

S100A1 Protein, Human (His)

Cat. No.:	HY-P72783
Synonyms:	Protein S100-A1; S-100 protein alpha chain; S100A; S100A1; S100-alpha
Species:	Human
Source:	E. coli
Accession:	P23297 (M1-S94)
Gene ID:	6271
Molecular Weight:	Approximately 11.5 kDa

PROPERTIES

AA Sequence	<p>M G S E L E T A M E T L I N V F H A H S G K E G D K Y K L S K K E L K E L L Q T</p> <p>E L S G F L D A Q K D V D A V D K V M K E L D E N G D G E V D F Q E Y V V L V A</p> <p>A L T V A C N N F F W E N S</p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM Tris-HCl, 0.1 mM EDTA, pH 7.0.
Endotoxin Level	<1 EU/µg; determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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	<p>S100A1 is a small calcium-binding protein that plays crucial roles in various biological processes, including Ca(2+) homeostasis, chondrocyte biology, and cardiomyocyte regulation. Upon an increase in intracellular Ca(2+) levels, S100A1 binds calcium, triggering conformational changes that facilitate interactions with specific target proteins, subsequently modulating their activity. Particularly, in cardiomyocytes, S100A1 orchestrates a network governing sarcoplasmic reticulum Ca(2+) cycling and mitochondrial function by interacting with key proteins such as ryanodine receptors RYR1 and RYR2, sarcoplasmic reticulum Ca(2+)-ATPase/ATP2A2, and mitochondrial F1-ATPase. This multifaceted protein also contributes to diastolic Ca(2+) dissociation and myofilament mechanics, enhancing relaxation during diastole. S100A1 exists as a dimer of either two alpha chains, two beta chains, or one of each, and it forms heterodimers with S100P. Additionally, it engages in various interactions with proteins like AGER, CAPZA1, FKBP4, RYR1, RYR2, CACYBP, PPP5C, ATP2A2, PLN, ATP5F1A, and</p>
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ATP5F1B, participating in diverse cellular processes in a calcium-dependent manner.

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

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