ARG40310
anti-S100A9 antibody

Package: 50 µg
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes S100A9
Tested Reactivity	Hu
Species Does Not React With	Ms
Tested Application	FACS, ICC/IF, IHC-P, WB
Specificity	This antibody does not react to mouse S100A9 tested with 10 ng of mouse S100A9 recombinant protein by WB.
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	S100A9
Species	Human
Immunogen	Recombinant protein corresponding to T2-P114 of Human S100A9.
Conjugation	Un-conjugated
Alternate Names	Calgranulin-B; MRP-14; MRP14; 60B8AG; CFAG; MAC387; Calprotectin L1H subunit; NIF; MIF; p14; LIAG; Protein S100-A9; CGLB; Migration inhibitory factor-related protein 14; L1AG; Leukocyte L1 complex heavy chain; P14; CAGB; S100 calcium-binding protein A9

Application Instructions

Application table

Application	Dilution
FACS	1:150 - 1:500
ICC/IF	1:200 - 1:1000
IHC-P	0.5 - 1 µg/ml
WB	0.1 - 0.5 µg/ml

Application Note: IHC-P: Antigen Retrieval: By heat mediation.
* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Observed Size: 13 kDa

Properties

Form	Liquid
Purification	Affinity purification with immunogen.
Buffer	0.2% Na2HPO4, 0.9% NaCl, 0.05% Sodium azide and 5% BSA.

Preservative	0.05% Sodium azide
Stabilizer	5% BSA
Concentration	0.5 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

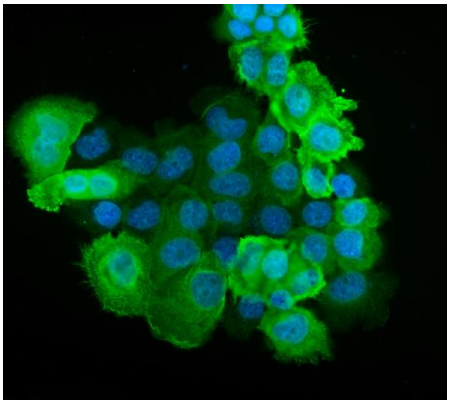
Bioinformation

Gene Symbol	S100A9
Gene Full Name	S100 calcium binding protein A9
Background	The protein encoded by this gene is a member of the S100 family of proteins containing 2 EF-hand calcium-binding motifs. S100 proteins are localized in the cytoplasm and/or nucleus of a wide range of cells, and involved in the regulation of a number of cellular processes such as cell cycle progression and differentiation. S100 genes include at least 13 members which are located as a cluster on chromosome 1q21. This protein may function in the inhibition of casein kinase and altered expression of this protein is associated with the disease cystic fibrosis. This antimicrobial protein exhibits antifungal and antibacterial activity. [provided by RefSeq, Nov 2014]
Function	S100A9 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, adhesion, can increase the bactericidal activity of neutrophils by promoting phagocytosis via activation of SYK, PI3K/AKT, and ERK1/2 and can induce degranulation of neutrophils by a MAPK-dependent mechanism. 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. 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 proinfammatory, antimicrobial, oxidant-scavenging and apoptosis-inducing activities. Its proinflammatory 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 proinflammatory 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. Has transnitrosylase activity; in oxidatively-modified low-densitity lipoprotein (LDL(ox))-induced S-nitrosylation of GAPDH on 'Cys-247' proposed to transfer the NO moiety from NOS2/iNOS to GAPDH via its own S-nitrosylated Cys-3. The iNOS-S100A8/A9 transnitrosylase complex is proposed to also direct selective inflammatory stimulus-dependent S-nitrosylation of multiple targets such as ANXA5, EZR, MSN and VIM by recognizing a [IL]-x-C-x-x-[DE] motif. [UniProt]
Highlight	Related products: S100A antibodies; S100A ELISA Kits; Anti-Rabbit IgG secondary antibodies; Related news: HMGB1, a biomarker and therapeutic target in COVID-19
Calculated Mw	13 kDa
PTM	Phosphorylated. Phosphorylation inhibits activation of tubulin polymerization.

S-nitrosylation of Cys-3 is implicated in LDL(ox)-induced S-nitrosylation of GAPDH at 'Cys-247' through a transnitrosylase mechanism involving a iNOS-S100A8/9 complex (PubMed:25417112). [UniProt]

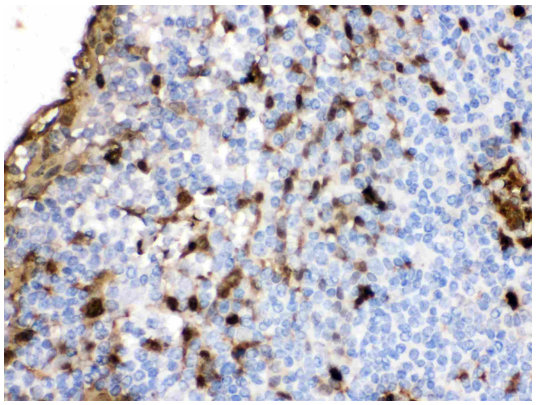
Cellular Localization	Secreted. Cytoplasm. Cytoplasm, cytoskeleton. Cell membrane; Peripheral membrane protein. Predominantly localized in the cytoplasm. Upon elevation of the intracellular calcium level, translocated from the cytoplasm to the cytoskeleton and the cell membrane. Upon neutrophil activation or endothelial adhesion of monocytes, is secreted via a microtubule-mediated, alternative pathway. [UniProt]

Images



ARG40310 anti-S100A9 antibody ICC/IF image

Immunofluorescence: A431 cells were blocked with 10% goat serum and then stained with ARG40310 anti-S100A9 antibody (green) at 5 µg/ml dilution, overnight at 4°C. DAPI (blue) for nuclear staining.

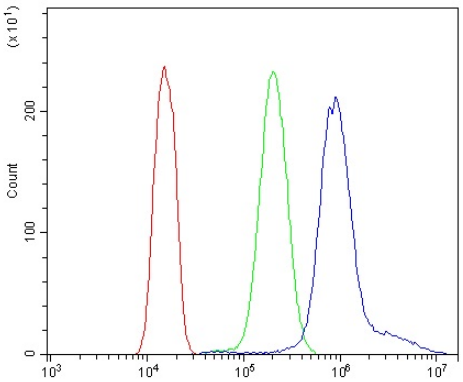


ARG40310 anti-S100A9 antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human tonsil stained with ARG40310 anti-S100A9 antibody.

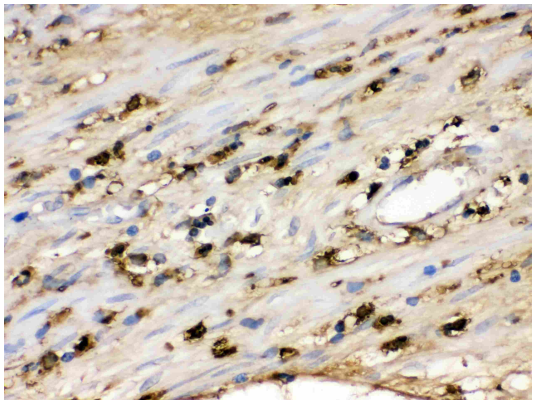
ARG40310 anti-S100A9 antibody WB image

Western blot: 40 µg of A431 and MCF7 whole cell lysates stained with ARG40310 anti-S100A9 antibody at 0.5 µg/ml dilution.



ARG40310 anti-S100A9 antibody FACS image

Flow Cytometry: A431 cells were blocked with 10% normal goat serum and then stained with ARG40310 anti-S100A9 antibody (blue) at 1 µg/10^6 cells for 30 min at 20°C, followed by incubation with DyLight®488 labelled secondary antibody. Isotype control antibody (green) was rabbit IgG (1 µg/10^6 cells) used under the same conditions. Unlabelled sample (red) was also used as a control.



ARG40310 anti-S100A9 antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human appendicitis stained with ARG40310 anti-S100A9 antibody.