ARG82037
Human S100A9 ELISA Kit

Package: 96 wells
Store at: 4°C

Summary

Product Description	ARG82037 Human S100A9 ELISA Kit is an Enzyme Immunoassay kit for the quantification of Human S100A9 in serum, plasma and cell culture supernatants.
Tested Reactivity	Hu
Tested Application	ELISA
Specificity	The following recombinant Human proteins were tested and exhibited no cross-reactivity or interference: S100B, S100A1, Adiponectin, BMP1, BMP2, BMP4, BMP7, CRP, CCL2, CCL4, CCL5, HGF, HSP27, IGF1, IL1β, IL2, IL4, IL5, IL6, IL8, IL12, IL13, IL15, IL17C, IL21, IFNγ, PDGF, PLA2G7, serpin E1, TGF beta1, TGF beta2, TGF beta3, TLR1, TLR2, TLR3, TLR9, TNF alpha, TNF RI, TNF RII, VEGF, VEGF R1. The kit detects S100A8/S100A9 dimer.
Target Name	S100A9
Conjugation	HRP
Conjugation Note	Read at 450 nm.
Sensitivity	12 pg/ml
Sample Type	Serum, plasma and cell culture supernatants.
Standard Range	62 - 4000 pg/ml
Sample Volume	100 µl
Precision	Intra-Assay CV: 5%; Inter-Assay CV: 8%
Alternate Names	Calgranulin-B; MRP-14; MRP14; 60B8AG; CFAG; MAC387; Calprotectin L1H subunit; NIF; MIF; p14; LIAG; Protein S100-A9; CGLB; Migration inhibitory factor-related protein 14; L1AG; Leukocyte L1 complex heavy chain; P14; CAGB; S100 calcium-binding protein A9

Application Instructions

Assay Time	~ 3 hours

Properties

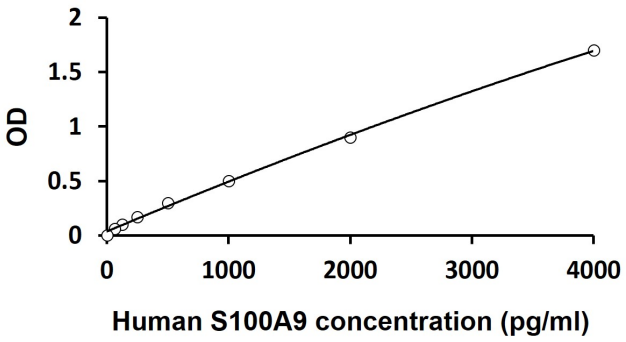
Form	96 well
Storage instruction	Store the kit at 2-8°C. Keep microplate wells sealed in a dry bag with desiccants. Do not expose test reagents to heat, sun or strong light during storage and usage. Please refer to the product user manual for detail temperatures of the components.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	S100A9
Gene Full Name	S100 calcium binding protein A9

Background	The protein encoded by this gene is a member of the S100 family of proteins containing 2 EF-hand calcium-binding motifs. S100 proteins are localized in the cytoplasm and/or nucleus of a wide range of cells, and involved in the regulation of a number of cellular processes such as cell cycle progression and differentiation. S100 genes include at least 13 members which are located as a cluster on chromosome 1q21. This protein may function in the inhibition of casein kinase and altered expression of this protein is associated with the disease cystic fibrosis. This antimicrobial protein exhibits antifungal and antibacterial activity. [provided by RefSeq, Nov 2014]
Function	S100A9 is a calcium- and zinc-binding protein which plays a prominent role in the regulation of inflammatory processes and immune response. It can induce neutrophil chemotaxis, adhesion, can increase the bactericidal activity of neutrophils by promoting phagocytosis via activation of SYK, PI3K/AKT, and ERK1/2 and can induce degranulation of neutrophils by a MAPK-dependent mechanism. Predominantly found as calprotectin (S100A8/A9) which has a wide plethora of intra- and extracellular functions. The intracellular functions include: facilitating leukocyte arachidonic acid trafficking and metabolism, modulation of the tubulin-dependent cytoskeleton during migration of phagocytes and activation of the neutrophilic NADPH-oxidase. Activates NADPH-oxidase by facilitating the enzyme complex assembly at the cell membrane, transferring arachidonic acid, an essential cofactor, to the enzyme complex and S100A8 contributes to the enzyme assembly by directly binding to NCF2/P67PHOX. The extracellular functions involve proinfammatory, antimicrobial, oxidant-scavenging and apoptosis-inducing activities. Its proinflammatory activity includes recruitment of leukocytes, promotion of cytokine and chemokine production, and regulation of leukocyte adhesion and migration. Acts as an alarmin or a danger associated molecular pattern (DAMP) molecule and stimulates innate immune cells via binding to pattern recognition receptors such as Toll-like receptor 4 (TLR4) and receptor for advanced glycation endproducts (AGER). Binding to TLR4 and AGER activates the MAP-kinase and NF-kappa-B signaling pathways resulting in the amplification of the proinflammatory cascade. Has antimicrobial activity towards bacteria and fungi and exerts its antimicrobial activity probably via chelation of Zn(2+) which is essential for microbial growth. Can induce cell death via autophagy and apoptosis and this occurs through the cross-talk of mitochondria and lysosomes via reactive oxygen species (ROS) and the process involves BNIP3. Can regulate neutrophil number and apoptosis by an anti-apoptotic effect; regulates cell survival via ITGAM/ITGB and TLR4 and a signaling mechanism involving MEK-ERK. Its role as an oxidant scavenger has a protective role in preventing exaggerated tissue damage by scavenging oxidants. Can act as a potent amplifier of inflammation in autoimmunity as well as in cancer development and tumor spread. Has transnitrosylase activity; in oxidatively-modified low-densitity lipoprotein (LDL(ox))-induced S-nitrosylation of GAPDH on 'Cys-247' proposed to transfer the NO moiety from NOS2/iNOS to GAPDH via its own S-nitrosylated Cys-3. The iNOS-S100A8/A9 transnitrosylase complex is proposed to also direct selective inflammatory stimulus-dependent S-nitrosylation of multiple targets such as ANXA5, EZR, MSN and VIM by recognizing a [IL]-x-C-x-x-[DE] motif. [UniProt]
Highlight	Related products: S100A antibodies; S100A ELISA Kits; Related news: HMGB1, a biomarker and therapeutic target in COVID-19 New ELISA data calculation tool: Simplify the ELISA analysis by GainData
PTM	Phosphorylated. Phosphorylation inhibits activation of tubulin polymerization. S-nitrosylation of Cys-3 is implicated in LDL(ox)-induced S-nitrosylation of GAPDH at 'Cys-247' through a transnitrosylase mechanism involving a iNOS-S100A8/9 complex (PubMed:25417112). [UniProt]
Cellular Localization	Secreted. Cytoplasm. Cytoplasm, cytoskeleton. Cell membrane; Peripheral membrane protein. Note=Predominantly localized in the cytoplasm. Upon elevation of the intracellular calcium level, translocated from the cytoplasm to the cytoskeleton and the cell membrane. Upon neutrophil activation or endothelial adhesion of monocytes, is secreted via a microtubule-mediated, alternative pathway. [UniProt]

Images



ARG82037 Human S100A9 ELISA Kit standard curve image

ARG82037 Human S100A9 ELISA Kit results of a typical standard run with optical density reading at 450 nm.