MFG-E8 (MFG-06): sc-8029

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.

CHROMOSOMAL LOCATION

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

SOURCE

MFG-E8 (MFG-06) is a mouse monoclonal antibody raised against milk fat globule membrane tissue/cell preparation of human origin.

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.

MFG-E8 (MFG-06) is available conjugated to agarose (sc-8029 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-8029 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8029 PE), fluorescein (sc-8029 FITC), Alexa Fluor® 488 (sc-8029 AF488), Alexa Fluor® 546 (sc-8029 AF546), Alexa Fluor® 594 (sc-8029 AF594) or Alexa Fluor® 647 (sc-8029 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8029 AF680) or Alexa Fluor® 790 (sc-8029 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

MFG-E8 (MFG-06) 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.
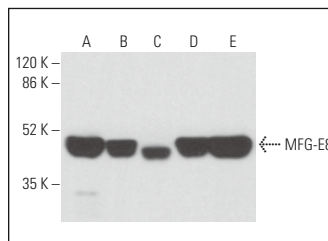
Molecular Weight of MFG-E8: 46 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, BT-20 cell lysate: sc-2223 or A-431 whole cell lysate: sc-2201.
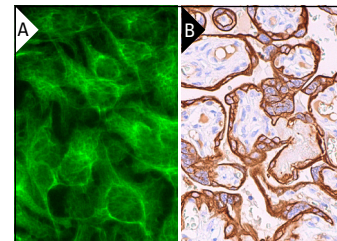
STORAGE

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

DATA

MFG-E8 (MFG-06): sc-8029. Western blot analysis of MFG-E8 expression in A549 (**A**), BT-20 (**B**), A-431 (**C**), HeLa (**D**) and MDA-MB-231 (**E**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

MFG-E8 (MFG-06): sc-8029. Immunofluorescence staining of formalin-fixed HeLa cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing membrane and cytoplasmic staining of trophoblast cells (**B**).

SELECT PRODUCT CITATIONS

1. Alfaro-Lira, S., et al. 2012. Malignant transformation of rat kidney induced by environmental substances and estrogen. Int. J. Environ. Res. Public Health 9: 1630-1648.

2. Yamazaki, M., et al. 2014. MFG-E8 expression for progression of oral squamous cell carcinoma and for self-clearance of apoptotic cells. Lab. Invest. 94: 1260-1272.

3. Lee, E.H., et al. 2016. Immunogenomics reveal molecular circuits of diclofenac induced liver injury in mice. Oncotarget 7: 14983-15017.

4. Zhou, Y., et al. 2018. Autocrine MFG-E8 signaling prevents developmental exhaustion of the adult neural stem cell pool. Cell Stem Cell 23: 444-452.e4.

5. Peterman, E., et al. 2019. The post-abscission midbody is an intracellular signaling organelle that regulates cell proliferation. Nat. Commun. 10: 3181.

6. Ko, D.S., et al. 2020. Milk fat globule-EGF factor 8 contributes to progression of hepatocellular carcinoma. Cancers 12: 403.

7. Geoffroy, K., et al. 2022. High levels of MFG-E8 confer a good prognosis in prostate and renal cancer patients. Cancers 14: 2790.

8. Ma, J., et al. 2023. hMSCs-derived exosome circCDK13 inhibits liver fibrosis by regulating the expression of MFG-E8 through miR-17-5p/KAT2B. Cell Biol. Toxicol. 39: 1-22.

9. Durán-Jara, E., et al. 2024. Lactadherin immunoblockade in small extracellular vesicles inhibits sEV-mediated increase of pro-metastatic capacities. Biol. Res. 57: 1.

RESEARCH USE

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