Recombinant Human S100A8/S100A9 Heterodimer Protein, Met1-Glu93 and Thr2-Pro114

Cat. No. S100A8/S100A9-54H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant human S100A8 (Met1-Glu93) and S100A9 (Thr2-Pro114) Heterodimer protein without tag was expressed in E. coli.
Species	Human
Source	E.coli
ProteinLength	S100A8: Met1-Glu93; S100A9: Thr2-Pro114
Description	S100A8 (also known as MRP8, Calgranulin A, and CP-10) and S100A9 (also known as MRP14 and Calgranulin B) are pro-inflammatory members of the S100 family of secreted calcium binding proteins. They are up-regulated in neutrophils and monocytes at sites of inflammation (e.g. psoriasis, rheumatoid arthritis, cardiac ischemia) and are present at elevated concentrations in rheumatoid arthritis synovial fluid. The 10 kDa human S100A8 and 14 kDa S100A9 each contain two EF-hand calcium binding motifs. Human S100A8 shares 57% and 61% amino acid (aa) sequence identity with mouse and rat S100A8, respectively. Human S100A9 shares 57% and 62% amino acid sequence identity with mouse and rat S100A9, respectively. S100A8 and S100A9 are noncovalent homodimers that can also noncovalently heterodimerize; in the presence of calcium and zinc, the homodimer and heterodimers will form tetramers. The heterodimer additionally binds and sequesters manganese, thereby restricting the growth of Mn-dependent bacteria. The S100A8/A9 heterodimer exhibits functions beyond those performed by the individual

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	proteins. These include binding to fatty acids such as arachidonic acid and promoting astrocyte proliferation. S100A8, S100A9, and the heterodimer each promote neutrophil infiltration into sites of inflammation and inflammatory cytokine production by monocytes.
Form	Noncovalently-linked heterodimer
Bio-activity	Measured by its ability to induce IL-6 secretion by A375 human melanoma cells. The ED50 for this effect is 1.5-6 μg/mL.
Molecular Mass	Predicted Molecular Mass: 11 kDa (S100A8) & 13 kDa (S100A9) SDS-PAGE: 9 kDa (S100A8) & 13 kDa (S100A9), reducing conditions
Endotoxin	< 0.10 EU/μg of the protein by the LAL method.
Purity	> 95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
N-terminal Sequence Analysis	Met1 (S100A8) & Thr2 (S100A9)
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 12 months from date of receipt, -20 to -70 centigrade as supplied. 1 month, 2 to 8 centigrade under sterile conditions after reconstitution. 3 months, -20 to -70 centigrade under sterile conditions after reconstitution.
Storage Buffer	Lyophilized from a 0.2 μm filtered solution in PBS and DTT.
Reconstitution	Reconstitute at 500 μg/mL in sterile PBS.
References	1. Averill, M.M. et al. (2012) Arterioscler. Thromb. Vasc. Biol. 32:223.

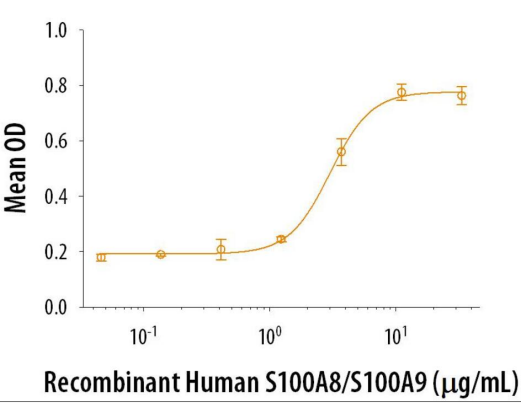
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2. Vogl, T. et al. (2012) Int. J. Mol. Sci. 13:2893.
3. Siegenthaler, G. et al. (1997) J. Biol. Chem. 272:9371.

GENE INFORMATION

Gene Name	S100A8 S100 calcium binding protein A8 [Homo sapiens (human)]
Official Symbol	S100A8
Synonyms	S100A8; S100 calcium binding protein A8; P8; MIF; NIF; CAGA; CFAG; CGLA; L1Ag; MRP8; CP-10; MA387; 60B8AG; S100-A8; protein S100-A8; calgranulin A; calprotectin L1L subunit; cystic fibrosis antigen; leukocyte L1 complex light chain; migration inhibitory factor-related protein 8; urinary stone protein band A; S100 Calcium Binding Protein A8/S100 Calcium Binding Protein A9; S100A8/S100A9; S100A9; S100 calcium binding protein A9; MIF; NIF; P14; CAGB; CFAG; CGLB; L1AG; LIAG; MRP14; 60B8AG; MAC387; S100-A9; protein S100-A9; MRP-14; calgranulin B; calprotectin L1H subunit; leukocyte L1 complex heavy chain; migration inhibitory factor-related protein 14
Gene ID	6279
mRNA Refseq	NM_002964
Protein Refseq	NP_002955
MIM	123885
UniProt ID	P05109

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Bioactivity	 Recombinant Human S100A8/S100A9 Heterodimer induces IL-6 secretion by A375 human melanoma cells. The ED50 for this effect is 1.5-6 μg/mL.

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