

## DESCRIPTION

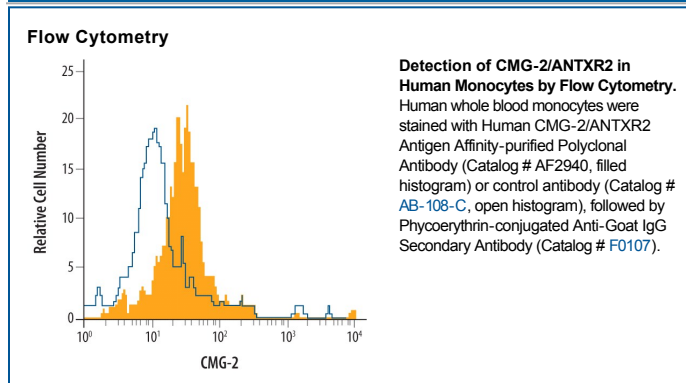
|                           |   |
|---------------------------|---|
| <b>Species Reactivity</b> | Human   |
| <b>Specificity</b>        | Detects human CMG-2/ANTXR2 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 20% cross-reactivity with recombinant mouse CMG-2 is observed.                               |
| <b>Source</b>             | Polyclonal Goat IgG   |
| <b>Purification</b>       | Antigen Affinity-purified   |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant human CMG-2/ANTXR2 isoform 1<br>Gln34-Asn317<br>Accession # P58335  |
| <b>Formulation</b>        | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*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.

|                       | <b>Recommended Concentration</b>  | <b>Sample</b>                                      |
|-----------------------|---|--|
| <b>Western Blot</b>   | 0.1 µg/mL   | Recombinant Human CMG-2/ANTXR2 (Catalog # 2940-CM) |
| <b>Flow Cytometry</b> | 2.5 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 detection antibody when paired with Mouse Anti-Human CMG-2/ANTXR2 Monoclonal Antibody (Catalog # MAB29401).<br><i>This product is intended for assay development on various assay platforms requiring antibody pairs.</i> |  |

## DATA



## PREPARATION AND STORAGE

|                                |  |
|--------------------------------|--|
| <b>Reconstitution</b>          | Reconstitute at 0.2 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.<br>*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

Capillary Morphogenesis Gene-2 (CMG-2) is a widely expressed anthrax toxin receptor (ATR) family protein (1-3). CMG-2 is a 55 kDa type I transmembrane (TM) protein that contains a 33 amino acid (aa) signal sequence, a 284 aa extracellular domain (ECD), a 24 aa TM segment, and a 147 aa cytoplasmic domain. There are three additional isoforms. Isoform 4 shows a 12 aa insertion in the cytoplasmic region; isoform 2 shows a 103 aa deletion in the ECD; and isoform 3 is a truncated, 20 kDa, 289 aa soluble form. The main functional domain of CMG-2 is an extracellular integrin-like von Willebrand factor type A (VWA) domain with a metal ion dependent adhesion site (MIDAS). This domain adheres selectively to collagen type IV and laminin (1-5). CMG-2 isoform 2 is induced in HUVEC as they undergo capillary formation in collagen matrices *in vitro* (3). CMG-2 is mutated in juvenile hyaline fibromatosis and infantile systemic hyalinosis disorders, and several of these mutations result in loss of laminin binding (6). CMG-2 and the related protein ATR/TEM8 serve as receptors for the protective antigen (PA) of *Bacillus Anthracis* (1, 2). After binding the VWA domain, PA undergoes furin-type cleavage, forms a heptameric receptor/PA pre-pore and binds LF or EF toxin subunits (5, 7, 8). Transport to low pH endosomes, which requires CMG-2 ubiquitination and interaction with the LDL receptor related protein LRP6 (9, 10), allows PA pore formation and release of toxin to the cytoplasm (10, 11). Soluble CMG-2 VWA domain acts as a dummy receptor that can protect cultured cells from anthrax intoxication (2). Within the extracellular region, human CMG-2 shares 84%, 81%, 89% and 93% amino acid sequence homology with mouse, rat, bovine, and canine CMG-2, respectively. CMG-2 VWA domain also shares 60% aa identity with ATR/TEM8.

## References:

1. Scobie, H.M. and J.A.T. Young (2005) *Curr. Opin. Microbiol.* **8**:106.
2. Scobie, H.M. *et al.* (2003) *Proc. Natl. Acad. Sci. USA* **100**:5170.
3. Bell, S.E. *et al.* (2001) *J. Cell Sci.* **114**:2755.
4. Lacy, D.B. *et al.* (2004) *Proc. Natl. Acad. Sci. USA* **101**:6367.
5. Santelli, E. *et al.* (2004) *Nature* **430**:905.
6. Dowling, O. *et al.* (2003) *Am. J. Hum. Genet.* **73**:957.
7. Wigelsworth, D.J. *et al.* (2004) *J. Biol. Chem.* **279**:23349.
8. Go, M.Y. *et al.* (2006) *J. Mol. Biol.* **360**:145.
9. Abrami, L. *et al.* (2006) *J. Cell Biol.* **172**:309.
10. Wei, W. *et al.* (2006) *Cell* **124**:1141.
11. Lacy, D.B. *et al.* (2004) *Proc. Natl. Acad. Sci. USA* **101**:13147.