

## DESCRIPTION

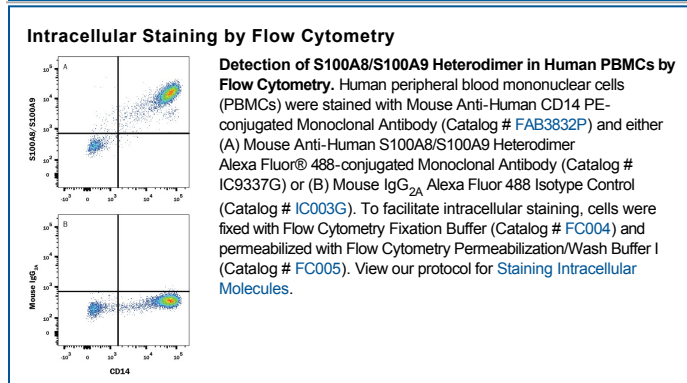
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human S100A8/S100A9 in direct ELISAs. In ELISAs, it detects recombinant human S100A8/S100A9 heterodimer but it does not detect recombinant human S100A8 or S100A9 monomers.
<b>Source</b>	Monoclonal Mouse IgG <sub>2A</sub> Clone # 900028
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human S100A8/S100A9 heterodimer Met1-Glu93 (S100A8) & Thr2-Pro114 (S100A9) Accession # P05109 (S100A8) & P06702 (S100A9)
<b>Conjugate</b>	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
<b>Formulation</b>	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

## 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
Intracellular Staining by Flow Cytometry	5 µL/10 <sup>6</sup> cells	See Below

## DATA



## PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, 2 to 8 °C as supplied.</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.

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