MONOCLONAL ANTIBODY TO HUMAN CD73, 5’-NUCLEOTIDASE
clone 4G4

Catalog no: HM2215 (lot number and expiry date are indicated on the label)

Description: The monoclonal antibody 4G4 recognizes both membrane bound and soluble human CD73, also known as ecto-5’-nucleotidase. CD73 is a 70-kDa GPI-anchored cell surface molecule and belongs to the 5’-nucleosidase family. CD73 is useful as marker for lymphocyte differentiation. It is abundantly expressed on the vascular endothelium and at a low level on certain subpopulations of human lymphocytes. Like many glycosyl-phosphatidylinositol (GPI)-anchored molecules, it transmits potent activation signals in T cells when ligated by antibodies. CD73 hydrolyzes extracellular nucleotides into membrane permeable nucleosides. Ecto-5’-nucleotidase activity is an important mediator of the anti-inflammatory effect by converting extracellular AMP into a potent anti-inflammatory substance adenosine. CD73 has been shown to function as a co-stimulatory molecule in human T cells and to have a role in regulating lymphocyte adhesion. Triggering of CD73 on the surface of lymphocytes, but not on endothelial cells, results in the shedding of the CD73 and increased adhesion of lymphocytes to endothelium via LFA-1 clustering. Furthermore, CD73 has been implicated to mediate homing of skin-infiltrating lymphocytes in vivo.

In B-cell chronic lymphocytic leukemia the expression of CD73 is decreased. Besides this, CD73 activity has been implicated as sensitive and useful indicator for mild zinc deficiency. The monoclonal antibody 4G4 causes a reduction in CD73 expression on lymphocytes, reduces enzyme activity, and inhibits the binding of lymphocytes to endothelial cells.

Aliases: Ecto-5’-nucleotidase, EC3.1.3.5

Immunogen: Inflamed synovial stroma from rheumatoid arthritis patients

Species: Mouse IgG1

Formulation: 1 ml (100 µg/ml) 0.2 µm filtered antibody solution in PBS, containing 0.1% bovine serum albumin.

Application:

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N.D. = Not Determined; F = Frozen sections; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IF = Immuno Fluorescence; IP = Immuno Precipitation; P = Paraffin sections; W = Western blot

Application notes:

F: Tissue sections were fixed in acetone. As positive control anti-CD31 was used and as negative control an isotype antibody (Ref.5).

FC: Antibody 4G4 stains the extracellular domain of CD73. As positive control anti-CD3 was used and as negative control an irrelevant antibody (Ref.1).

FS: Antibody 4G4 functions as an inhibitor of lymphocyte binding to HUVEC. The antibody was functionally tested by incubating the lymphocytes with the antibody before adding the lymphocytes to an EC monolayer (Ref.1). Furthermore the monoclonal antibody 4G4 causes a reduction in CD73 expression on lymphocytes (Ref.5) and reduces enzyme activity (Ref.2).

IF: HUVEC cells were seeded on gelatin-coated coverslips and stained with antibody (Ref.5).
Flow cytometric detection of human CD73 on Huvec (mAb 4G4, Cat.# HM2215). Black, red and blue line represents cells only, isotype control and 4G4 (4 µg/ml, respectively).

References

Use
For immunohistochemistry and flow cytometry, dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50. For functional studies, in vitro dilutions have to be optimized in user’s experimental setting.

Positive control
HUVEC and fresh lymphocytes

Negative control
COS cells (Ref. 2)

Storage and stability
Product should be stored at 4°C. Under recommended storage conditions, product is stable for at least one year. The exact expiry date is indicated on the label.

Precautions
For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.

Also available
HM2213 Monoclonal antibody against Human VAP-1, clone 174-5
HM2214 Monoclonal antibody against Human PLVAP (PV1: PAL-E: FELS), clone 174/2
HM4001 Monoclonal antibody against Human E-selectin (CD62E), clone ENA1
HM2039 Monoclonal antibody against Human PECAM-1 (CD31), clone BV8
HP9041 Polyclonal antibody against Human JAM-A