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AIM2 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO2057a

Product Information

Application	WB, FC, ICC, E
Primary Accession	O14862
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	3C4G11
Isotype	IgG1
Calculated MW	38954
Description	AIM2 is a member of the IFI20X /IFI16 family. It plays a putative role in tumorigenic reversion and may control cell proliferation. Interferon-gamma induces expression of AIM2.
Immunogen	Purified recombinant fragment of human AIM2 (AA: 1-195) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	9447
Other Names	Interferon-inducible protein AIM2, Absent in melanoma 2, AIM2
Dilution	WB~~1/500 - 1/2000 FC~~1/200 - 1/400 ICC~~N/A E~~1/10000
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 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:23530044,

PubMed:26197926, PubMed:26583071, PubMed:29440442, PubMed:33980849, PubMed:37364111). 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:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:29440442, PubMed:33980849). 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:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:29440442, PubMed:33980849). 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:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831). In some cells, CASP1 activation mediates cleavage and activation of GSDMD, triggering pyroptosis without promoting cytokine secretion (PubMed:19158675, PubMed:19158676). Detects cytosolic dsDNA of viral and bacterial origin in a non-sequence-specific manner (PubMed:17726700, PubMed:19158675, PubMed:19158676, PubMed:19158679, PubMed:20566831, PubMed:26197926, PubMed:26583071, PubMed:29440442, PubMed:33980849). 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}

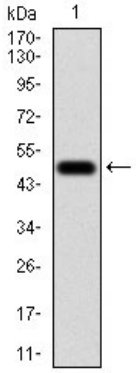
Tissue Location

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

References

1.Mol Cancer Res. 2013 Oct;11(10):1193-202.2.Int J Cancer. 2010 Apr 15;126(8):1838-49.

Images


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170-
130-
95-
72-
55-
43-
34-
26-
17-
11-