S100G Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: S100 calcium-binding protein G, Vitamin D-dependent calcium-binding protein intestinal, CABP, Calbindin-D9k, CABP9K, CALB3, S100D

Cat. No.:
RD172225100 (0.1 mg)

Description

Total 87 AA. MW: 10.04 kDa (calculated). UniProtKB acc.no. P29377. N-Terminal His-tag, 9 extra AA (highlighted).

Introduction to the Molecule

S100G (S100 calcium binding protein G, Calbindin 3 (CALB3), CaBP9K, CABP1) is a member of the S100 family of calcium-binding proteins. The gene encoding human S100G is located on the X-chromosome (Xq22) and consists of three exons and contains four Alu repeats. The S100G protein (molecular weight 9 kDa) is monomeric and contains two Ca2+ binding motifs, a classical C-terminal EF-hand with a canonical Ca2+ binding loop and an S100-specific N-terminal EF-hand with a modified Ca2+ binding loop called ‘‘pseudo EF-hand’’. S100G protein is present in many organs, cartilage, bone and certain teeth, such as the ameloblasts of incisors and molars. In addition, S100G mRNA is detected in the proximal small intestine, but not in human kidney, uterus or placenta (however, the protein is present in these tissues in other species). S100G is also present in mammalian intestinal epithelial cells (enterocytes). S100G mediates the transport of calcium across the enterocytes from the apical side, where entry is regulated by the calcium channel TRPV6, to the basolateral side, where calcium pumps such as PMCA1 utilize intracellular adenosine triphosphate to pump calcium into the blood. The transport of calcium across the enterocyte cytoplasm appears to be rate-limiting for calcium absorption in the intestine; the presence of calbindin increases the amount of calcium crossing the cell without raising the free concentration. Expression of S100G, like that of calbindin-D28k, is stimulated by the active vitamin D metabolite, calcitriol although the precise mechanisms are still controversial. In mice that lack the receptor for vitamin D, S100G is reduced, but not absent. The members of the S100 family are multifunctional signaling proteins that influence with many cellular events. S100G appear to be involved in neurotrophic and/or neuroprotective processes, but the mechanisms of action are not completely understood. S100G has protective neurotrophic effects during brain development, and alterations in level may serve as an early, quantitative indicator of fetal brain damage in some biological fluids (eg, cord blood). Calcium-regulatory molecule S100G is dynamically expressed and regulated in the uterine endometrium during pregnancy and suggesting that regulation of calcium ion concentration may be critical for the establishment and maintenance of pregnancy in pigs.

Research topic

Cardiovascular disease, Neural tissue markers, Oncology, Others

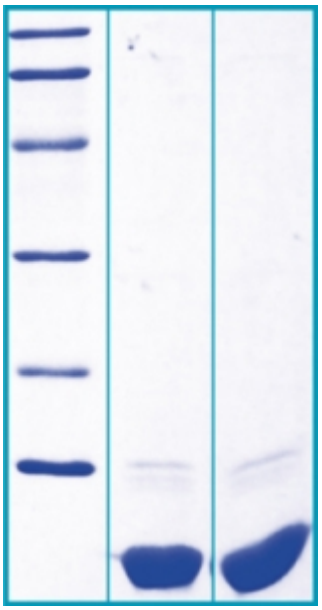
Amino Acid Sequence

MKHHHHHHAS TKKSPEELKR IFEKYAAKEG DPDQLSKDEL KLLIQAEFPS LLKGPNTLDD LFQELDKNGD GEVSFEEFQV LVKKISQ

Source

E. coli

SDS-PAGE gel



14% SDS-PAGE separation of Human S100G 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 -20°C. Lyophilized protein remains stable until the expiry date when stored at -20°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.

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: Web:	info@biovendor.com sales@biovendor.com 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