

**DESCRIPTION**

<b>Source</b>	<i>E. coli</i> -derived Ala2-Lys113 Accession # P31725
<b>N-terminal Sequence Analysis</b>	Ala2
<b>Structure / Form</b>	Noncovalently-linked homodimer
<b>Predicted Molecular Mass</b>	13 kDa

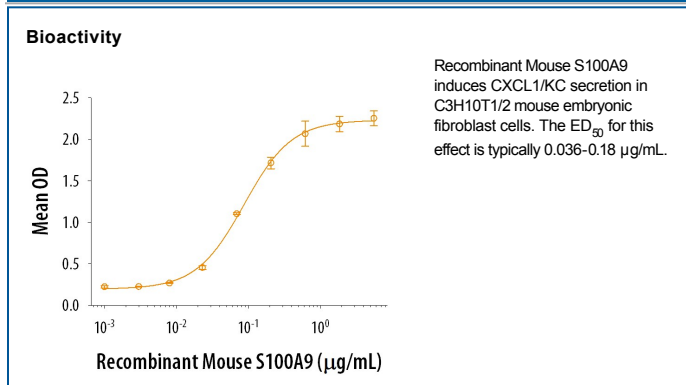
**SPECIFICATIONS**

<b>SDS-PAGE</b>	13 kDa, reducing conditions
<b>Activity</b>	Measured by its ability to induce CXCL1/KC secretion by C3H10T1/2 mouse embryonic fibroblast cells. The ED <sub>50</sub> for this effect is typically 0.036-0.18 µg/mL.
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in Tris and TCEP. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 300 µg/mL in sterile water.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**DATA**



**BACKGROUND**

S100A9, also known as MRP14 and Calgranulin B, is an approximately 14 kDa pro-inflammatory protein in the S100 family of calcium binding proteins (1, 2). It is up-regulated in neutrophils and monocytes at sites of inflammation (e.g. psoriasis, rheumatoid arthritis, cardiac ischemia) and is present at elevated concentrations in rheumatoid arthritis synovial fluid (3-6). Mouse S100A9 contains two EF-hand calcium binding motifs and shares 57% and 79% amino acid sequence identity with human and rat S100A9, respectively (7). S100A9 is a noncovalent homodimer that can also noncovalently heterodimerize with S100A8; in the presence of calcium and zinc, the homodimer and heterodimers will form tetramers (8-10). Human S100A9 can be phosphorylated at Thr113 near the C-terminus, a residue which is not conserved in the mouse protein (11). Human S100A9 can also be modified by S-glutathionylation and oxidation (12). The S100A8/A9 heterodimer binds to fatty acids such as arachidonic acid, while neither monomer does (4). S100A9 and the heterodimer promote neutrophil infiltration and degranulation at sites of inflammation and inflammatory cytokine production by monocytes (5, 6, 9, 13). S100A9 also promotes cartilage matrix destruction in osteoarthritis (14) as well as RAGE-dependent cardiac fibrosis and remodeling (6). In the brain, the S100A9 homodimer promotes neuronal cytotoxicity, although this is reduced by its binding to amyloid-beta peptide (15).

**References:**

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