Recombinant Human S100A8/S100A9 Heterodimer

Catalog Number: 8226-S8

DESCRIPTION

Source	*E. coli*-derived Met1-Glu93 (S100A8) & Thr2-Pro114 (S100A9) Accession # P05109 (S100A8) & P06702 (S100A9)
N-terminal Sequence Analysis	Met1 (S100A8) & Thr2 (S100A9)
Structure / Form	Noncovalently-linked heterodimer
Predicted Molecular Mass	11 kDa (S100A8) & 13 kDa (S100A9)

SPECIFICATIONS

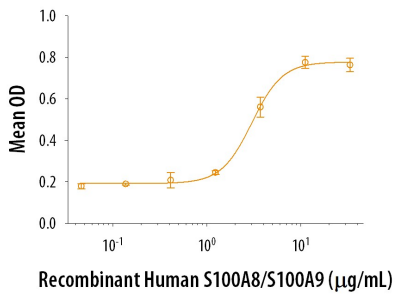
SDS-PAGE	9 kDa (S100A8) & 13 kDa (S100A9), reducing conditions
Activity	Measured by its ability to induce IL-6 secretion by A375 human melanoma cells. Hibino, T. *et al.* (2013) Cancer Res. **73**:172. The ED_{50} for this effect is 1.5-6 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS and DTT. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Bioactivity



Recombinant Human S100A8/S100A9 Heterodimer (Catalog # 8226-S8) induces IL-6 secretion by A375 human melanoma cells. The ED_{50} for this effect is 1.5-6 µg/mL.

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BACKGROUND

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 (1, 2). 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 (3-5). 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 (6, 7). 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 (8-10). The heterodimer additionally binds and sequesters manganese, thereby restricting the growth of Mn-dependent bacteria (11). The S100A8/A9 heterodimer exhibits functions beyond those performed by the individual proteins. These include binding to fatty acids such as arachidonic acid and promoting astrocyte proliferation (3, 12). S100A8, S100A9, and the heterodimer each promote neutrophil infiltration into sites of inflammation and inflammatory cytokine production by monocytes (4, 5, 9).

References:

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