

## DESCRIPTION

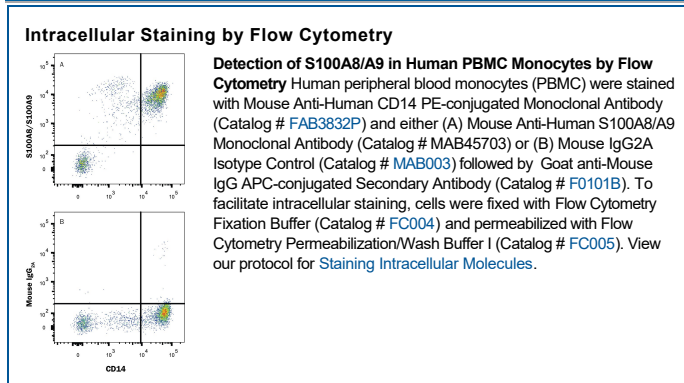
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human S100A8/S100A9 heterodimer in direct ELISAs. In direct ELISAs, no detection of recombinant human S100A8 or S100A9 monomers was observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2A</sub> Clone # 900028
<b>Purification</b>	Protein A or G purified from cell culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human S100A8/S100A9 heterodimer Met1-Glu93 (S100A8) & Thr2-Pro114 (S100A9) Accession # P05109 (S100A8) and P06702 (S100A9)
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
<b>Intracellular Staining by Flow Cytometry</b>	0.25 µg/10 <sup>6</sup> cells	See Below
<b>CyTOF-ready</b>	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
<b>ELISA</b>	This antibody functions as an ELISA capture antibody when paired with Mouse Anti-Human S100A8/S100A9 Heterodimer Monoclonal Antibody (Catalog # <a href="#">MAB45702</a> ).  <i>This product is intended for assay development on various assay platforms requiring antibody pairs. We recommend the Human S100A8/S100A9 Heterodimer DuoSet ELISA Kit (Catalog # <a href="#">DY8226-05</a>) for convenient development of a sandwich ELISA or the Human S100A8/S100A9 Heterodimer Quantikine ELISA Kit (Catalog # <a href="#">DS8900</a>) for a complete optimized ELISA.</i>	

## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <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>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## 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). In the presence of calcium or zinc, S100A8 and S100A9 associate into non-covalent homodimers and 34-35 kDa heterodimers with each other (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:

1. Averill, M.M. *et al.* (2012) *Arterioscler. Thromb. Vasc. Biol.* **32**:223.
2. Vogl, T. *et al.* (2012) *Int. J. Mol. Sci.* **13**:2893.
3. Siegenthaler, G. *et al.* (1997) *J. Biol. Chem.* **272**:9371.
4. Sunahori, K. *et al.* (2006) *Arthritis Res. Ther.* **8**:R69.
5. Volz, H.C. *et al.* (2012) *Basic Res. Cardiol.* **107**:250.
6. Odink, K. *et al.* (1987) *Nature* **330**:80.
7. Dorin, J.R. *et al.* (1987) *Nature* **326**:614.
8. Teigelkamp, S. *et al.* (1991) *J. Biol. Chem.* **266**:13462.
9. Ryckman, C. *et al.* (2003) *J. Immunol.* **170**:3233.
10. Vogl, T. *et al.* (2006) *Biochim. Biophys. Acta* **1763**:1298.
11. Damo, S.M. *et al.* (2013) *Proc. Natl. Acad. Sci. USA* **110**:3841.
12. Ryu, M.-J. *et al.* (2012) *J. Biol. Chem.* **287**:22948.