

**DESCRIPTION**

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human MFG-E8 in direct ELISAs and Western blots.
<b>Source</b>	Polyclonal Sheep IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived human MFG-E8 Leu24-Cys387 Accession # Q08431
<b>Formulation</b>	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.

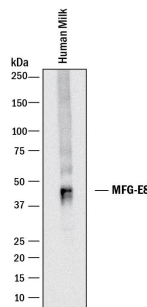
**APPLICATIONS**

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	1 µg/mL	See Below
<b>Simple Western</b>	50 µg/mL	See Below

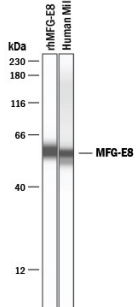
**DATA**

**Western Blot**




**Detection of Human MFG-E8 by Western Blot.** Western blot shows human milk. PVDF membrane was probed with 1 µg/mL of Sheep Anti-Human MFG-E8 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2767) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for MFG-E8 at approximately 45 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

**Simple Western**



**Detection of Human MFG-E8 by Simple Western™.** Simple Western lane view shows recombinant human (rh) MFG-E8 and human milk, loaded at 0.2 mg/mL. A specific band was detected for MFG-E8 at approximately 56-58 kDa (as indicated) using 50 µg/mL of Sheep Anti-Human MFG-E8 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2767) followed by 1:50 dilution of HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.



**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Sterile PBS to a final concentration of 0.2 mg/mL.
<b>Shipping</b>	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
<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**

Milk Fat Globulin Protein E8 (MFG-E8), also known as Lactadherin, MP47, breast epithelial antigen BA46, and SED1, is a pleiotropic secreted glycoprotein that promotes mammary gland morphogenesis, angiogenesis, and tumor progression. MFG-E8 also plays an important role in tissue homeostasis and the prevention of inflammation (1). Human MFG-E8 contains one N-terminal EGF-like domain and two C-terminal F5/8-type discoidin-like domains (2). It shares 63% and 61% aa sequence identity with comparable regions of mouse and rat MFG-E8, respectively. Shorter isoforms of human MFG-E8 may have N-terminal deletions (beginning near the end of the first discoidin-like domain), internal deletions (lacking either the EGF-like domain or the central region of the second discoidin-like domain), or C-terminal deletions (truncated within the second discoidin-like domain) (3). A 50 aa internal proteolytic fragment of human MFG-E8 (known as Medin) is a major component of aortic medial amyloid deposits (4). MFG-E8 is released into the milk in complex with lipid-containing milk fat globules. It is also found in multiple other cell types including endothelial cells and smooth muscle cells of the vasculature, immature dendritic cells, at the acrosomal cap of testicular and epididymal sperm, and in epithelial cells of the endometrium (1). MFG-E8 binds to the Integrins  $\alpha V\beta 3$  and  $\alpha V\beta 5$  and potentiates the angiogenic action of VEGF through VEGF R2 (5, 6). It reduces inflammation and tissue damage in a variety of settings. MFG-E8 functions as a bridge between phosphatidylserine on apoptotic cells and Integrin  $\alpha V\beta 3$  on phagocytes, leading to the clearance of apoptotic debris (7). It mediates the engulfment of apoptotic bodies in atherosclerotic plaques and prion-infected brain (8, 9) and of apoptotic B cells during germinal center reactions (10, 11). MFG-E8 also promotes the removal of excess Collagen in fibrotic lungs and the regeneration of damaged intestinal epithelia (12, 13). Its tissue-protective role impairs anti-tumor immunity and chemotherapy-induced apoptosis (14). MFG-E8 in the breastmilk blocks rotavirus infection in nursing babies (15).

**References:**

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