be used for immunocytochemistry starting at 20 µg/mL. For immunofluorescence start at 20 µg/mL.

## Additional Information

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<b>Gene ID</b>	56829
<b>Other Names</b>	Zinc finger CCCH-type antiviral protein 1, ADP-ribosyltransferase diphtheria toxin-like 13, ARTD13, Zinc finger CCCH domain-containing protein 2, Zinc finger antiviral protein, ZAP, ZC3HAV1, ZC3HDC2
<b>Target/Specificity</b>	ZC3HAV1;
<b>Reconstitution &amp; Storage</b>	ZC3HAV1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
<b>Precautions</b>	ZC3HAV1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

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<b>Name</b>	ZC3HAV1 ( <a href="#">HGNC:23721</a> )
<b>Synonyms</b>	ZC3HDC2
<b>Function</b>	Antiviral protein which inhibits the replication of viruses by recruiting the cellular RNA degradation machineries to degrade the viral mRNAs. Binds to a ZAP-responsive element (ZRE) present in the target viral mRNA, recruits cellular poly(A)-specific ribonuclease PARN to remove the poly(A) tail, and the 3'-5' exoribonuclease complex exosome to degrade the RNA body from the 3'-end. It also recruits the decapping complex DCP1-DCP2 through RNA

helicase p72 (DDX17) to remove the cap structure of the viral mRNA to initiate its degradation from the 5'-end. Its target viruses belong to families which include retroviridae: human immunodeficiency virus type 1 (HIV-1), moloney and murine leukemia virus (MoMLV) and xenotropic MuLV-related virus (XMRV), filoviridae: ebola virus (EBOV) and marburg virus (MARV), togaviridae: sindbis virus (SINV) and Ross river virus (RRV). Specifically targets the multiply spliced but not unspliced or singly spliced HIV-1 mRNAs for degradation. Isoform 1 is a more potent viral inhibitor than isoform 2. Isoform 2 acts as a positive regulator of RIGI signaling resulting in activation of the downstream effector IRF3 leading to the expression of type I IFNs and IFN stimulated genes (ISGs).

#### Cellular Location

[Isoform 1]: Cytoplasm {ECO:0000250|UniProtKB:Q8K3Y6}. Nucleus {ECO:0000250|UniProtKB:Q8K3Y6} Note=Localizes in the cytoplasm at steady state, but shuttles between nucleus and cytoplasm in a XPO1-dependent manner {ECO:0000250|UniProtKB:Q8K3Y6}

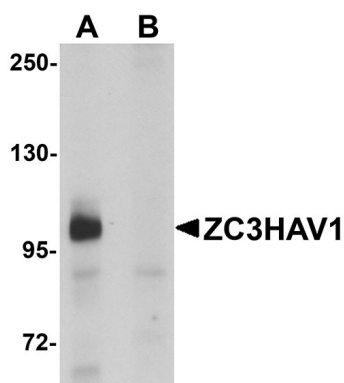
## Background

**ZC3HAV1 Antibody:** The zinc finger antiviral protein (ZC3HAV1) is a CCCH type zinc finger protein that induces an innate immunity to infections by retrovirus by preventing the accumulation of viral RNAs in the cytoplasm and recruits the RNA processing exosome to degrade target RNAs, thereby inhibiting virus replication. ZC3HAV1 is localized in the cytoplasm at steady state, but shuttles between nucleus and cytoplasm in a XPO1-dependent manner. ZAP is a direct target gene of IRF3 action in cellular antiviral responses.

## References

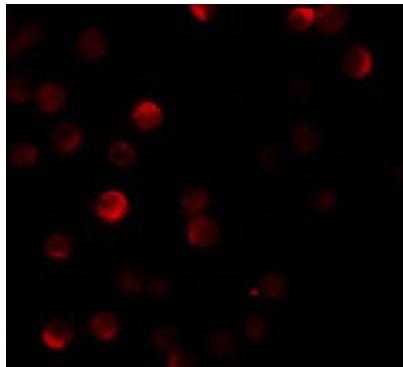
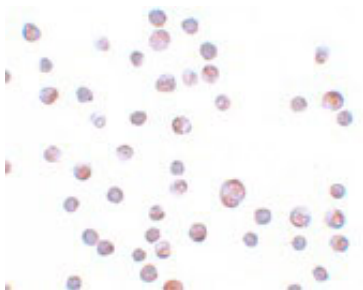
Gao G, Guo X, and Goff SP. Inhibition of retroviral RNA production by ZAP, a CCCH-Type zinc finger protein. *Science* 2002; 297:1703-6.  
 Guo X, Ma J, Sun J, et al. The zinc-finger antiviral protein recruits the RNA processing exosome to degrade the target mRNA. *Proc. Natl. Acad. Sci. USA* 2007; 104:151-6.  
 MacDonald MR, Machlin ES, Albin OR, et al. The zinc finger antiviral protein acts synergistically with an interferon-induced factor for maximal activity against alphaviruses. *J. Virol.* 2007; 81:13509-18.  
 Wang N, Dong Q, Li J, et al. Viral induction of the zinc finger antiviral protein is IRF3-dependent but NF-kappaB-independent. *J. Biol. Chem.* 2010; 285:6080-90.

## Images



Western blot analysis of ZC3HAV1 in HeLa cell lysate with ZC3HAV1 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.

Immunocytochemistry of ZC3HAV1 in HeLa cells with ZC3HAV1 antibody at 20 µg/mL.



Immunofluorescence of ZC3HAV1 in HeLa cells with ZC3HAV1 antibody at 20  $\mu\text{g/mL}$ .

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