Monoclonal Antibody CD34

PN IM1869 – Purified – Freeze-dried – 0.2 mg – Clone 581

For Research Use Only. Not for use in diagnostic procedures.

SPECIFICITY

The CD34 glycoprotein is a transmembrane single chain molecule which molecular weight is about 110 kDa (1). The extracellular domain is heavily N- and O-glycosylated (2-5) and the cytoplasmic sequence reveals two sites for activated protein kinase C phosphorylation and one site for tyrosine phosphorylation (4). This antigen is a very early and reliable marker in human for hematopoietic progenitor cells (6, 7).

There are three classes of CD34 epitopes defined by differential sensitivity to enzymatic cleavage with glycoprotease from Pasteurella haemolytica and with neuraminidase (5). The 581 monoclonal antibody recognizes specifically a class III epitope, neuraminidase- and glycoprotease-resistant (8, 9).

The CD34 molecule is expressed on virtually all hematopoietic precursor cells (10), including the multipotent stem cells (11). The CD34 molecule is the earliest marker in human for precursors of colony forming cells in the bone marrow (6, 7).

Since CD34 is transiently expressed during hematopoiesis, the average of CD34 positive cells is very low in healthy donor hematologic specimens: CD34 antigen is expressed on 1% to 5% of bone marrow cells or cord blood cells (10), while in peripheral blood, only 0.1% to 0.5% of the cells are CD34 positive (12).

The CD34 glycoprotein is not restricted to hematopoietic progenitors. It has been detected on capillary endothelial cells (13, 14), and on bone marrow stromal cells and their precursors (15).

This 581 monoclonal antibody has been assigned to the CD34 cluster of differentiation at the 5th International Workshop on Human Leukocyte Differentiation Antigens in Boston, USA (1993) (8).

REAGENT

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Clone	581
Isotype	IgG1, mouse
Immunogen	Human $CD34^+$ leukemic cells
Hybridoma	NS0 x Balb/c spleen cells
Source	Ascites fluid
Purification	Ion exchange or affinity chromatography
Buffer	1 mg/mL bovine serum albumin in phosphate-buffered saline

APPLICATION

Flow cytometry.

STATEMENT OF WARNINGS

1. Specimens, samples and all material coming in contact with them should be handled as if capable of transmitting infection and disposed of with proper precautions.
2. Never pipet by mouth and avoid contact of samples with skin and mucous membranes.
3. Do not use antibody beyond the expiration date on the label.
4. Avoid microbial contamination of reagents or incorrect results might occur.
5. Use good laboratory practices when handling this reagent.

STORAGE CONDITIONS AND STABILITY

This freeze-dried form may be stored at 2 – 8°C until the expiration date stated on the vial label.

No preservative has been added.

REAGENT PREPARATION

Depending of usage, reconstitute with 1 mL of distilled water, with or without 0.1% sodium azide (w/v).

The reconstituted form including 0.1% sodium azide may be stored for up to one month at 2 – 8°C.

The reconstituted form without sodium azide can be stored at –20°C or less, until the expiration date stated on the vial label.

In this case, aliquotting is recommended to avoid multiple freezing / thawing cycles.

PROCEDURE

For each application, it is recommended to establish the right range of antibody dilutions to be used for the experiment.

SELECTED RESEARCH REFERENCES

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PRODUCT AVAILABILITY

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