Human EMR2 Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF4894

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human EMR2 in direct ELISAs and Western blots. In direct ELISAs, this antibody shows less than 1% cross-reactivity with recombinant mouse EMR1.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant human EMR2 Gln24-Gln478 (Gln24 predicted) Accession # NP_038475
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 as a 0.2 μm filtered solution in PBS.

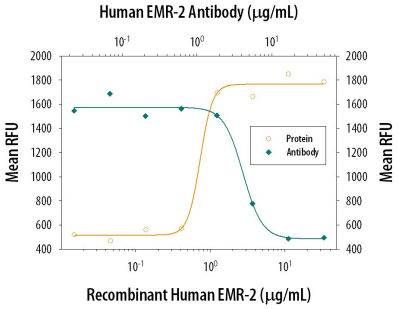
APPLICATIONS

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
Neutralization	Measured by its ability to neutralize EMR2-mediated adhesion of the NIH-3T3 mouse embryonic fibroblast cell line. Stacey, M. *et al.* (2003) Blood **102**:29161. The Neutralization Dose (ND_{50}) is typically 1.5-6 µg/mL in the presence of 1.5 µg/mL Recombinant Human EMR2.	

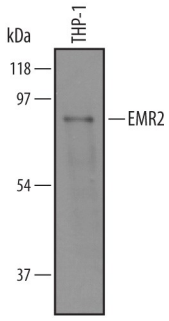
DATA

Neutralization



Cell Adhesion Mediated by EMR2 and Neutralization by Human EMR2 Antibody. Recombinant Human EMR2 (Catalog # 4894-EM), immobilized onto a microplate, supports the adhesion of the NIH-3T3 mouse embryonic fibroblast cell line in a dose-dependent manner (orange line). Adhesion elicited by Recombinant Human EMR2 (1.5 µg/mL) is neutralized (green line) by increasing concentrations of Sheep Anti-Human EMR2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4894). The ND_{50} is typically 1.5-6 µg/mL.

Western Blot



Detection of Human EMR2 by Western Blot. Western blot shows lysates of THP-1 human acute monocytic leukemia cell line. PVDF membrane was probed with 1 µg/mL of Sheep Anti-Human EMR2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF4894) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for EMR2 at approximately 90 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 8.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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.** ● 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.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

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BACKGROUND

EMR2 (EGF-like module-containing mucin-like receptor 2; designated CD312) is a glycoprotein belonging to the EGF-TM7 family of adhesion-type class B 7-transmembrane (TM) receptors. EGF-like sequences within long extracellular N-termini, and a GPS (G-protein proteolytic site) domain are characteristic of this family, which is mainly expressed on cells of the immune system (1, 2). The human EMR2 cDNA encodes an 823 amino acid (aa) protein with five EGF-like domains within the first 250 aa, followed by a mucin-like stalk, a GPS domain (aa 479-530) and a 7-TM sequence (aa 531-785). The GPS domain is the site of autocatalytic cleavage, forming two cleaved portions that remain non-covalently attached as a heterodimer (1, 3). Of the first 290 aa of human EMR2, 284 aa (97%) are identical with family member CD97, likely due to gene duplication (2). The portion of human EMR2 N-terminal to the GPS domain (aa 1-478) shares 64%, 59%, 48% and 45% aa identity with corresponding regions of canine EMR2, equine EMR2, mouse CD97 and rat CD97, respectively. Alternate splicing of EMR2 creates isoforms that contain 2-5 EGF-like domains. Only the 5-EGF form contains EGF4, which is necessary for calcium-dependent binding of the EMR2/CD97 ligand, chondroitin sulfate (CS) (2, 4-6). None of the isoforms engage the CD97 ligand, CD55 (DAF). EMR2 is restricted to myeloid cells (1, 2). EMR2 expression increases as monocytes differentiate into macrophages, and decreases with differentiation into dendritic cells (5). Activation increases neutrophil EMR2 expression (5). EMR2 localizes to the leading edge of migrating neutrophils and plays an important role in migration, adhesion and superoxide production (7). It is also thought to facilitate specific interaction of myeloid cells with peripheral B lymphocytes which express CS (6).

References:

1. Kwakkenbos, M.J. *et al.* (2004) Immunogenetics **55**:655.
2. Lin, H.-H. *et al.* (2000) Genomics **67**:188.
3. Lin, H.-H. *et al.* (2004) J. Biol. Chem. **279**:31823.
4. Stacey, M. *et al.* (2003) Blood **102**:2916.
5. Chang G.-W. *et al.* (2007) Biochem. Biophys. Res. Commun. **353**:133.
6. Kwakkenbos, M.J. *et al.* (2005) J. Leukoc. Biol. **77**:112.
7. Yona, S. *et al.* (2008) FASEB J. **22**:741.

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bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956