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E-Cadherin/Cadherin-1 (MB2)

CATALOG NUMBER: MUB0300P
CLONE: MB2
SPECIES / ISOTYPE: mouse IgG2b
PRODUCT FORM: purified monoclonal antibldy

BACKGROUND

Cadherins constitute a family of transmembrane glycoproteins involved in Ca^{2+}-dependent cell-cell interactions. The members of this family are differentially expressed in various tissues. They function in the maintenance of tissue integrity and morphogenesis. Cadherins are divided into type I and type II subgroups. Type I cadherins include epithelial cadherin (E-cadherin, cadherin-1 or uvomorulin), neural cadherin (N-cadherin or cadherin-2), placental cadherin (P-cadherin or cadherin-3) and retinal cadherin (R-cadherin or cadherin-4), whereas kidney cadherin (K-cadherin or cadherin-6) and osteoblast cadherin (OB-cadherin or cadherin-11) are type II cadherins. One of the best characterized cadherins is E-cadherin, a 120 kD transmembrane glycoprotein consisting of an 80 kD extracellular and a 40 kD transmembrane and cytoplasmic part. The extracellular domains of E-cadherin are responsible for calcium binding which allows for homophilic interaction with other E-cadherin molecules on the same cell and neighbouring cells. In addition, E-cadherin can interact heterophilically with integrin $\alpha_E\beta_7$. The cytoplasmic domain of E-cadherin is linked to the actin cytoskeleton through the associated cytoplasmic catenin proteins, thus establishing a complex localized to adherens junctions. In carcinomas E-cadherin is frequently downregulated, which is consistent with its function of an invasion suppressor in normal epithelia.

SOURCE

MB2 is a mouse monoclonal IgG2b antibody derived by fusion of NS0 mouse myeloma cells with spleen cells from a BABL/c mouse immunized with MCF-7/AZ cells expressing E-cadherin at their cell surface.

PRODUCT

Each vial contains 100 µl 1 mg/ml purified monoclonal antibody in PBS containing 0.09% sodium azide.

SPECIFICITY

MB2 recognizes both the 120 kD E-cadherin and its 80 kD trypsin-resistant extracellular part. MB2 is a functional antibody in that it inhibits cell-cell adhesion.
MB2 is useful for flow cytometry, immunoblotting, immunocytochemistry on fixed cells (methanol fixation) and immunohistochemistry on frozen tissues when using a PBS buffer containing 0.1 mM $CaCl_2$ and 0.1 mM $MgCl_2$. Optimal antibody dilution should be determined by titration; recommended range is 1:100 – 1:200 for flow cytometry, and for immunohistochemistry with avidin-biotinylated horseradish peroxidase complex (ABC) as detection reagent, and 1:100 – 1:1000 for immunoblotting applications.

SPECIES REACTIVITY

Human.

STORAGE

Store at 4°C, or in small aliquots at –20°C.

REFERENCES

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2. Steelant, W. F., Goeman, J. L., Philippe, J., Oomen, L. C., Hilkens, J., Krzewinski-Recchi, M. A., Huet, G., Van der Eycken, J., Delannoy, P., Bruyneel, E. A., and Mareel, M. M. (2001). Alkyl-lysophospholipid 1-O-octadecyl-2-O-methyl- glycerophosphocholine induces invasion through episialin-mediated neutralization of E- cadherin in human mammary MCF-7 cells in vitro, Int J Cancer *92*, 527-36.
3. Rong, H., Boterberg, T., Maubach, J., Stove, C., Depypere, H., Van Slambrouck, S., Serreyn, R., De Keukeleire, D., Mareel, M., and Bracke, M. (2001). 8-Prenylnaringenin, the

phytoestrogen in hops and beer, upregulates the function of the E-cadherin/catenin complex in human mammary carcinoma cells, Eur J Cell Biol *80*, 580-5.

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