abcam

Product datasheet

Mouse S100A8 ELISA Kit ab263886

Recombinant SimpleStep ELISA

1 References 4 Images

Overview

Product name Mouse S100A8 ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Plasma	8			3.9%

Inter-assay

Sample	n	Mean	SD	CV%
Plasma	3			3.2%

Sample type Cell culture supernatant, Serum, Hep Plasma, EDTA Plasma, Cit plasma

Assay type Sandwich (quantitative)

Sensitivity 7.97 pg/ml

Range 15.625 pg/ml - 1000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	114	104% - 119%
Serum	106	102% - 109%
Hep Plasma	108	105% - 113%
EDTA Plasma	100	92% - 105%
Cit plasma	102	96% - 106%

Assay time 1h 30m

Assay duration One step assay

Species reactivity

Reacts with: Mouse
Does not react with: Cow

Product overview

Mouse S100A8 ELISA Kit (ab263886) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of S100A8 protein in cell culture supernatant, cit plasma, edta plasma, hep plasma, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Mouse S100A8 with 7.97 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate (**ab203359**) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

Notes

S100A8 is a protein also known as calgranulin A that is encoded by the *S100A8* gene. Moreover, it is a calcium and zinc binding protein, which serves a vital role in the regulation of inflammatory process and immune response. Also involved in a wide variety of intra and extracellular functions such as cell cycle progression and differentiation. Studies have shown altered expression of S100A8 to be associated with cystic fibrosis. S100A8 is known to bind with S100A9 in which forms a heterodimer called calprotectin.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Mouse S100A8 Capture Antibody	1 x 600µl
10X Mouse S100A8 Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent 4BR	1 x 6ml
Mouse S100A8 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent NS (ab193972)	1 x 50ml

Components	1 x 96 tests
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

Function

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 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. The iNOS-S100A8/A9 transnitrosylase complex directs selective inflammatory stimulus-dependent S-nitrosylation of GAPDH and probably multiple targets such as ANXA5, EZR, MSN and VIM by recognizing a [IL]-x-C-x-x-[DE] motif; S100A8 seems to contribute to S-nitrosylation site selectivity.

Tissue specificity

Calprotectin (S100A8/9) is predominantly expressed in myeloid cells. Except for inflammatory conditions, the expression is restricted to a specific stage of myeloid differentiation since both proteins are expressed in circulating neutrophils and monocytes but are absent in normal tissue macrophages and lymphocytes. Under chronic inflammatory conditions, such as psoriasis and malignant disorders, also expressed in the epidermis. Found in high concentrations at local sites of inflammation or in the serum of patients with inflammatory diseases such as rheumatoid, cystic fibrosis, inflammatory bowel disease, Crohn's disease, giant cell arteritis, cystic fibrosis, Sjogren's syndrome, systemic lupus erythematosus, and progressive systemic sclerosis. Involved in the formation and deposition of amyloids in the aging prostate known as corpora amylacea inclusions. Strongly up-regulated in many tumors, including gastric, esophageal, colon, pancreatic, bladder, ovarian, thyroid, breast and skin cancers.

Sequence similarities

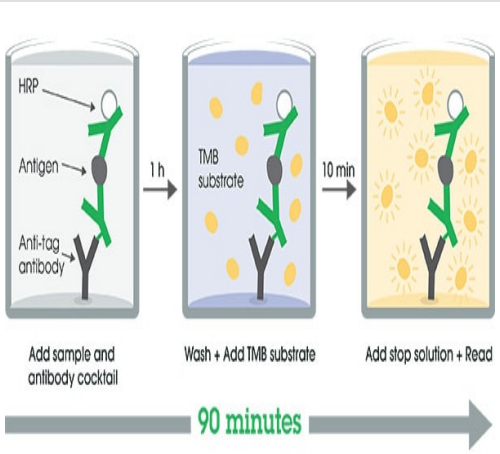
Belongs to the S-100 family.
Contains 2 EF-hand domains.

Cellular localization

Secreted. Cytoplasm. Cytoplasm, cytoskeleton. Cell membrane. Predominantly localized in the

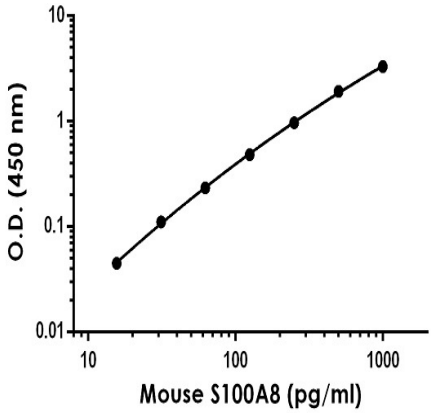
cytoplasm. Upon elevation of the intracellular calcium level, translocated from the cytoplasm to the cytoskeleton and the cell membrane. Upon neutrophil activation or endothelial adhesion of monocytes, is secreted via a microtubule-mediated, alternative pathway.

Images



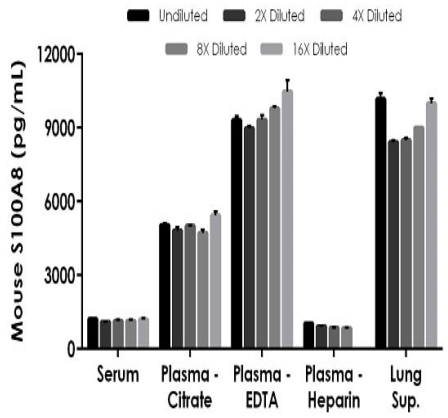
SimpleStep ELISA Protocol Diagram

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



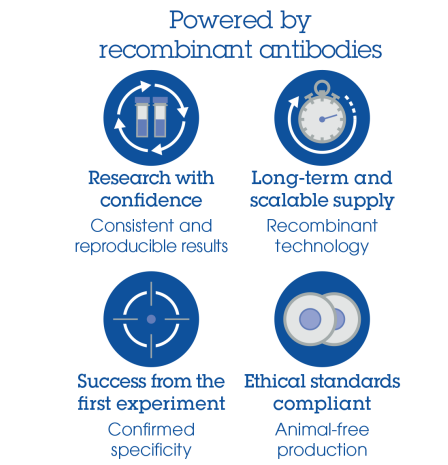
Example of mouse S100A8 standard curve in Sample Diluent NS.

The S100A8 standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



Interpolated concentrations of native S100A8 in mouse serum, plasma and tissue culture supernatant samples.

The concentrations of S100A8 were measured in duplicates, interpolated from the S100A8 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 12.5%, plasma (citrate) 5%, plasma EDTA 5%, plasma (heparin) 25% and lung supernatant 5%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean S100A8 concentration was determined to be 1,163 pg/mL in serum, 5,005 pg/mL in plasma (citrate) and 9,576 pg/mL in plasma (EDTA), 920.1 pg/mL in plasma (heparin), and 9,214 pg/mL in lung supernatant.



Sandwich ELISA - Mouse S100A8 ELISA Kit (ab263886)

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