Human EMR2 Alexa Fluor® 488-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 494025

Catalog Number: FAB4894G
100 TESTS

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human EMR2. Stains human EMR2-transfected cells but not the parental cell line.
Source	Monoclonal Mouse IgG_{2B} Clone # 494025
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	NS0 mouse myeloma cell line transfected with human EMR2 Gln24-Asn823 Accession # AAI27006
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	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.

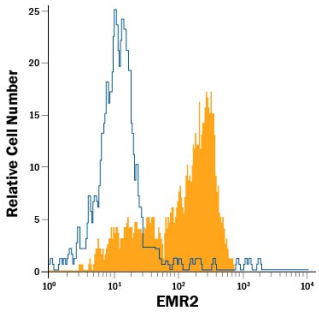
APPLICATIONS

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
Flow Cytometry	5 µL/10^6 cells	See Below

DATA

Flow Cytometry



Detection of EMR2 in Human PBMCs by Flow Cytometry. Human peripheral blood monocytes were stained with Mouse Anti-Human EMR2 Alexa Fluor® 488-conjugated Monoclonal Antibody (Catalog # FAB4894G, filled histogram) or isotype control antibody (Catalog # IC0041G, open histogram). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Protect from light. Do not freeze.** • 12 months from date of receipt, 2 to 8 °C as supplied.

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 Hormone Receptor 2), designated CD312, is a 90-100 kDa 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 (1-3). 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 a 70 kDa N-terminal, and a 30 kDa C-terminal portion that remains non-covalently attached as a heterodimer (2, 4). Of the first 290 aa of human EMR2, 284 aa (97%) are identical with family member CD97, likely due to gene duplication (3). 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. There is no mouse ortholog for human EMR2. 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) (3, 5-7). None of the isoforms engage the CD97 ligand, CD55 (DAF). Notably, alternative trans-splicing produces a EMR2:CD97 hybrid where the third EGF-likek motif of CD97 is substituted for the third EGF-like motif of EMR2 (8). EMR2 is restricted to myeloid cells (2, 3). EMR2 expression increases as monocytes differentiate into macrophages, and decreases with differentiation into dendritic cells (6). Activation increases neutrophil EMR2 expression (6). EMR2 localizes to the leading edge of migrating neutrophils and plays an important role in migration, adhesion and superoxide production (9). It is also thought to facilitate specific interaction of myeloid cells with peripheral B lymphocytes which express CS (7).

References:

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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