Human MFG-E8 Antibody

Monoclonal Mouse IgG_{2A} Clone # 278901

Catalog Number: MAB2767

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human MFG-E8 in direct ELISAs and Western blots. In direct ELISAs and Western blots, this antibody does not cross-react with recombinant human (rh) C1r, rhC1s, rhC2, or rmMFG-E8.
Source	Monoclonal Mouse IgG_{2A} Clone # 278901
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human MFG-E8 Leu24-Cys387 Accession # Q08431
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

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	Recombinant Human MFG-E8 (Catalog # 2767-MF)

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.
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 from date of receipt, 2 to 8 °C, reconstituted. ● 6 months from date of receipt, -20 to -70 °C, reconstituted.

BACKGROUND

Human MFG-E8 (milk fat globule-EGF factor 8; also lactadherin, breast epithelial antigen BA46, and medin) is a 46 kDa, secreted, monomeric glycoprotein that is associated with the human milk fat globule (HMFG) membrane (1 - 3). It is expressed by mammary epithelial cell surfaces, artery media, and in several carcinomas (1 - 4). Human MGF-E8 is synthesized as a 387 amino acid (aa) precursor that contains a 23 aa signal sequence and a 364 aa mature region (SwissProt # Q08431). The mature molecule contains four N-linked glycosylation sites, an amino-terminal EGF-like domain, plus C1 and C2 Ig-like domains which are related to discoidin I and homologous to those of human coagulation factors V and VIII (2, 3). Within the EGF-like domain is an Arg-Gly-Asp (RGD) sequence, which is strategically placed in a hairpin loop between two antiparallel beta strands (2, 3). In this way, the EGF-like domain serves as a scaffold for the RGD sequence, which is proposed to promote cell adhesion by binding cell-surface integrin receptors, such as $\alpha_V\beta_3$ (2, 3). Human MFG-E8 shares 59%, 58%, 56%, and 52% aa sequence identity with porcine, bovine, rat, and mouse MFG-E8, respectively. Functionally, MFG-E8 in milk is reported to block rotavirus infection (5). MFG-E8 expression by macrophages promotes the phagocytosis of apoptotic thymocytes by forming a bridge between phosphatidylserine on apoptotic cells, and $\alpha_V\beta_3$ integrin on phagocytes (4, 6). The MFG-E8 expression by macrophages controls the accumulation of apoptotic membrane fragments in atherosclerotic plaques and substantially limits lesion development (4).

References:

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2. Cuoto, J.R. *et al.* (1996) DNA Cell Biol. **15**:281.
3. Taylor, M.R. *et al.* (1997) DNA Cell Biol. **16**:861.
4. Ait-Oufella, H. *et al.* (2007) Circulation **115**:2168.
5. Newburg, D.S. *et al.* (1998) Lancet **351**:1160.
6. Hanayama, R. *et al.* (2002) Nature **417**:182.