

S100-A9 Recombinant Protein | S100a9 recombinant protein

Recombinant Mouse Protein S100-A9

CATALOG #
AAA113922

HOST
E Coli or Yeast or Baculovirus or Mammalian Cell

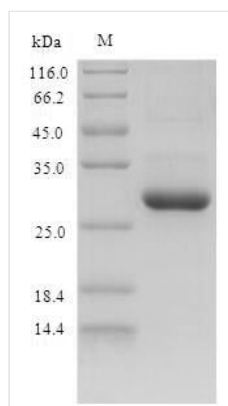
PRODUCT SYNONYMS

S100-A9; Recombinant Mouse Protein S100-A9; Calgranulin-B; Leukocyte L1 complex heavy chain; Migration inhibitory factor-related protein 14; MRP-14; p14; S100 calcium-binding protein A9; S100a9 recombinant protein

PRODUCT SPECIFICATIONS

Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE.
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Sequence Positions	2-113. Full Length of Mature Protein
Sequence	ANKAPSQMER SITTIIDTFH QYSRKEGHPD TLSKKEFRQM VEAQLATFMK KEKRNEALIN DIMEDLDTNQ DNQLSFEECM MLMAKLIFAC HEKLHENNPR GHGSHGKGC GK
Preparation and Storage	Store at -20 degree C, for extended storage, conserve at -20 degree C or -80 degree C.

IMAGES



SDS-PAGE

ADDITIONAL INFORMATION

Related Product Information for S100a9 recombinant protein	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 proinflammatory, 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 Zn2+ 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.
References	Mouse MRP8 and MRP14, two intracellular calcium-binding proteins associated with the development of the myeloid lineage.Lagasse E., Weissman I.L.Blood 79:1907-1915(1992) Molecular analysis of the mouse S100A9 gene and evidence that the myeloid specific transcription factor C/EBPepsilon is not required for the regulation of the S100A9/A8 gene expression in neutrophils.Nacken W.K.F., Lekstrom-Himes J.A., Sorg C., Manitz M.3.0.CO;2-K>J. Cell. Biochem. 80:606-616(2001) Isolation of the murine S100 protein MRP14 (14 kDa migration-inhibitory-factor-related protein) from activated spleen cells characterization of post-translational modifications and zinc binding.Raferly M.J., Harrison C.A., Alewood P.F., Jones A., Geczy C.L.Biochem. J. 316:285-293(1996) Loss of S100A9 (MRP14) results in reduced interleukin-8-induced CD11b surface expression, a polarized microfilament system, and diminished responsiveness to chemoattractants in vitro.Manitz M.-P., Horst B., Seeliger S., Strey A., Skryabin B.V., Gunzer M., Frings W., Schoenlau F., Roth J., Sorg C., Nacken W.Mol. Cell. Biol. 23:1034-1043(2003) MRP8 and MRP14 control microtubule reorganization during transendothelial migration of phagocytes.Vogl T., Ludwig S., Goebeler M., Strey A., Thorey I.S., Reichelt R., Foell D., Gerke V., Manitz M.P., Nacken W., Werner S., Sorg C., Roth J.Blood 104:4260-4268(2004) Comprehensive identification of phosphorylation sites in postsynaptic density preparations.Trinidad J.C., Specht C.G., Thalhammer A., Schoepfer R., Burlingame A.L.Mol. Cell. Proteomics 5:914-922(2006) Mrp8 and Mrp14 are endogenous activators of Toll-like receptor 4, promoting lethal, endotoxin-induced shock.Vogl T., Tenbrock K., Ludwig S., Leukert N., Ehrhardt C., van Zoelen M.A.D., Nacken W., Foell D., van der Poll T., Sorg C., Roth J.Nat. Med. 13:1042-1049(2007) S100A8 and S100A9 mediate endotoxin-induced cardiomyocyte dysfunction via the receptor for advanced glycation end products.Boyd J.H., Kan B., Roberts H., Wang Y., Walley K.R.Circ. Res. 102:1239-1246(2008) Anti-infective protective properties of S100 calgranulins.Hsu K., Champaiiboon C., Guenther B.D., Sorenson B.S., Khammanivong A., Ross K.F., Geczy C.L., Herzberg M.C.Antiinflam. Antiallergy Agents Med. Chem. 8:290-305(2009) Identification of human S100A9 as a novel target for treatment of autoimmune disease via binding to quinoline-3-carboxamides.Bjoerk P., Bjoerk A., Vogl T., Stenstroem M., Liberg D., Olsson A., Roth J., Ivars F., Leanderson T.PLoS Biol. 7:E97-E97(2009) Inflammation-associated S100 proteins new mechanisms that regulate function.Goyette J., Geczy C.L.Amino Acids 41:821-842(2011) S100A9 differentially modifies phenotypic states of neutrophils, macrophages, and dendritic cells implications for atherosclerosis and adipose tissue inflammation.Averill M.M., Barnhart S., Becker L., Li X., Heinecke J.W., Leboeuf R.C., Hamerman J.A., Sorg C., Kerkhoff C., Bornfeldt K.E.Circulation 123:1216-1226(2011) Induction of nuclear factor-kappaB responses by the S100A9 protein is Toll-like receptor-4-dependent.Riva M., Kaellberg E., Bjoerk P., Hancz D., Vogl T., Roth J., Ivars F., Leanderson T.Immunology 137:172-182(2012)

NCBI AND UNIPROT INFORMATION

NCBI GI #	529367291
NCBI GeneID	20202

NCBI Accession #	NP_001268781.1
NCBI GenBank Nucleotide #	NM_001281852.1
UniProt Accession #	P31725
Molecular Weight	28.9 kDa
NCBI Official Full Name	protein S100-A9
NCBI Official Synonym Full Names	S100 calcium binding protein A9 (calgranulin B)
NCBI Official Symbol	S100a9
NCBI Official Synonym Symbols	p14; Cagb; GAGB; L1Ag; BEE22; MRP14; 60B8Ag; AW546964
NCBI Protein Information	protein S100-A9
UniProt Protein Name	Protein S100-A9
UniProt Gene Name	S100a9
UniProt Synonym Gene Names	Cagb; Mrp14; MRP-14; p14
UniProt Entry Name	S10A9_MOUSE

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://www.aaabiotech.com/s100a9-recombinant-protein-e-coli/113922>