PRODUCT INFORMATION

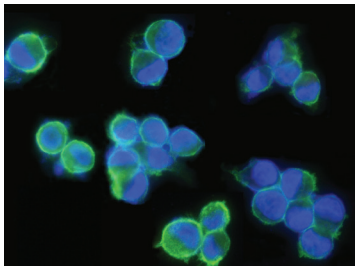
EpCAM Rabbit Monoclonal Antibody (Clone 28)

Item No. 38079

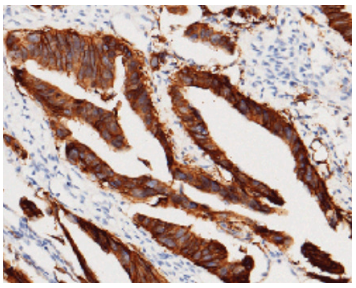
Overview and Properties

Contents:	This vial contains 50, 100 µl, or 1 ml of protein A-affinity purified monoclonal antibody.
Synonyms:	Adenocarcinoma-associated Antigen, CD326, EGP314, Epithelial Cell Adhesion Molecule, Epithelial Cell Surface Antigen, Epithelial Glycoprotein 314, TACSTD1, TROP1, Tumor-associated Calcium Signal Transducer 1
Immunogen:	Recombinant human EpCAM
Cross Reactivity:	(+) EpCAM; (-) CD146, CD171, OBCAM, TROP2
Species Reactivity:	(+) Human
Molecular Weight:	34 kDa
Form:	Liquid
Storage:	-80°C (as supplied)
Stability:	≥1 year
Storage Buffer:	0.2 µm filtered solution in PBS
Clone:	28
Host:	Rabbit
Isotype:	IgG
Applications:	ELISA, ELISA (detection), Flow cytometry (FC), Immunocytochemistry (ICC), Immunofluorescence (IF), Immunohistochemistry paraffin (IHC-P), Immunoprecipitation (IP), and Western blot (WB); the recommended starting dilution is 1:25,000-1:50,000 for ELISA, 1:5,000-1:50,000 for ELISA (detection), 1:100-1:500 for FC, 1:250-1:5,000 for ICC and IF, 1:1,000-1:5,000 for IHC-P, and 1:500-1:1,000 for WB. The recommended starting concentration is 0.2-1 µl/mg for IP. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

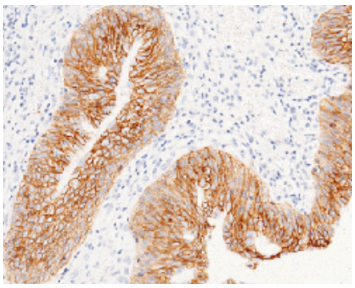
Images



Immunofluorescent staining of human EpCAM in SKBR3 cells. Cells were fixed with 4% paraformaldehyde, blocked with 10% serum, and incubated with EpCAM Rabbit Monoclonal Antibody (Clone 28) at a dilution of 1:500 at 4°C overnight. Cells were stained with the Alexa Fluor® 488-conjugated Goat Anti-Rabbit IgG Secondary Antibody (green) and counterstained with DAPI (blue). Positive staining was localized to the plasma membrane.



Immunohistochemical staining of human EpCAM in formalin-fixed and paraffin-embedded human colon carcinoma using EpCAM Rabbit Monoclonal Antibody (Clone 28) at a dilution of 1:2,500. Positive staining was localized to membrane of colonic gland epithelium.



Immunohistochemical staining of human EpCAM in formalin-fixed and paraffin-embedded human bladder carcinoma using EpCAM Rabbit Monoclonal Antibody (Clone 28) at a dilution of 1:2,500. Positive staining was localized to membrane of transitional epithelium.

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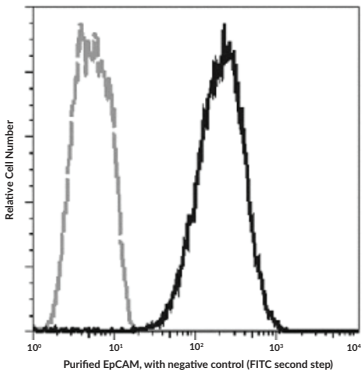
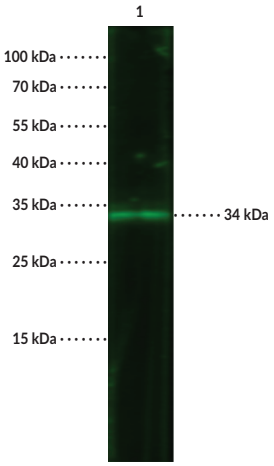
Images continued

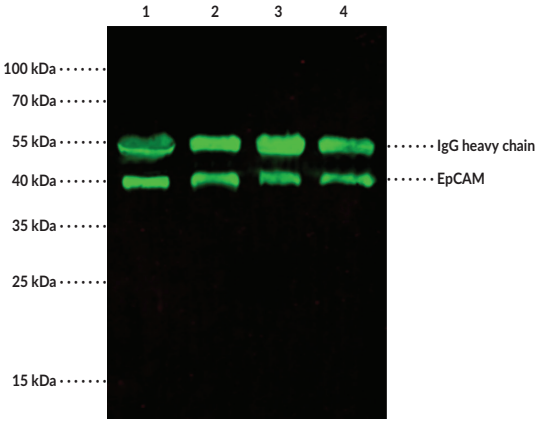


Flow cytometric analysis of EpCAM reactivity on SKRB3 cells. SKBR3 cells were stained with purified EpCAM Rabbit Monoclonal Antibody (Clone 28), followed by a FITC-conjugated second step antibody. The histograms were derived from gated events based on light scattering characteristics of viable cells.



Lane 1: MCF-7 lysate (30 µg)

WB using EpCAM Rabbit Monoclonal Antibody (Clone 28) at a 1:500 dilution.



Lane 1: MCF-7 IP eluate
Lane 2: A431 IP eluate
Lane 3: HepG2 IP eluate
Lane 4: Caco-2 IP eluate

WB using 0.5 µl of EpCAM Rabbit Monoclonal Antibody (Clone 28) and 15 µl of protein G agaraose for each 500 µg of four cell lysates.

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Description

Epithelial cell adhesion molecule (EpCAM) is a transmembrane glycoprotein.[1] It is composed of an extracellular domain (EpEX) that contains an N-domain, a thyroglobulin type-IA domain, and a C-domain, a transmembrane domain, and an intracellular domain (EpIC). EpEX undergoes proteolytic cleavage by disintegrin and metalloproteinase domain-containing protein 17 (ADAM17/TACE) to release soluble EpEX, and γ-secretase cleaves EpCAM at two sites to release a soluble extracellular amyloid-β-like fragment and EpIC. EpCAM is ubiquitously expressed in epithelial tissues but is also found in stem and progenitor cells and tight junctions.[2,3] It is involved in cell adhesion, transport, polarity, proliferation, and motility and signals through novel PKC (nPKC), Wnt, and embryonic RAS (ERAS)/Akt pathways.[2] Knockdown of *EPCAM* decreases proliferation, migration, and invasion of breast cancer cells *in vitro*.[4] *Epcam*$^{-/-}$ mice develop congenital tufting enteropathy (CTE), a disease characterized by hemorrhagic diarrhea, colon crypt hyperplasia, intestinal tufts, and villous atrophy.[5] Increased protein levels of EpCAM are frequently found in tumors from patients with diverse cancer types.[6] Cayman's EpCAM Rabbit Monoclonal Antibody (Clone 28) can be used for ELISA, ELISA (detection), flow cytometry (FC), immunocytochemistry (ICC), immunofluorescence (IF), immunohistochemistry paraffin (IHC-P), immunoprecipitation (IP), and Western blot (WB) applications. The antibody recognizes EpCAM at 34 kDa from human samples. However, due to glycosylation the antibody may recognize EpCAM at approximately 38-40 kDa.

References

1. Keller, L., Werner, S., and Pantel, K. Biology and clinical relevance of EpCAM. *Cell Stress* **3(6)**, 165-180 (2019).
2. Huang, L., Yang, Y., Yang, F., *et al.* Functions of EpCAM in physiological processes and diseases (Review). *Int. J. Mol. Med.* **42(4)**, 1771-1785 (2018).
3. Ladwein, M., Pape, U.F., Schmidt, D.-S., *et al.* The cell–cell adhesion molecule EpCAM interacts directly with the tight junction protein claudin-7. *Exp. Cell Res.* **309(2)**, 345-357 (2005).
4. Osta, W.A., Chen, Y., Mikhitarian, K., *et al.* EpCAM is overexpressed in breast cancer and is a potential target for breast cancer gene therapy. *Cancer Res.* **64(16)**, 5818-5824 (2004).
5. Guerra, E., Lattanzio, R., La Sorda, R., *et al. mTrop1/Epcam* knockout mice develop congenital tufting enteropathy through dysregulation of intestinal E-cadherin/β-catenin. *PLoS One* **7(11)**, e49302 (2012).
6. Went, P.T., Lugli, A., Meier, S., *et al.* Frequent EpCam protein expression in human carcinomas. *Hum. Pathol.* **35(1)**, 122-128 (2004).

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