

Polyclonal Antibody to S100 Calcium Binding Protein A9 (S100A9)

S100 Calcium Binding Protein A9
Catalog # AP74607

Product Information

Application	WB
Primary Accession	P28783
Host	Rabbit
Clonality	Polyclonal
Calculated MW	17114

Additional Information

Gene ID	532569
Other Names	MRP14; MIF; 60B8AG; CFAG; NIF; CAGB; CGLB; L1AG; P14; Calgranulin B; Migration inhibitory factor-related protein 14; Calprotectin L1H subunit; Leukocyte L1 complex heavy chain
Target/Specificity	Bos taurus; Bovine (Cattle)
Dilution	WB~~Western blotting: 0.2-2 μ g/mL;1:250-2500 Immunohistochemistry: 5-20 μ g/mL;1:25-100 Immunocytochemistry: 5-20 μ g/mL;1:25-100 Optimal working dilutions must be determined by end user.
Format	PBS, pH7.4, containing 0.02% NaN ₃ , 50% glycerol.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	S100A9
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. Also

participates in regulatory T-cell differentiation together with CD69. 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. The iNOS-S100A8/A9 transnitrosylase complex is proposed to direct selective inflammatory stimulus-dependent S-nitrosylation of multiple targets such as GAPDH, NXA5, EZR, MSN and VIM by recognizing a [IL]-x-C-x-x-[DE] motif.

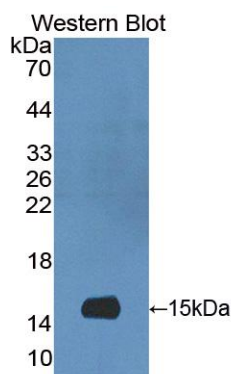
Cellular Location

Secreted {ECO:0000250|UniProtKB:P06702}. Cytoplasm {ECO:0000250|UniProtKB:P06702}. Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:P06702}. Cell membrane {ECO:0000250|UniProtKB:P06702}; Peripheral membrane protein {ECO:0000250|UniProtKB:P06702}. 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 {ECO:0000250|UniProtKB:P06702}

Tissue Location

Found essentially in phagocytic cells.

Images



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