

**Anti-AIM2 Picoband Antibody**  
**Catalog # ABO12369****Specification**

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**Anti-AIM2 Picoband Antibody - Product Information**

Application	WB, IHC-P
Primary Accession	<a href="#">O14862</a>
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for Interferon-inducible protein AIM2(AIM2) detection. Tested with WB, IHC-P in Human;Mouse;Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-AIM2 Picoband Antibody - Additional Information**

**Gene ID** 9447

**Other Names**

Interferon-inducible protein AIM2, Absent in melanoma 2, AIM2

**Calculated MW**

38954 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat  
Western blot, 0.1-0.5 µg/ml, Human

**Subcellular Localization**

Nucleus. Cytoplasm. Activated inflammasomes can aggregate in the cytosol as speck-like particles.

**Tissue Specificity**

Expressed in spleen, small intestine, peripheral blood leukocytes, and testis. .

**Protein Name**

Interferon-inducible protein AIM2

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Na<sub>3</sub>.

**Immunogen**

E.coli-derived human AIM2 recombinant protein (Position: L14-H215). Human AIM2 shares 53.8% amino acid (aa) sequence identity with mouse AIM2.

**Purification**

Immunogen affinity purified.

**Cross Reactivity**

No cross reactivity with other proteins

**Storage**

**At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.**

**Anti-AIM2 Picoband Antibody - Protein Information**

**Name** AIM2 {ECO:0000303|PubMed:9242382, ECO:0000312|HGNC:HGNC:357}

**Function**

Sensor component of the AIM2 inflammasome, which mediates inflammasome activation in response to the presence of double-stranded DNA (dsDNA) in the cytosol, leading to subsequent pyroptosis (PubMed:<a href="http://www.uniprot.org/citations/17726700" target="\_blank">17726700</a>, PubMed:<a href="http://www.uniprot.org/citations/19158675" target="\_blank">19158675</a>, PubMed:<a href="http://www.uniprot.org/citations/19158676" target="\_blank">19158676</a>, PubMed:<a href="http://www.uniprot.org/citations/19158679" target="\_blank">19158679</a>, PubMed:<a href="http://www.uniprot.org/citations/20566831" target="\_blank">20566831</a>, PubMed:<a href="http://www.uniprot.org/citations/23530044" target="\_blank">23530044</a>, PubMed:<a href="http://www.uniprot.org/citations/26197926" target="\_blank">26197926</a>, PubMed:<a href="http://www.uniprot.org/citations/26583071" target="\_blank">26583071</a>, PubMed:<a href="http://www.uniprot.org/citations/29440442" target="\_blank">29440442</a>, PubMed:<a href="http://www.uniprot.org/citations/33980849" target="\_blank">33980849</a>, PubMed:<a href="http://www.uniprot.org/citations/37364111" target="\_blank">37364111</a>). Inflammasomes are supramolecular complexes that assemble in the cytosol in response to pathogens and other damage-associated signals and play critical roles in innate immunity and inflammation (PubMed:<a href="http://www.uniprot.org/citations/17726700" target="\_blank">17726700</a>, PubMed:<a href="http://www.uniprot.org/citations/19158675" target="\_blank">19158675</a>, PubMed:<a href="http://www.uniprot.org/citations/19158676" target="\_blank">19158676</a>, PubMed:<a href="http://www.uniprot.org/citations/19158679" target="\_blank">19158679</a>, PubMed:<a href="http://www.uniprot.org/citations/20566831" target="\_blank">20566831</a>, PubMed:<a href="http://www.uniprot.org/citations/26197926" target="\_blank">26197926</a>, PubMed:<a href="http://www.uniprot.org/citations/29440442" target="\_blank">29440442</a>, PubMed:<a href="http://www.uniprot.org/citations/33980849" target="\_blank">33980849</a>). Acts as a recognition receptor (PRR): specifically recognizes and binds dsDNA in the cytosol, and mediates the formation of the inflammasome polymeric complex composed of AIM2, CASP1 and PYCARD/ASC (PubMed:<a href="http://www.uniprot.org/citations/17726700" target="\_blank">17726700</a>, PubMed:<a href="http://www.uniprot.org/citations/19158675" target="\_blank">19158675</a>, PubMed:<a href="http://www.uniprot.org/citations/19158676" target="\_blank">19158676</a>, PubMed:<a href="http://www.uniprot.org/citations/19158679" target="\_blank">19158679</a>, PubMed:<a href="http://www.uniprot.org/citations/20566831" target="\_blank">20566831</a>, PubMed:<a href="http://www.uniprot.org/citations/26197926" target="\_blank">26197926</a>, PubMed:<a href="http://www.uniprot.org/citations/29440442" target="\_blank">29440442</a>, PubMed:<a href="http://www.uniprot.org/citations/33980849" target="\_blank">33980849</a>). Recruitment of pro-caspase-1 (proCASP1) to the AIM2 inflammasome promotes caspase-1 (CASP1) activation, which subsequently cleaves and activates inflammatory cytokines IL1B and IL18 and gasdermin-D (GSDMD), promoting cytokine secretion (PubMed:<a href="http://www.uniprot.org/citations/17726700" target="\_blank">17726700</a>, PubMed:<a href="http://www.uniprot.org/citations/19158675" target="\_blank">19158675</a>, PubMed:<a href="http://www.uniprot.org/citations/17726700" target="\_blank">17726700</a>, PubMed:<a href="http://www.uniprot.org/citations/19158675" target="\_blank">19158675</a>, PubMed:<a href="http://www.uniprot.org/citations/17726700" target="\_blank">17726700</a>, PubMed:<a href="http://www.uniprot.org/citations/19158675" target="\_blank">19158675</a>).

PubMed:<a href="http://www.uniprot.org/citations/19158676" target="\_blank">19158676</a>, PubMed:<a href="http://www.uniprot.org/citations/19158679" target="\_blank">19158679</a>, PubMed:<a href="http://www.uniprot.org/citations/20566831" target="\_blank">20566831</a>). In some cells, CASP1 activation mediates cleavage and activation of GSDMD, triggering pyroptosis without promoting cytokine secretion (PubMed:<a href="http://www.uniprot.org/citations/19158675" target="\_blank">19158675</a>, PubMed:<a href="http://www.uniprot.org/citations/19158676" target="\_blank">19158676</a>). Detects cytosolic dsDNA of viral and bacterial origin in a non-sequence-specific manner (PubMed:<a href="http://www.uniprot.org/citations/17726700" target="\_blank">17726700</a>, PubMed:<a href="http://www.uniprot.org/citations/19158675" target="\_blank">19158675</a>, PubMed:<a href="http://www.uniprot.org/citations/19158676" target="\_blank">19158676</a>, PubMed:<a href="http://www.uniprot.org/citations/19158679" target="\_blank">19158679</a>, PubMed:<a href="http://www.uniprot.org/citations/20566831" target="\_blank">20566831</a>, PubMed:<a href="http://www.uniprot.org/citations/26197926" target="\_blank">26197926</a>, PubMed:<a href="http://www.uniprot.org/citations/26583071" target="\_blank">26583071</a>, PubMed:<a href="http://www.uniprot.org/citations/29440442" target="\_blank">29440442</a>, PubMed:<a href="http://www.uniprot.org/citations/33980849" target="\_blank">33980849</a>). Involved in the DNA damage response caused by acute ionizing radiation by mediating pyroptosis of intestinal epithelial cells and bone marrow cells in response to double-strand DNA breaks (By similarity). Mechanistically, AIM2 senses DNA damage in the nucleus to mediate inflammasome assembly and inflammatory cell death (By similarity). Also acts as a regulator of neurodevelopment via its role in the DNA damage response: acts by promoting neural cell death in response to DNA damage in the developing brain, thereby purging genetically compromised cells of the central nervous system (By similarity). Pyroptosis mediated by the AIM2 inflammasome in response to DNA damage is dependent on GSDMD without involving IL1B and IL18 cytokine secretion (By similarity). Also acts as a mediator of pyroptosis, necroptosis and apoptosis (PANoptosis), an integral part of host defense against pathogens, in response to bacterial infection (By similarity). Can also trigger PYCARD/ASC- dependent, caspase-1-independent cell death that involves caspase-8 (CASP8) (By similarity).

#### Cellular Location

Cytoplasm. Inflammasome. Nucleus. Note=Activated inflammasomes can aggregate in the cytosol as speck-like particles (PubMed:19158675, PubMed:19158676, PubMed:19158679). Activated inflammasomes can also aggregate in the nucleus in response to DNA damage: AIM2 is recruited to double-strand DNA breaks and mediates activation of the AIM2 inflammasome (By similarity). {ECO:0000250|UniProtKB:Q91VJ1, ECO:0000269|PubMed:19158675, ECO:0000269|PubMed:19158676, ECO:0000269|PubMed:19158679}

#### Tissue Location

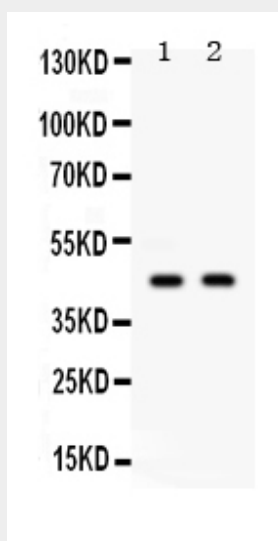
Expressed in spleen, small intestine, peripheral blood leukocytes, and testis.

#### Anti-AIM2 Picoband Antibody - Protocols

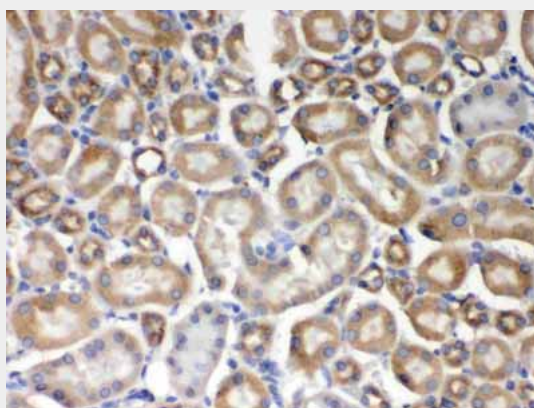
Provided below are standard protocols that you may find useful for product applications.

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

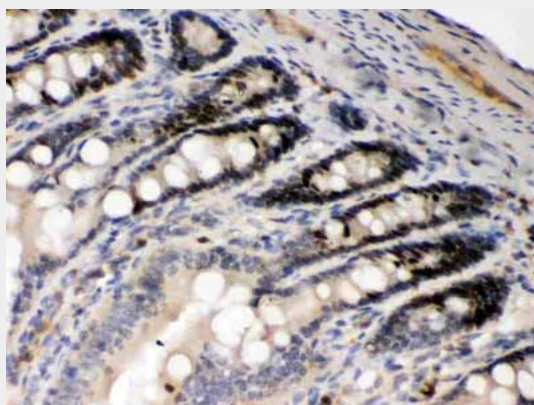
#### Anti-AIM2 Picoband Antibody - Images



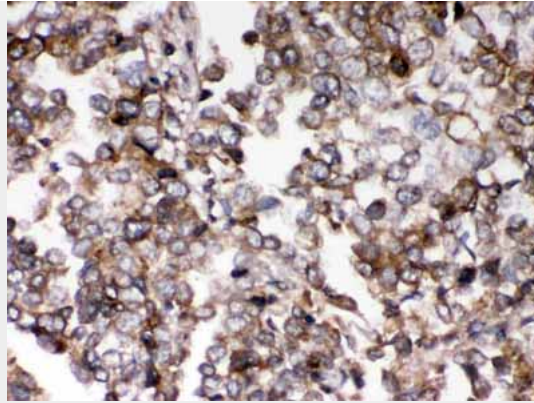
Anti- AIM2 Picoband antibody, ABO12369, Western blottingAll lanes: Anti AIM2 (ABO12369) at 0.5ug/mlLane 1: HELA Whole Cell Lysate at 40ugLane 2: SW620 Whole Cell Lysate at 40ugPredicted bind size: 39KDObserved bind size: 45KD



Anti- AIM2 Picoband antibody, ABO12369, IHC(P)IHC(P): Mouse Kidney Tissue



Anti- AIM2 Picoband antibody, ABO12369, IHC(P)IHC(P): Rat Intestine Tissue



Anti- AIM2 Picoband antibody, ABO12369, IHC(P)IHC(P): Human Lung Cancer Tissue

#### **Anti-AIM2 Picoband Antibody - Background**

Interferon-inducible protein AIM2, also known as absent in melanoma 2 or simply AIM2, is a protein that in humans is encoded by the AIM2 gene. It is mapped to 1q22. AIM2 is a member of the Ifi202/IFI16 family. It plays a putative role in tumorigenic reversion and may control cell proliferation. Interferon-gamma induces expression of AIM2. Though there has been virtually no biochemistry performed, a model based on cell-based or in vivo experiments has led to the current model of how AIM2 triggers the inflammasome. The C-terminal HIN domain binds double stranded DNA (either viral, bacterial, or even host) and acts as a cytosolic dsDNA sensor. This leads to the oligomerization of the inflammasome complex. The N-terminal pyrin domain of AIM2 interacts with the pyrin domain of another protein ASC (or Apoptosis-associated Speck-like protein containing a caspase activation and recruitment domain). ASC also contains a CARD domain (caspase activation and recruitment domain), that recruits procaspase-1 to the complex. This leads to the autoactivation of caspase-1, an enzyme that processes proinflammatory cytokines (IL-1 $\beta$  and IL-18).