

S100A9 Protein, Human (sf9, His)

Cat. No.:	HY-P76587
Synonyms:	Protein S100-A9; Calgranulin-B; MRP-14; CAGB; CFAG
Species:	Human
Source:	Sf9 insect cells
Accession:	P06702 (M1-P114)
Gene ID:	6280
Molecular Weight:	Approximately 16 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μ m filtered solution of PBS, pH 7.4. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/ μ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μ g/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

S100A9, a calcium- and zinc-binding protein, plays a pivotal role in regulating inflammatory processes and immune responses. Its diverse functions include inducing neutrophil chemotaxis, adhesion, and enhancing the bactericidal activity of neutrophils through SYK, PI3K/AKT, and ERK1/2 activation, as well as promoting phagocytosis. Often found in the form of calprotectin (S100A8/A9), it serves intra- and extracellular roles, including facilitating leukocyte arachidonic acid trafficking and NADPH-oxidase activation intracellularly. Extracellularly, it exhibits pro-inflammatory, antimicrobial, oxidant-scavenging, and apoptosis-inducing activities, recruiting leukocytes, promoting cytokine and chemokine production, and regulating leukocyte adhesion and migration. Functioning as an alarmin or DAMP molecule, S100A9 stimulates innate immune cells via Toll-like receptor 4 (TLR4) and receptor for advanced glycation endproducts (AGER), activating MAP-kinase and NF-kappa-B signaling pathways. With antimicrobial activity against bacteria and fungi, it likely acts by chelating Zn(2+), essential for microbial growth. S100A9 can induce cell death through autophagy and apoptosis via mitochondrial-lysosomal cross-talk involving BNIP3 and regulates neutrophil number and apoptosis, acting as an anti-apoptotic factor. Its role as an oxidant scavenger protects against tissue damage by scavenging oxidants. Notably, S100A9 can act as a potent amplifier of inflammation in autoimmunity, cancer development, and tumor spread. It also exhibits transnitrosylase activity, contributing to S-nitrosylation of various targets, and forms complexes with other proteins, such as the iNOS-S100A8/A9 transnitrosylase complex, indicating its multifaceted involvement in immune regulation and inflammatory responses.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA