

DESCRIPTION

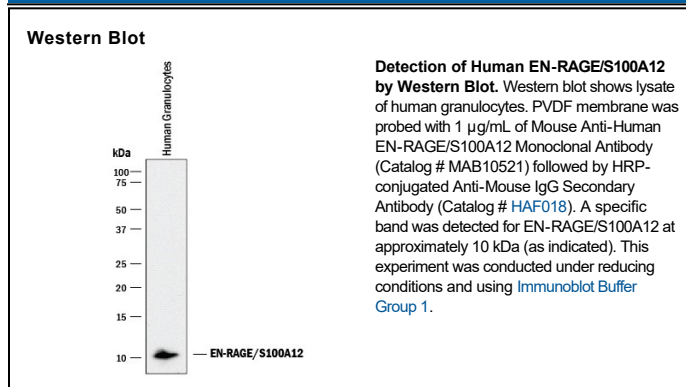
Species Reactivity	Human
Specificity	Detects recombinant human EN-RAGE in direct ELISAs.
Source	Monoclonal Mouse IgG _{2B} Clone # 161205
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human EN-RAGE Met1-Glu92 Accession # P80511
Formulation	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
Western Blot	1 µg/mL	See Below
Flow Cytometry	2.5 µg/10 ⁶ cells	Human whole blood
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	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
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <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. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

EN-RAGE, also known as S100A12 and Calgranulin C, is a 10 kDa member of the S100 (soluble in 100% saturated ammonium sulfate) family of EF-hand calcium-binding proteins. Like other S100 proteins, S100A12 is small and generally acidic (1-3). EN-RAGE forms noncovalent homodimers in the absence of divalent cations (4-6); calcium and zinc promote the formation of higher order assemblies including tetramers and hexamers (4, 7, 8). The ability of S100A12 to chelate zinc enables it to inhibit the zinc-dependent metalloproteases MMP-2, -3, and -9 (8). S100A12 also forms heterodimers with S100A9 and binds to RAGE (Receptor for Advanced Glycation End-products), Annexin V, and several cytosolic enzymes involved in energy metabolism (9, 10). The hexameric form of EN-RAGE in particular binds RAGE with high affinity (7). EN-RAGE induces a variety of inflammatory responses including the *in vivo* recruitment of neutrophils, monocytes, and mast cells and the activation of mast cells and vascular endothelial cells (9, 11-14). EN-RAGE is found at elevated levels under inflammatory conditions such as asthma, gout, rheumatoid arthritis synovial fluid, and atherosclerosis (8, 12, 14). S100A12 also promotes neurite outgrowth in isolated hippocampal neurons (15). An ortholog of S100A12 has not been identified in rodents, but the human protein is functional in mice and rats (11-16).

References:

1. Santamaria-Kisiel, L. *et al.* (2006) *Biochem. J.* **396**:201.
2. Leclerc, E. *et al.* (2009) *Biochim. Biophys. Acta* **1793**:993.
3. Wicki, R. *et al.* (1996) *Cell Calcium* **20**:459.
4. Moroz, O.V. *et al.* (2009) *BMC Biochem.* **10**:11.
5. Miranda, L.P. *et al.* (2001) *FEBS Lett.* **488**:85.
6. Vogl, T. *et al.* (1999) *J. Biol. Chem.* **274**:25291.
7. Xie, J. *et al.* (2007) *J. Biol. Chem.* **282**:4218.
8. Goyette, J. *et al.* (2009) *J. Immunol.* **183**:593.
9. Hatakeyama, T. *et al.* (2004) *Eur. J. Biochem.* **271**:3765.
10. Hofmann, M.A. *et al.* (1999) *Cell* **97**:889.
11. Yang, Z. *et al.* (2001) *J. Leukoc. Biol.* **69**:986.
12. Rouleau, P. *et al.* (2003) *Clin. Immunol.* **107**:46.
13. Yan, W.X. *et al.* (2008) *J. Biol. Chem.* **283**:13035.
14. Yang, Z. *et al.* (2007) *J. Allergy Clin. Immunol.* **119**:106.
15. Mikkelsen, S.E. *et al.* (2001) *J. Neurochem.* **79**:767.
16. Fuellen, G. *et al.* (2004) *OMICS* **8**:334.