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AIM Antibody

Catalog # ASC10420

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	O43866
Other Accession	AAD01446, 4102235
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	38088
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	AIM antibody can be used for the detection of AIM by Western blot at 1 - 4 g/mL. Antibody can also be used for immunohistochemistry starting at 2 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	922
Other Names	AIM Antibody: AIM, API6, PRO229, Spalpha, SP-ALPHA, UNQ203/PRO229, CD5 antigen-like, CT-2, CD5 molecule-like
Target/Specificity	CD5L;
Reconstitution & Storage	AIM 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.
Precautions	AIM Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CD5L
Synonyms	API6
Function	Secreted protein that acts as a key regulator of lipid synthesis: mainly expressed by macrophages in lymphoid and inflamed tissues and regulates mechanisms in inflammatory responses, such as infection or atherosclerosis. Able to inhibit lipid droplet size in adipocytes. Following incorporation into mature adipocytes via CD36- mediated endocytosis, associates with cytosolic FASN, inhibiting fatty acid synthase activity and leading to lipolysis, the degradation of triacylglycerols into glycerol and free fatty acids (FFA).

	CD5L-induced lipolysis occurs with progression of obesity: participates in obesity- associated inflammation following recruitment of inflammatory macrophages into adipose tissues, a cause of insulin resistance and obesity-related metabolic disease. Regulation of intracellular lipids mediated by CD5L has a direct effect on transcription regulation mediated by nuclear receptors ROR-gamma (RORC). Acts as a key regulator of metabolic switch in T-helper Th17 cells. Regulates the expression of pro-inflammatory genes in Th17 cells by altering the lipid content and limiting synthesis of cholesterol ligand of RORC, the master transcription factor of Th17-cell differentiation. CD5L is mainly present in non-pathogenic Th17 cells, where it decreases the content of polyunsaturated fatty acyls (PUFA), affecting two metabolic proteins MSMO1 and CYP51A1, which synthesize ligands of RORC, limiting RORC activity and expression of pro-inflammatory genes. Participates in obesity-associated autoimmunity via its association with IgM, interfering with the binding of IgM to Fcalpha/mu receptor and enhancing the development of long-lived plasma cells that produce high- affinity IgG autoantibodies (By similarity). Also acts as an inhibitor of apoptosis in macrophages: promotes macrophage survival from the apoptotic effects of oxidized lipids in case of atherosclerosis (PubMed:24295828). Involved in early response to microbial infection against various pathogens by acting as a pattern recognition receptor and by promoting autophagy (PubMed:16030018, PubMed:24223991, PubMed:24583716, PubMed:25713983). Promotes recovery from acute kidney injury (AKI) by accumulating on necrotic cell debris within the kidney proximal tubules following AKI and interacting with HAVCR1 expressed on the surface of injured kidney tubular epithelial cells (PubMed:26726878). This enhances HAVCR1-mediated phagocytosis of intraluminal necrotic debris and contributes to kidney tissue repair (PubMed:26726878). Also enhances necrotic debris uptake by kidney macrophages in a HAVCR1-independent manner (By similarity).
Cellular Location	Secreted. Cytoplasm {ECO:0000250|UniProtKB:Q9QWK4}. Note=Secreted by macrophages and circulates in the blood (PubMed:24223991, PubMed:24804991). Transported into the cytoplasm via CD36-mediated endocytosis (By similarity) Following acute kidney injury, dissociates from IgM in the blood and is excreted into urine, leading to its accumulation at intraluminal debris in the kidney proximal tubules (PubMed:26726878) {ECO:0000250|UniProtKB:Q9QWK4, ECO:0000269|PubMed:24223991, ECO:0000269|PubMed:24804991, ECO:0000269|PubMed:26726878}
Tissue Location	Expressed in spleen, lymph node, thymus, bone marrow, and fetal liver, but not in non-lymphoid tissues

Background

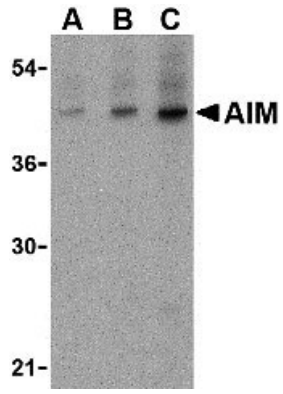
AIM Antibody: Apoptosis inhibitor of macrophages (AIM) is a member of the scavenger receptor cysteine-rich domain superfamily (SRCR-SF) initially identified as an inducible cell surface ligand of CD5. It was shown that AIM functions in the thymus as the inducer of resistance to apoptosis within CD4+/CD8+ thymocytes and as the supporter of the viability of these cells before thymic selection. AIM was also shown to support macrophage survival and enhance their phagocytic function. More recent experiments using recombinant AIM significantly inhibited apoptosis of NKT and T cells obtained from C. parvum-stimulated livers in vitro, suggesting that AIM functions to induce resistance to apoptosis in these cells and supports host defense against inflammation during infection.

References

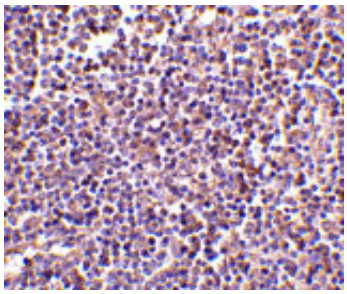
Miyazaki T, Hirokami Y, Matsuhashi N, et al. Increased susceptibility of thymocytes to apoptosis in mice lacking AIM, a novel murine macrophage-derived soluble factor belonging to the scavenger receptor cysteine-rich domain superfamily. J. Exp. Med. 1999; 189:413-22.

Biancone L, Bowen MA, Lim A, et al. Identification of a novel inducible cell-surface ligand of CD5 on activated lymphocytes. J. Exp. Med. 1996; 184:811-9.
Haruta I, Kato Y, Hashimoto E, et al. Association of AIM, a novel apoptosis inhibitory factor, with hepatitis via supporting macrophage survival and enhancing phagocytic function of macrophages. J. Biol. Chem.2001; 276:22910-4
Kuwata K, Watanabe H, Jiang S-Y, et al. AIM inhibits apoptosis of T cells and NKT cells in Corynebacterium-induced granuloma formation in mice. Am. J. Path. 2003; 162:837-47.

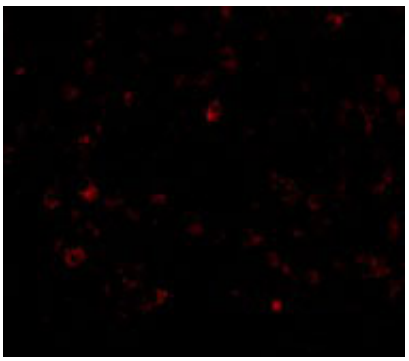
Images



Western blot analysis of AIM in human lymph node tissue lysate with AIM antibody at (A) 1, (B) 2 and (C) 4 µg/mL.



Immunohistochemistry of AIM in human lymph node tissue with AIM antibody at 2 µg/mL.



Immunofluorescence of AIM in Human Lymph Node cells with AIM antibody at 20 µg/mL.

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