IOTest® CD209 (DC-SIGN)-PE

PN A07407 – 100 tests – 20 µL / test – Clone AZND1

For Research Use Only. Not For Use In Diagnostic Procedures.

SPECIFICITY

1. Antigen Description
CD209, alias Dendritic Cell-Specific ICAM-3-Grabbing Non-integrin (DC-SIGN) (1) is a 44 kDa type II transmembrane, C-type lectin with 1 single carbohydrate recognition domain (CRD) (see Ref. 2 for a review). The sequencing of CD209 revealed that DC-SIGN is identical to the HIV-1 envelope glycoprotein (gp120) binding protein, described in 1992 (3). Highly specific of dendritic cells (DCs), CD209 plays a key role in the biology of DCs, as a receptor for the following ligands, associated to key functions in the biology of DCs, as a receptor for the dendritic cells (DCs), CD209 plays a key role described in 1992 (3). Highly specific of SIGN is identical to the HIV-1 envelope sequencing of CD209 revealed that DC-

2. Cell distribution of CD209
2.1 in vivo:

- immune DCs in peripheral tissues (1), except Langerhans cells and their Langerhans Cell Histiocytosis (LCH) counterpart (5).
- DCs in lymphoid tissues (1).
- decidural macrophages, Hofbauer cells in placenta (9), alveolar macrophages (10).
- DC2 or plasmacytoid DCs (BDCA-2/CD123+) in allergic nasal polyps (11).

2.2 ex vivo, on peripheral blood DCs:

- in one study using a polyclonal antibody to CD209, CD209 could not be detected on lineage (CD3, CD20, CD56)-negative and HLA-DR-positive cells (11). However, in the same study, CD209 was detected on a small fraction (4 – 14%) of BDCA-2-positive cells, whereas BDCA-3-positive cells were uniformly CD209-negative (11).
- in other studies (12, 13), CD209 was found positive on a fraction of cells obtained from PBMCs depleted with CD3, CD20 and CD56, prior to positive sorting with a monoclonal antibody (mAb) to CD209. This CD209-positive fraction consisted into 2 subsets, one CD14-positive, and the other, CD14-negative, the total CD209-positive fraction representing 0.02 – 0.04% PBMCs. These findings are consistent with those reported in Ref. 13, where RT-PCR experiments revealed that CD209 mRNA was detected in fresh or cultured lineage-negative / HLA-DR-

3. Antibody description
The mAb AZND1 has been assigned to the CD209 cluster of differentiation during the 7 th International Workshop on Human Leucocyte Differentiation Antigens in Harrogate, England, in 2000 (WS Code: 70875) (16). The generation of mAb AZND1 permitted the identification and characterization of CD209 from many standpoints:

3.1 flow cytometric analysis of CD209-expressing cells (1, 12, 14, 17 – 20);
3.2 immunohistochemical analysis of CD209-positive cells on frozen tissue sections (1, 12, 18);
3.3 immunoprecipitation of CD209 antigen (1);
3.4 cell-sorting of CD209-positive cells using Coulter® EPICS® Elite™ (17).

3.5 investigation of the functions of CD209, due to the functional properties of AZND1:

3.5.1 blocks CD209-ICAM-3 interaction (1, 12);
- inhibits DC-T clustering (1);
- inhibits the induction of T-cell proliferation by immature DC (18, 21).

3.5.2 blocks CD209-gp120 interaction:
- inhibits HIV-1 gp120 binding to DCs and CD209-transfectants (18).
- inhibits HIV transmission to responder T-cells (17).

3.5.3 blocks CD209-ICAM-2 interaction:
- inhibits the adhesion of CD209-positive cells to ICAM-2-positive surfaces, such as endothelium (12).

3.5.4 ligand (including AZND1) binding on DCs induces, at 37°C, the rapid internalization of CD209-ligand complexes routed to endosomal / lysosomal compartments, prior to processing and subsequent presentation to T-cells (21).

3.6 cross-reactivity of AZND1 on Macaque and Chimpanzee DCs (22):

3.6.1 detects a homologue in non-human primates;
3.6.2 demonstrates the functions of simian CD209 similar to those of human CD209, confirmed by other studies (23 – 26).

REAGENT

IOTest CD209 (DC-SIGN)-PE Conjugated Antications.
PN A07407 – 100 tests – 20 µL / test
Clone AZND1
Isotype IgG1, mouse
Immunogen Human monocyte-derived DCs
Hybridoma SP2/0 x Balb/c
Source Ascites fluid
Purification Ion exchange or affinity chromatography
Conjugation R-phycocerythrin (PE) is conjugated at 0.5 – 1.5 moles of PE per mole of Ig.
Excitation wavelength: 488 nm
Maximum emission wavelength: 575 nm
Main emission color: Orange-red
Buffer 2 mg/mL bovine serum albumin in phosphate-buffered saline containing 0.1% sodium azide.

APPLICATION

Flow Cytometry; Cell sorting.

STATEMENT OF WARNINGS

1. This reagent contains 0.1% sodium azide. Sodium azide under acid conditions yields hydrazic acid, an extremely toxic compound. Azide compounds should be flushed with running water while being discarded. These precautions are recommended to avoid deposits in metal piping in which explosive conditions can develop. If skin or eye contact occurs, wash excessively with water.

2. 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.

3. Never pipet by mouth and avoid contact with skin and mucous membranes.

4. Do not use antibody beyond the expiration date on the label.

5. Do not expose reagents to strong light during storage or incubation.
STORAGE CONDITIONS AND STABILITY

This reagent is stable up to the expiration date when stored at 2 – 8°C. Do not freeze.

REAGENT PREPARATION

No reconstitution is necessary. This monoclonal antibody may be used directly from the vial. Bring reagent to 18 – 25°C prior to use.

PROCEDURE

This reagent is designed for flow cytometry.

Assay volume: 20 µL per 5 x 10^5 cells in one test, or per 100 µL whole blood.

A wash is required to yield optimal results.

EXAMPLE DATA

Single parameter histogram of CD209-PE. It represents CD209 expression on DCs derived from monocytes cultured in GM-CSF + IL-4. Isotypic Control (PN IM0670) labeling is shown underneath in light. Acquisition is with a COULTER EPICS XL™ flow cytometer. Analysis is with the Beckman Coulter Expo32™ software.

SELECTED RESEARCH REFERENCES


PRODUCT AVAILABILITY

IOTest CD209 (DC-SIGN)-PE Conjugated Antibodies

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