S100A12 Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: S100 calcium-binding protein A12, Calgranulin-C, CAGC, CGRP, Neutrophil S100 protein, Calcium-binding protein in amniotic fluid 1, CAAF1, p6, Extracellular newly identified, RAGE-binding protein, EN-RAGE

Cat. No.:

RD172221100	(0.1 mg)

Description

Total 101 AA. MW: 11.63 kDa (calculated). UniProtKB acc.no. P80511. N-Terminal His-tag, 10 extra AA (highlighted).

Introduction to the Molecule

S100A12 (EN-RAGE, calgranulin) is a member of the S100 protein family, which, in humans, consists of twenty five EF-hand (alpha helix-loop-alpha helix), calcium-binding proteins, of which the vast majority is in homodimer, heterodimer or more complex forms. Mature S100A12 consists of 91 amino acids (Mw 10.4 kDa); it is predominantly expressed and secreted by neutrophil granulocytes and to a lower extent, it was found in monocytes.

Hofmann et al. (1999) reported that RAGE is a central cell surface receptor for S100A12, which they referred to as EN-RAGE (Extracellular Newly identified RAGE-binding protein), and related members of the S100/calgranulin superfamily. Interaction of EN-RAGE (S100A12) with cellular RAGE on endothelium, mononuclear phagocytes, and lymphocytes triggered cellular activation, with generation of key proinflammatory mediators. In murine models, blockade of EN-RAGE/RAGE quenched delayed-type hypersensitivity and inflammatory colitis by arresting activation of central signaling pathways and expression of inflammatory gene mediators.

With regard to its inflammatory properties, S100A12 was already described as a promising marker for many diseases in humans such as neurodegenerative diseases, atherosclerosis, cancerogenesis, osteoarthritis, familial mediterranean fever and idiopathic pulmonary fibrosis. Plasma S100A12 level is associated with cardiovascular disease in hemodialysis patients. S100A12 and its receptor RAGE are found at high concentrations in pulmonary tissue and bronchoalveolar lavage fluid in acute lung injury. S100A12 expression reflects neutrophil activation during lung inflammation. Faecal S100A12 is a novel non-invasive marker distinguishing inflammatory bowel disease (IBD) from irritable bowel syndrome (IBS). Furthermore, S100A12 reflects inflammatory activity of chronic IBD. As a marker of neutrophil activation, faecal S100A12 may significantly improve the arsenal of non-invasive biomarkers of intestinal inflammation.

Research topic

Immune Response, Infection and Inflammation, Inflammatory bowel disease, Lipoprotein metabolism, Neural tissue markers, Oncology, Renal disease

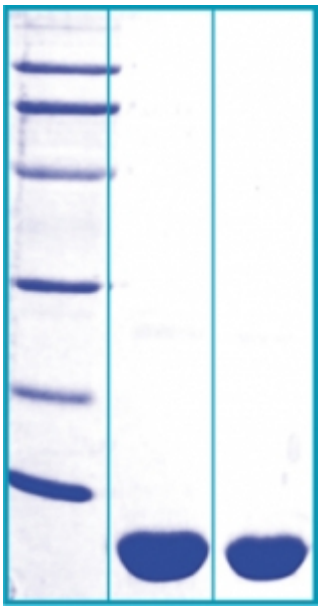
Amino Acid Sequence

MKHHHHHHAS TKLEEHLEGI VNIFHQYSVR KGHFDTLSKG ELKQLLTKEL ANTIKNIKDK AVIDEIFQGL DANQDEQVDF QEFISLVAIA LKAAHYHTHK E

Source

E. coli

SDS-PAGE gel



14% SDS-PAGE separation of Human S100A12 protein
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

Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/mL in 20mM TRIS, 50mM NaCl, pH 7.5

Reconstitution

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 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 limited period of time; it does not show any change after one week at 4°C.

Quality Control Test

BCA to determine quantity of the protein.

SDS PAGE to determine purity of the protein.

LAL to determine quantity of endotoxin.

Applications

Western blotting

HEADQUARTERS: BioVendor Laboratorní medicína, a.s.	Karasek 1767/1	621 00 Brno CZECH REPUBLIC	Phone: +420-549-124-185 Fax: +420-549-211-460	E-mail: info@biovendor.com sales@biovendor.com Web: www.biovendor.com
AUSTRIA: BioVendor GesmbH	Nußdorfer Straße 20/10	1090 Vienna AUSTRIA	Phone: +43-1-89090-25 Fax: +43-1-89090-2515	E-mail: infoAustria@biovendor.com
GERMANY, SWITZERLAND: BioVendor GmbH	Otto-Hahn-Straße 16	34123 Kassel GERMANY	Phone: +49-6221-433-9100 Fax: +49-6221-433-9111	E-mail: infoEU@biovendor.com
USA, CANADA AND MEXICO: BioVendor LLC	128 Bingham Rd. Suite 1300	Asheville, NC 28806 USA	Phone: +1-828-575-9250 +1-800-404-7807 Fax: +1-828-575-9251	E-mail: infoUSA@biovendor.com