

DESCRIPTION

Source	E. coli-derived	
	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Mouse S100A8 (Pro2-Glu89) Accession # P27005 </div>	
	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> Mouse S100A9 (Ala2-Lys113) Accession # P31725 </div>	
	N-terminus	C-terminus

N-terminal Sequence Analysis	Pro2 (S100A8), Ala2 (S100A9)
Structure / Form	Non-covalent heterodimer
Predicted Molecular Mass	10 kDa (S100A8), 13 kDa (S100A9)

SPECIFICATIONS

SDS-PAGE	7 kDa and 12 kDa, reducing conditions
Activity	Measured by its ability to induce IL-6 secretion by A375 human melanoma cells. Hibino, T. <i>et al.</i> (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 PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 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

<p>Bioactivity</p> <p style="text-align: center;">Recombinant Mouse S100A8/S100A9 (µg/mL)</p>	<p>Recombinant Mouse S100A8/S100A9 (Catalog # 8916-S8) induces IL-6 secretion by A375 human melanoma cells. The ED₅₀ for this effect is 1.5-6 µg/mL.</p>
<p>SDS-PAGE</p>	<p>1 µg/lane of Recombinant Mouse S100A8/S100A9 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing R bands at 6.3, 10.8 kDa and NR band at 9.6 kDa.</p>

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). The 10 kDa S100A8 and 14 kDa S100A9 each contain two EF-hand calcium binding motifs. Mouse S100A8 shares 57% and 80% amino acid (aa) sequence identity with human and rat S100A8, respectively. Mouse S100A9 shares 57% and 79% amino acid sequence identity with human and rat S100A9, respectively (3, 4). S100A8 and S100A9 can associate into non-covalent homodimers and 34-35 kDa heterodimers known as S100A8/9 or Calprotectin. The presence of calcium and zinc also induces the formation of the tetramer (5, 6). S100A8 and S100A9 are up-regulated in neutrophils, monocytes, Schwann cells, and keratinocytes at sites of inflammation (7-13). The S100A8/9 heterodimer is elevated in rheumatoid arthritis synovial fluid and in the serum of cardiovascular disease, atopic dermatitis, and psoriatic arthritis patients (1, 9, 13-15). It exerts its effects through the receptors RAGE and TLR4 (11, 16). The heterodimer promotes neutrophil infiltration into sites of inflammation and inflammatory cytokine production by monocytes (5, 8, 9, 12). It promotes astrocyte proliferation (16) and the suppression of tumor growth by promoting the influx and activation of NK cells (10, 11). The S100A8/9 heterodimer additionally binds to unsaturated fatty acids such as arachidonic acid (7), and it sequesters manganese, thereby restricting the growth of Mn-dependent bacteria (17).

References:

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