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Macrophage L1 Protein Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone MAC387]
Catalog # AH12281

Product Information

Application	IHC, IF, FC
Primary Accession	P05109
Other Accession	6279 (S100A8/Calgranulin A/MRP-8), 6280 (S100A9/Calgranulin B/MRP-14), 416073 (S100A8/Calgranulin A/MRP-8), 112405 (S100A9/Calgranulin B/MRP-14), P06702 (S100A9/Calgranulin B/MRP-14)
Reactivity	Human, Mouse, Rat, Rabbit, Monkey, Pig, Goat, Bovine, Baboon, Cat, Horse, Guinea Pig, Dog
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG1, kappa
Clone Names	MAC387
Calculated MW	10835

Additional Information

Gene ID	6279
Other Names	Protein S100-A8, Calgranulin-A, Calprotectin L1L subunit, Cystic fibrosis antigen, CFAG, Leukocyte L1 complex light chain, Migration inhibitory factor-related protein 8, MRP-8, p8, S100 calcium-binding protein A8, Urinary stone protein band A, Protein S100-A8, N-terminally processed, S100A8, CAGA, CFAG, MRP8
Application Note	IHC~~1:100~500 IF~~1:50~200 FC~~1:10~50
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	Macrophage L1 Protein Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	S100A8 (HGNC:10498)
Synonyms	CAGA, CFAG, MRP8
Function	S100A8 is a calcium- and zinc-binding protein which plays a prominent role in the regulation of inflammatory processes and immune response. It can induce neutrophil chemotaxis and adhesion. Predominantly found as calprotectin (S100A8/A9) which has a wide plethora of intra- and extracellular functions. The intracellular functions include: facilitating leukocyte arachidonic acid trafficking and metabolism, modulation of the

	tubulin-dependent cytoskeleton during migration of phagocytes and activation of the neutrophilic NADPH- oxidase. Also participates in regulatory T-cell differentiation together with CD69 (PubMed:26296369). Activates NADPH-oxidase by facilitating the enzyme complex assembly at the cell membrane, transferring arachidonic acid, an essential cofactor, to the enzyme complex and S100A8 contributes to the enzyme assembly by directly binding to NCF2/P67PHOX. The extracellular functions involve pro- inflammatory, antimicrobial, oxidant-scavenging and apoptosis-inducing activities. Its pro-inflammatory activity includes recruitment of leukocytes, promotion of cytokine and chemokine production, and regulation of leukocyte adhesion and migration. Acts as an alarmin or a danger associated molecular pattern (DAMP) molecule and stimulates innate immune cells via binding to pattern recognition receptors such as Toll-like receptor 4 (TLR4) and receptor for advanced glycation endproducts (AGER). Binding to TLR4 and AGER activates the MAP-kinase and NF-kappa-B signaling pathways resulting in the amplification of the pro-inflammatory cascade. Has antimicrobial activity towards bacteria and fungi and exerts its antimicrobial activity probably via chelation of Zn(2+) which is essential for microbial growth. Can induce cell death via autophagy and apoptosis and this occurs through the cross- talk of mitochondria and lysosomes via reactive oxygen species (ROS) and the process involves BNIP3. Can regulate neutrophil number and apoptosis by an anti-apoptotic effect; regulates cell survival via ITGAM/ITGB and TLR4 and a signaling mechanism involving MEK-ERK. Its role as an oxidant scavenger has a protective role in preventing exaggerated tissue damage by scavenging oxidants. Can act as a potent amplifier of inflammation in autoimmunity as well as in cancer development and tumor spread. The iNOS-S100A8/A9 transnitrosylase complex directs selective inflammatory stimulus-dependent S- nitrosylation of GAPDH and probably multiple targets such as ANXA5, EZR, MSN and VIM by recognizing a [IL]-x-C-x-x-[DE] motif; S100A8 seems to contribute to S-nitrosylation site selectivity.
Cellular Location	Secreted. Cytoplasm. Cytoplasm, cytoskeleton. Cell membrane; Peripheral membrane protein. Note=Predominantly localized in the cytoplasm. Upon elevation of the intracellular calcium level, translocated from the cytoplasm to the cytoskeleton and the cell membrane. Upon neutrophil activation or endothelial adhesion of monocytes, is secreted via a microtubule-mediated, alternative pathway
Tissue Location	Calprotectin (S100A8/9) is predominantly expressed in myeloid cells. Except for inflammatory conditions, the expression is restricted to a specific stage of myeloid differentiation since both proteins are expressed in circulating neutrophils and monocytes but are absent in normal tissue macrophages and lymphocytes. Under chronic inflammatory conditions, such as psoriasis and malignant disorders, also expressed in the epidermis. Found in high concentrations at local sites of inflammation or in the serum of patients with inflammatory diseases such as rheumatoid, cystic fibrosis, inflammatory bowel disease, Crohn's disease, giant cell arteritis, cystic fibrosis, Sjogren's syndrome, systemic lupus erythematosus, and progressive systemic sclerosis. Involved in the formation and deposition of amyloids in the aging prostate known as corpora amylacea inclusions Strongly up-regulated in many tumors, including gastric, esophageal, colon, pancreatic, bladder, ovarian, thyroid, breast and skin cancers

Background

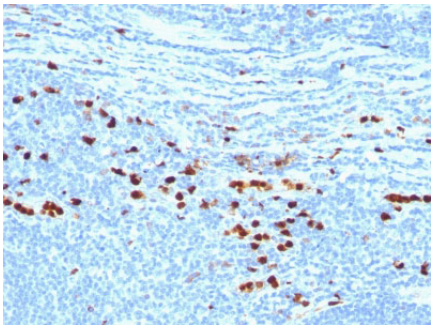
Recognizes the L1 or Calprotectin molecule, an intra-cytoplasmic antigen comprising of a 12kDa alpha chain and a 14kDa beta chain expressed by granulocytes, monocytes and by tissue macrophages. Macrophages usually arise from hematopoietic stem cells in the bone marrow. Under migration into tissues, the monocytes undergo further differentiation to become multifunctional tissue macrophages. They are

classified into normal and inflammatory macrophages. Normal macrophages include macrophages in connective tissue (histiocytes), liver (Kupfferā€™s cells), lung (alveolar macrophages), lymph nodes (free and fixed macrophages), spleen (free and fixed macrophages), bone marrow (fixed macrophages), serous fluids (pleural and peritoneal macrophages), skin (histiocytes, Langerhans's cell) and in other tissues. Inflammatory macrophages are present in various exudates. Macrophages are part of the innate immune system, recognizing, engulfing and destroying many potential pathogens including bacteria, pathogenic protozoa, fungi and helminthes. This MAb reacts with neutrophils, monocytes, macrophages, and squamous mucosal epithelia and has been shown as an important marker for identifying macrophages in tissue sections.

References

Flavell DJ; Jones DB; Wright DH. Identification of tissue histiocytes on paraffin sections by a new monoclonal antibody. Journal of Histochemistry and Cytochemistry, 1987, 35(11):1217-26

Images



Formalin-fixed, paraffin-embedded human Tonsil stained with Macrophage L1 Protein Monoclonal Antibody (MAC387)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.