SANTA CRUZ BIOTECHNOLOGY, INC.

Ep-CAM (9C4): sc-21792

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The epithelial cell adhesion molecule Ep-CAM, which is also designated tumor-associated calcium signal transducer 1 and MK-1, is a monomeric membrane glycoprotein that is expressed in most normal human epithelium and carcinomas. The human Ep-CAM gene encodes a 314 amino acid protein that is expressed as two forms, a major form and a minor form, which are reduced upon treatment with the amino-glycosylation inhibitor tunicamycin. Ep-CAM is overexpressed in a variety of carcinomas and is, therefore, a potential target for the visualization and therapy of human solid tumors. Ep-CAM contains an extracellular domain containing two epidermal growth factor-like repeats, followed by a cysteine poor region, which is necessary for the adhesion properties of the molecule.

CHROMOSOMAL LOCATION

Genetic locus: EPCAM (human) mapping to 2p21.

SOURCE

Ep-CAM (9C4) is a mouse monoclonal antibody raised against DU4475 breast carcinoma cell line.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ep-CAM (9C4) is available conjugated to agarose (sc-21792 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-21792 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-21792 PE), fluorescein (sc-21792 FITC), Alexa Fluor® 488 (sc-21792 AF488), Alexa Fluor® 546 (sc-21792 AF546), Alexa Fluor® 594 (sc-21792 AF594) or Alexa Fluor® 647 (sc-21792 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-21792 AF680) or Alexa Fluor® 790 (sc-21792 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Ep-CAM (9C4) is recommended for detection of Ep-CAM of human origin by 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 flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for Ep-CAM siRNA (h): sc-43032, Ep-CAM shRNA Plasmid (h): sc-43032-SH and Ep-CAM shRNA (h) Lentiviral Particles: sc-43032-V.

Molecular Weight of Ep-CAM: 40 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, MCF7 whole cell lysate: sc-2206 or Hep G2 cell lysate: sc-2227.

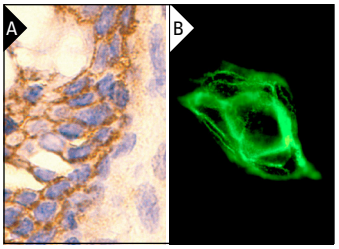
STORAGE

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

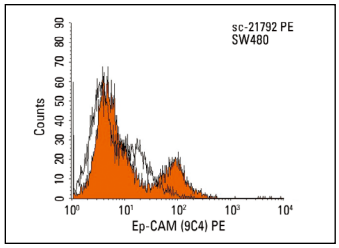
RESEARCH USE

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

DATA



Ep-CAM (9C4): sc-21792. Immunoperoxidase staining of formalin fixed, paraffin-embedded human normal colon tissue showing membrane localization (**A**). Immunofluorescence staining of methanol-fixed SW480 cells showing membrane localization (**B**).



Ep-CAM (9C4) PE: sc-21792 PE. FCM analysis of SW480 cells. Black line histogram represents the isotype control, normal mouse IgG_{2b}-PE: sc-2868.

SELECT PRODUCT CITATIONS

1. Sterzynska, K., et al. 2012. Analysis of the specificity and selectivity of anti-Ep-CAM antibodies in breast cancer cell lines. Folia Histochem. Cytobiol. 50: 534-541.
2. Peitzsch, C., et al. 2016. An epigenetic reprogramming strategy to resensitize radioresistant prostate cancer cells. Cancer Res. 76: 2637-2651.
3. Kahounová, Z., et al. 2018. The fibroblast surface markers FAP, anti-fibroblast, and FSP are expressed by cells of epithelial origin and may be altered during epithelial-to-mesenchymal transition. Cytometry A 93: 941-951.
4. Ali, N.S., et al. 2019. A preliminary study on treatment of human breast cancer xenografts with a cocktail of paclitaxel, doxorubicin, and ^{131}I-anti-epithelial cell adhesion molecule (9C4). World J. Nucl. Med. 18: 18-24.
5. Useckaite, Z., et al. 2020. Increased extracellular vesicles mediate inflammatory signalling in cystic fibrosis. Thorax 75: 449-458.
6. Deliorman, M., et al. 2020. AFM-compatible microfluidic platform for affinity-based capture and nanomechanical characterization of circulating tumor cells. Microsyst. Nanoeng. 6: 20.
7. Kim, J.H., et al. 2021. In-depth proteomic profiling captures subtype-specific features of craniopharyngiomas. Sci. Rep. 11: 21206.
8. Deliorman, M., et al. 2022. Characterizing circulating tumor cells using affinity-based microfluidic capture and AFM-based biomechanics. STAR Protoc. 3: 101433.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.