BioVendor - Laboratorní medicína a.s.
Karásek 1767/1
621 00 Brno

Date of issue: 14.11.2017

PRODUCT DATASHEET

S100A9 Human E. coli

Cat. No.: RD172218100
Type: Recombinant
Size: 0.1 mg
Source: E. coli
Species: Human

Description

Total 123 AA. MW: 14.35 kDa (calculated). UniProtKB acc.no. P06702. N-Terminal His-tag, 10 extra AA (highlighted).

Other names

S100 calcium-binding protein A9, Calgranulin-B, Migration inhibitory factor-related protein 14, MRP-14, p14, Leukocyte L1 complex heavy chain, Calprotectin L1H subunit, CAGB, CFAG

Introduction to the molecule

S100A9 is a calcium binding protein. Each S100A9 monomer contains a high affinity calcium binding site at the C-terminus and a low-affinity calcium binding site at the N-terminus. S100A9 may exist as a homodimer, heterodimer with an S100A8 partner (S100A8/A9), or as a heterotetramer with an S100A8 partner (S100A8/A9). S100A9 was first identified in the context of multiple inflammatory reactions which has led to confusing nomenclature in the literature. In 1987, it was found in infiltrating macrophages of rheumatoid arthritis patients and named MRP-14 (myeloid related protein of molecular weight 14 kD). S100A9, a the member of the calcium binding S100 protein family that is also known as MRP14 or Calgranulin B, is an inflammation-associated protein that is constitutively expressed in neutrophils and inducible in numerous inflammatory cells, including macrophages, epithelial cells, and keratinocytes. S100A9 is located in myeloid cells, cancer cells, and in tumor stroma. S100A9 is an abundant cytoplasmic protein in normal myeloid cells such as polymorphonuclear cells and monocytes. It has become clear that S100A9 localizes with its partner S100A8 in many biological processes but may act as a sole player in other cancers. S100A8 and S100A9 are minimally expressed in normal esophageal epithelium, but S100A9 is expressed across the spectrum of Barrett's esophagus through adenocarcinoma. S100A8 and S100A9 belong to a family of 25 homologous low-molecular-weight intracellular calcium-binding proteins that exhibit tissue and cell-specific expression. They are characterized by two distinct EF-hand (helix-loop-helix) calcium-binding domains connected by a hinge region. The N-terminal Ca 2+ binding domain has lower affinity than the canonical C-terminal domain that allows for functionally important second messenger roles dependent on intracellular Ca 2+ levels. These proteins have been associated with chronic inflammatory diseases such as rheumatoid arthritis (RA), cystic fibrosis, Crohns disease, ulcerative colitis, allergic dermatitis, and infection.

Research topic

Coronary artery disease, Immune Response, Infection and Inflammation, Pulmonary diseases, Sepsis

Amino Acid sequence

MKHHHHHHAS TCKMSQLERN IETIINTFHQ YSVKLGHPDT LNQGEFKELV RKDLQNFLKK ENKNEKVIEH IMEDLDTNAD KQLSFEEFIM LMARLTWASH EKMHEGDEGP GHHHKPGLGE GTP

Purity

Purity as determined by densitometric image analysis: >90%

Endotoxin

< 0.1 EU/µg

Formulation:

Filtered (0.4 µm) and lyophilized in 0.5 mg/mL in 20mM TRIS, 50mM NaCl, pH 7.5

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Reconstituion:
Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Filter sterilize your culture media/working solutions containing this non-sterile product before using in cell culture.

Shipping
At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life
Store the lyophilized protein at –80 °C. Lyophilized protein remains stable until the expiry date when stored at –80 °C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at –80 °C for long term storage. Reconstituted protein can be stored at 4 °C for a week.

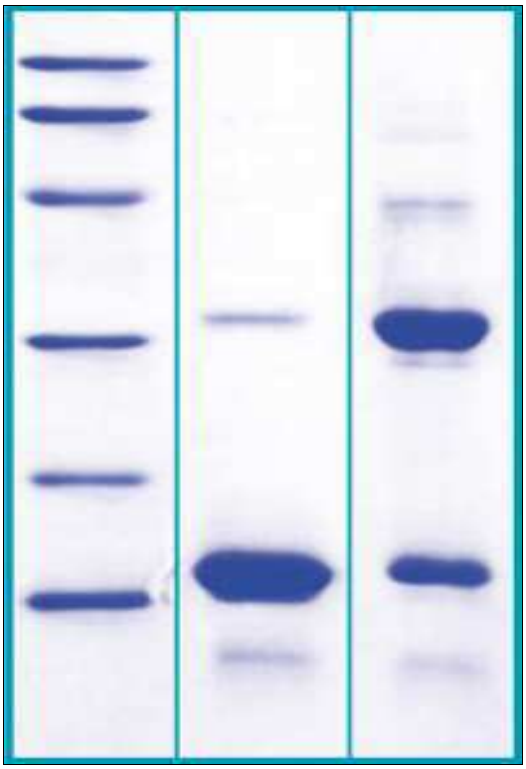
Quality control
BCA to determine quantity of the protein.

SDS PAGE to determine purity of the protein.

LAL to determine quantity of endotoxin.

Applications
Western blotting

Note
This product is intended for research use only.



14% SDS-PAGE separation of Human S100A9
1. M.W. marker – 14, 21, 31, 45, 66, 97 kDa
2. reduced and heated sample, 5µg/lane
3. non-reduced and non-heated sample, 5µg/lane

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