

Recombinant Mouse S100a8 Protein, His-tagged

Cat. No. S100a8-7328M **Lot. No.** (See product label)

SPECIFICATION

Product Overview Recombinant mouse S100A8 protein, fused to His-tag at N-terminus, was expressed in *E. coli* and purified by using conventional chromatography.

Species Mouse

Source *E. coli*

ProteinLength 1-89

Description

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. 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

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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, ANXA5, EZR, MSN and VIM by recognizing a [IL]-x-C-x-x-[DE] motif; S100A8 seems to contribute to S-nitrosylation site selectivity.

Form	Liquid
Molecular Mass	12.4 kDa
AA Sequence	MGSSHHHHHSSGLVPRGSHMPSELEKALSNLIDVYHNYNSNIQGNHHALYKNDFFK MVTTECPQFVQNINIENLFRILDINSNAINFEEFLAMVIKVGVAASHKDSHKE
Purity	> 95 %
Stability	Shelf life: one year from despatch.
Storage	Store undiluted at 2-8 centigrade for up to two weeks or (in aliquots) at -20 or -70 centigrade for longer. Avoid repeated freezing and thawing.

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Concentration 1.0 mg/mL (determined by Bradford assay)

Storage Buffer 20 mM Tris-HCl buffer (pH 8.0) containing 30 % glycerol, 0.1 M NaCl, 1 mM DTT

GENE INFORMATION

Gene Name S100a8 S100 calcium binding protein A8 (calgranulin A) [*Mus musculus* (house mouse)]

Official Symbol S100a8

Synonyms S100a8; S100 calcium binding protein A8 (calgranulin A); p; Ca; MR; p8; B8A; CFA; B8Ag; CFAg; CP-1; Caga; MRP8; 60B8A; CP-10; 60B8Ag; AI323541; protein S100-A8; MRP-8; S100 calcium-binding protein A8; calgranulin-A; chemotactic S100 protein; chemotactic cytokine CP-10; leukocyte L1 complex light chain; migration inhibitory factor-related protein 8; pro-inflammatory S100 cytokine

Gene ID 20201

mRNA Refseq NM_013650

Protein Refseq NP_038678

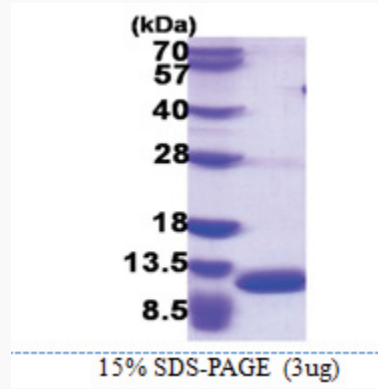
UniProt ID P27005

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SDS-PAGE



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