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Aim2 (rodent) Antibody (internal region, near N-Term)

Peptide-affinity purified goat antibody
Catalog # AF3911a

Specification

Aim2 (rodent) Antibody (internal region, near N-Term) - Product Information

Application	**E**
Primary Accession	Q91VJ1
Other Accession	NP_001013801.2, 383619, 383619 (mouse), 304987 (rat)
Predicted	**Mouse, Rat**
Host	**Goat**
Clonality	**Polyclonal**
Concentration	**0.5 mg/ml**
Isotype	**IgG**
Calculated MW	**40155**

Aim2 (rodent) Antibody (internal region, near N-Term) - Additional Information

Gene ID 383619

Other Names
Interferon-inducible protein AIM2, Interferon-inducible protein 210, Ifi-210, Interferon-inducible protein p210, Aim2, Gm1313, Ifi210

Format
0.5 mg/ml in Tris saline, 0.02% sodium azide, pH7.3 with 0.5% bovine serum albumin

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
Aim2 (rodent) Antibody (internal region, near N-Term) is for research use only and not for use in diagnostic or therapeutic procedures.

Aim2 (rodent) Antibody (internal region, near N-Term) - Protein Information

Name Aim2 {ECO:0000303|PubMed:19158676, ECO:0000312|MGI:MGI:2686159}

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:19158679, PubMed:19131592, PubMed:20351692, PubMed:<a href="http://www.uniprot.org/citations/19158675"

target="_blank">19158675, PubMed:19158676, PubMed:20351693, PubMed:20417169, PubMed:20457908, PubMed:21902795, PubMed:32350463, PubMed:34006824, PubMed:23567559). 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:19131592, PubMed:20351692, PubMed:19158675, PubMed:19158676, PubMed:20351693, PubMed:20417169, PubMed:20457908, PubMed:21902795, PubMed:23567559, PubMed:32350463). 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:19131592, PubMed:20351692, PubMed:19158675, PubMed:19158676, PubMed:20351693, PubMed:20417169, PubMed:20457908, PubMed:21902795, PubMed:23567559). 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:19158676). In some cells, CASP1 activation mediates cleavage and activation of GSDMD, triggering pyroptosis without promoting cytokine secretion (PubMed:27846608, PubMed:32350463). Detects cytosolic dsDNA of viral and bacterial origin in a non- sequence-specific manner (PubMed:19131592, PubMed:19158675, PubMed:20351692, PubMed:23567559). 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 (PubMed:27846608). Mechanistically, AIM2 senses DNA damage in the nucleus to mediate inflammasome assembly and inflammatory cell death (PubMed:27846608). 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 (PubMed:32350463). Pyroptosis mediated by the AIM2 inflammasome in response to DNA damage is dependent on GSDMD without involving IL1B and IL18 cytokine secretion (PubMed:27846608, PubMed:<a

href="http://www.uniprot.org/citations/32350463" target="_blank">32350463). Also acts as a mediator of pyroptosis, necroptosis and apoptosis (PANoptosis), an integral part of host defense against pathogens, in response to bacterial infection (PubMed:34471287). Can also trigger PYCARD/ASC-dependent, caspase-1-independent cell death that involves caspase-8 (CASP8) (PubMed:22555457).

Cellular Location
Cytoplasm. Inflammasome. Nucleus. Note=Activated inflammasomes can aggregate in the cytosol as speck-like particles (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 (PubMed:27846608)

Tissue Location
Expressed in developing neurons (PubMed:27561456). Highly expressed in regulatory T-cells (Treg) (PubMed:33505023)

Aim2 (rodent) Antibody (internal region, near N-Term) - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Aim2 (rodent) Antibody (internal region, near N-Term) - Images

Aim2 (rodent) Antibody (internal region, near N-Term) - References

Cytosolic DNA triggers mitochondrial apoptosis via DNA damage signaling proteins independently of AIM2 and RNA polymerase III. Wenzel M, Wunderlich M, Besch R, Poeck H, Willms S, Schwantes A, Kremer M, Sutter G, Endres S, Schmidt A, Rothenfusser S. J Immunol. 2012 Jan 1;188(1):394-403. PMID: 22140256