

# Recombinant Mouse S100a8 overexpression lysate

**Cat. No.** S100a8-28HCL    **Lot. No.** (See product label)

## SPECIFICATION

### Product Overview

Transient overexpression lysate of Mouse S100 calcium binding protein A8 (calgranulin A) (S100a8) with a C-Myc/DDK tag was expressed in HEK293T. Preparation: HEK293T cells in 10-cm dishes were transiently transfected. Transfected cells were cultured for 48hrs before collection. The cells were lysed in modified RIPA buffer (25mM Tris-HCl pH7.6, 150mM NaCl, 1% NP-40, 1mM EDTA, 1xProteinase inhibitor cocktail mix, 1mM PMSF and 1mM Na3VO4), and then centrifuged to clarify the lysate. Protein concentration was measured by BCA kit. Cell lysates were aliquoted and stored at -20 centigrade before shipping.

Components:

- 1 vial of 100 µg gene specific transient over-expression cell lysate in RIPA buffer
- 1 vial of 100 µg empty vector transfected control cell lysate in RIPA buffer
- 1 vial of 250 µL 2xSDS Sample Buffer (4% SDS, 125mM Tris-HCl pH6.8, 10% Glycerol, 0.002% Bromphenol blue, 100mM DTT)

### Species

Mouse

### Source

HEK293

### 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

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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 Zn<sup>2+</sup> 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.

|                       |                                                                                                                                |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------|
| <b>Molecular Mass</b> | 10.7 kDa                                                                                                                       |
| <b>Stability</b>      | Avoid repeated freeze-thaw cycles. Lysate samples are stable for 12 months from date of receipt when stored at -20 centigrade. |

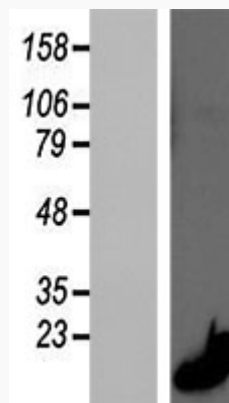
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|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Storage</b>          | Upon receiving, store the sample at -20 centigrade.                                                                                                                                                                                                                                                                                                                                                  |
| <b>Reconstitution</b>   | Lysate samples can be diluted with 2xSDS Sample Buffer provided. After dilution, the protein sample should be aliquoted and stored at -20 centigrade for long term storage.                                                                                                                                                                                                                          |
| <b>Shipping</b>         | The lysate is shipped with dry ice.                                                                                                                                                                                                                                                                                                                                                                  |
| <b>GENE INFORMATION</b> |                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Gene Name</b>        | S100a8 S100 calcium binding protein A8 (calgranulin A) [ Mus musculus (house mouse) ]                                                                                                                                                                                                                                                                                                                |
| <b>Official Symbol</b>  | S100a8                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Synonyms</b>         | 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; Names; 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 |
| <b>Gene ID</b>          | 20201                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>mRNA Refseq</b>      | NM_013650                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Protein Refseq</b>   | NP_038678                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>UniProt ID</b>       | P27005                                                                                                                                                                                                                                                                                                                                                                                               |

## SDS-PAGE



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