

**ZBP1 Antibody (C-Terminus)**  
**Rabbit Polyclonal Antibody**  
**Catalog # ALS12430****Specification**

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**ZBP1 Antibody (C-Terminus) - Product Information**

Application	<b>WB, IF, IHC</b>
Primary Accession	<a href="#">O9H171</a>
Reactivity	<b>Human, Mouse, Rat</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Calculated MW	<b>46kDa KDa</b>

**ZBP1 Antibody (C-Terminus) - Additional Information****Gene ID** 81030**Other Names**

Z-DNA-binding protein 1, Tumor stroma and activated macrophage protein DLM-1, ZBP1, C20orf183, DLM1

**Reconstitution & Storage**

Short term 4°C, long term aliquot and store at -20°C, avoid freeze thaw cycles. Store undiluted.

**Precautions**

ZBP1 Antibody (C-Terminus) is for research use only and not for use in diagnostic or therapeutic procedures.

**ZBP1 Antibody (C-Terminus) - Protein Information****Name** ZBP1 {ECO:0000303|PubMed:16876127, ECO:0000312|HGNC:HGNC:16176}**Function**

Key innate sensor that recognizes and binds Z-RNA structures, which are produced by a number of viruses, such as herpesvirus, orthomyxovirus or flavivirus, and triggers different forms of cell death (PubMed: <http://www.uniprot.org/citations/32200799> target="\_blank">32200799</a>). ZBP1 acts as an essential mediator of pyroptosis, necroptosis and apoptosis (PANoptosis), an integral part of host defense against pathogens, by activating RIPK3, caspase-8 (CASP8), and the NLRP3 inflammasome (By similarity). Key activator of necroptosis, a programmed cell death process in response to death-inducing TNF-alpha family members, via its ability to bind Z-RNA: once activated upon Z-RNA-binding, ZBP1 interacts and stimulates RIPK3 kinase, which phosphorylates and activates MLKL, triggering execution of programmed necrosis (By similarity). In addition to TNF-induced necroptosis, necroptosis can also take place in the nucleus in response to orthomyxoviruses infection: ZBP1 recognizes and binds Z-RNA structures that are produced in infected nuclei by orthomyxoviruses, such as the influenza A virus (IAV), leading to ZBP1 activation, RIPK3 stimulation and subsequent MLKL phosphorylation, triggering disruption of the nuclear envelope and leakage of cellular DNA into the cytosol (PubMed: <http://www.uniprot.org/citations/32200799> target="\_blank">32200799</a>).

ZBP1-dependent cell death in response to IAV infection promotes interleukin-1 alpha (IL1A) induction in an NLRP3- inflammasome-independent manner: IL1A expression is required for the optimal interleukin-1 beta (IL1B) production, and together, these cytokines promote infiltration of inflammatory neutrophils to the lung, leading to the formation of neutrophil extracellular traps (By similarity). In addition to its direct role in driving necroptosis via its ability to sense Z-RNAs, also involved in PANoptosis triggered in response to bacterial infection: component of the AIM2 PANoptosome complex, a multiprotein complex that triggers PANoptosis (By similarity). Also acts as the apical sensor of fungal infection responsible for activating PANoptosis (By similarity). Involved in CASP8-mediated cell death via its interaction with RIPK1 but independently of its ability to sense Z-RNAs (By similarity). In some cell types, also able to restrict viral replication by promoting cell death-independent responses (By similarity). In response to Zika virus infection in neurons, promotes a cell death-independent pathway that restricts viral replication: together with RIPK3, promotes a death- independent transcriptional program that modifies the cellular metabolism via up-regulation expression of the enzyme ACOD1/IRG1 and production of the metabolite itaconate (By similarity). Itaconate inhibits the activity of succinate dehydrogenase, generating a metabolic state in neurons that suppresses replication of viral genomes (By similarity).

#### Cellular Location

Cytoplasm. Nucleus. Note=Mainly cytoplasmic (PubMed:16876127, PubMed:16990255). Accumulates in the nucleus in response to influenza A virus (IAV) infection: senses IAV defective viral genomes RNA in the nucleus (By similarity). {ECO:0000250|UniProtKB:Q9QY24, ECO:0000269|PubMed:16876127, ECO:0000269|PubMed:16990255}

#### Tissue Location

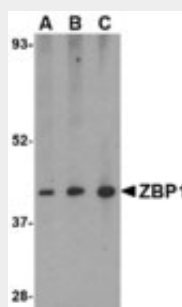
Highly expressed in lymphatic tissues including lymph node, leukocytes, tonsil, bone marrow and spleen (PubMed:11842111). Expressed to a lesser extent in thymus, lung and liver (PubMed:11842111).

### ZBP1 Antibody (C-Terminus) - Protocols

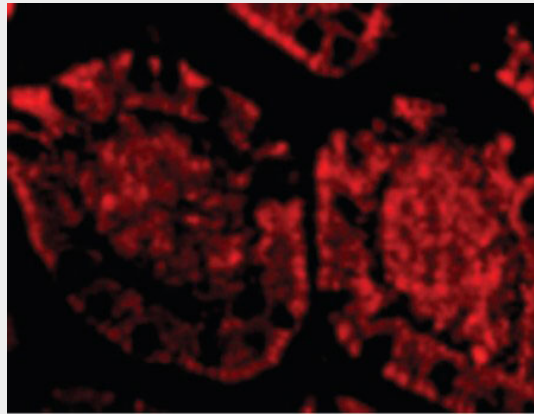
Provided below are standard protocols that you may find useful for product applications.

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

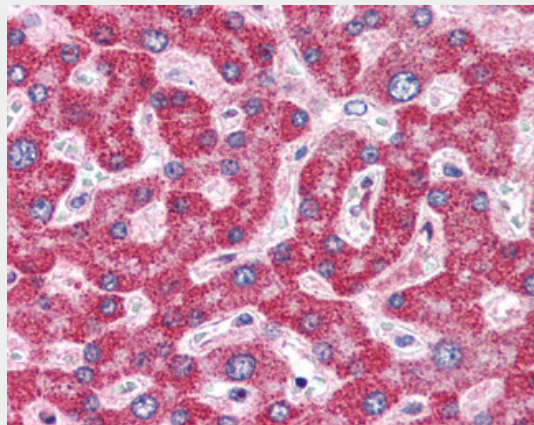
### ZBP1 Antibody (C-Terminus) - Images



Western blot of ZBP1 in mouse small intestine tissue lysate with ZBP1 antibody at (A) 0.5, (B) 1...



Immunofluorescence of ZBP1 in Human Small Intestine cells with ZBP1 antibody at 20 ug/ml.



Anti-ZBP1 antibody IHC of human liver.

### **ZBP1 Antibody (C-Terminus) - Background**

Participates in the detection by the host's innate immune system of DNA from viral, bacterial or even host origin. Plays a role in host defense against tumors and pathogens. Acts as a cytoplasmic DNA sensor which, when activated, induces the recruitment of TBK1 and IRF3 to its C-terminal region and activates the downstream interferon regulatory factor (IRF) and NF-kappa B transcription factors, leading to type-I interferon production. ZBP1-induced NF-kappaB activation probably involves the recruitment of the RHIM containing kinases RIPK1 and RIPK3 (By similarity).

### **ZBP1 Antibody (C-Terminus) - References**

- Rothenburg S.,et al.Nucleic Acids Res. 30:993-1000(2002).
- Heil O.,et al.Submitted (JUN-2005) to the EMBL/GenBank/DDBJ databases.
- Ota T.,et al.Nat. Genet. 36:40-45(2004).
- Deloukas P.,et al.Nature 414:865-871(2001).
- Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.