SANTA CRUZ BIOTECHNOLOGY, INC.

MFG-E8 (2B62): sc-71573

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Human milk-fat globule (MFG) is abundant in human breast milk and is composed of secreted lipids encapsulated by plasma membranes from the epithelial cells of mammary glands. MFG membranes are composed of various glycoproteins that serve as markers for differentiated carcinomas. MFG-E8 (milk fat globule-EGF factor 8), also known as lactadherin or BA46, is a 387 amino acid peripheral membrane protein that localizes to the membrane of a variety of tissues, including mammary epithelial surfaces, and contains one EGF-like domain and two F5/8 type C domains. Functioning as a specific ligand for Integrin β5 and Integrin β3, MFG-E8 is thought to be involved in gamete interactions and cell attachment, possibly playing a role in fertilization and apoptosis. Additionally, MFG-E8 binds to rotavirus and inhibits its replication, thereby protecting the cell from viral infection. Overexpression of MFG-E8 is associated with breast cancer, suggesting that MFG-E8 may be related to tumorigenesis.

REFERENCES

1. Newburg, D.S., et al. 1998. Role of human milk lactadherin in protection against symptomatic rotavirus infection. Lancet 351: 1160-1164.
2. Peterson, J.A., et al. 1998. Milk fat globule glycoproteins in human milk and in gastric aspirates of mother's milk-fed preterm infants. Pediatr. Res. 44: 499-506.
3. Oshima, K., et al. 2002. Secretion of a peripheral membrane protein, MFG-E8, as a complex with membrane vesicles. Eur. J. Biochem. 269: 1209-1218.
4. Hanayama, R., et al. 2002. Identification of a factor that links apoptotic cells to phagocytes. Nature 417: 182-187.
5. Ait-Oufella, H., et al. 2007. Lactadherin deficiency leads to apoptotic cell accumulation and accelerated atherosclerosis in mice. Circulation 115: 2168-2177.
6. Yamaguchi, H., et al. 2008. Milk fat globule EGF factor 8 in the serum of human patients of systemic lupus erythematosus. J. Leukoc. Biol. 83: 1300-1307.
7. Shi, J., et al. 2008. Lactadherin blocks thrombosis and hemostasis *in vivo:* correlation with platelet phosphatidylserine exposure. J. Thromb. Haemost. 6: 1167-1174.
8. Okuyama, T., et al. 2008. p63(TP63) elicits strong *trans*-activation of the MFG-E8/lactadherin/BA46 gene through interactions between the TA and ΔN isoforms. Oncogene 27: 308-317.

CHROMOSOMAL LOCATION

Genetic locus: MFGE8 (human) mapping to 15q26.1.

SOURCE

MFG-E8 (2B62) is a mouse monoclonal antibody raised against milk fat globule membrane tissue/cell preparation of human origin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MFG-E8 (2B62) is recommended for detection of MFG-E8 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MFG-E8 siRNA (h): sc-43158, MFG-E8 shRNA Plasmid (h): sc-43158-SH and MFG-E8 shRNA (h) Lentiviral Particles: sc-43158-V.

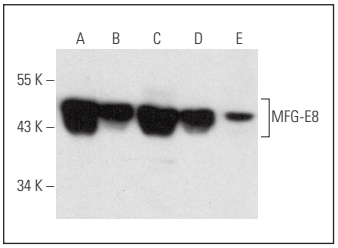
Molecular Weight of MFG-E8: 46 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MIA PaCa-2 cell lysate: sc-2285 or MCF7 whole cell lysate: sc-2206.

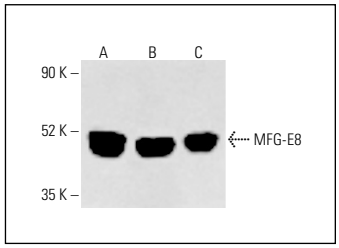
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MFG-E8 (2B62): sc-71573. Western blot analysis of MFG-E8 expression in MCF7 (**A**), MIA PaCa-2 (**B**), A549 (**C**), HeLa (**D**) and BT-20 (**E**) whole cell lysates.



MFG-E8 (2B62): sc-71573. Western blot analysis of MFG-E8 expression in HeLa (**A**), K-562 (**B**) and HCT-116 (**C**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.