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ProductInformation

Monoclonal Anti-DC-SIGN1/DC-SIGN2
Clone 120612
produced in mouse, purified immunoglobulin

Catalog Number **D2691**

Product Description

Monoclonal Anti-DC-SIGN1/DC-SIGN2, Clone 120612 (mouse IgG2A) is produced from a hybridoma resulting from the fusion of a mouse myeloma with B cells obtained from a Balb/c mouse immunized with NIH/3T3 transfectant stably expressing human DC-SIGN2 (DC-SIGNR) on the cell surface. The IgG fraction of the tissue culture supernatant is purified by Protein G affinity chromatography.

The antibody recognizes both human DC-SIGN1 (DC-SIGN, CD209) and human DC-SIGN2 (DC-SIGNR, CD299) on transfected NIH/3T3 cells by flow cytometry and immunohistochemistry. It also reacts with human dendritic cells. The antibody does not react with parental mouse cells or irrelevant transfectants.

Dendritic cells (DC) play a primary role in the immune system as antigen presenting cells. A key molecule, DC-SIGN (**d**endritic **c**ell-**s**pecific **I**CAM-3-**g**rabbing **n**onintegrin), also known as DC-SIGN1 and CD209, is involved in regulating interactions between DC and resting T cells, including antigen presentation to T cells and enhancement of transinfection of $CD4^+$ T cells by HIV-1.[1, 2] Efforts to identify additional type II membrane proteins resulted in the isolation of a molecule related in sequence to DC-SIGN named DC-SIGNR (DC-SIGN Related), also known as DC-SIGN2, CD299, and L-SIGN (liver/lymph node-specific ICAM-3-grabbing nonintegrin).[3, 4]

DC-SIGN2 (DC-SIGNR), located on human chromosome 19p13.3, shares 73-80% amino acid identity with DC-SIGN1.[4, 5] Its structure is similar to DC-SIGN1 and therefore binds mannose residues in a calcium dependent fashion, including ICAM-3 and HIV-1 gp120.[4, 5] DC-SIGN2 is polymorphic, since allelic variations of the exon 4 encoded sequence have been isolated.[5] This is further supported by a study demonstrating the ability to isolate a large repertoire of DC-SIGN2 transcripts largely the result of alternative splicing of the 7 coding exons.[6]

DC-SIGN2 is primarily transcribed in the liver and lymph nodes but not in monocyte-derived DC.[5] Expression of DC-SIGN2 is restricted to endothelial cells derived from liver sinusoids, lymph nodes sinuses, and capillaries,[7] although variable expression in placenta and some monocytic cell lines has also been reported, including both membrane and soluble isoforms of the protein.[6]

Expression of DC-SIGN1 (DC-SIGN, CS209) is induced during the *in vitro* generation of DC from either monocytes or bone marrow progenitors, with maximal surface expression at day 7 of culture.[1] Immature DC in the skin and mature DC in the tonsil have been demonstrated to express DC-SIGN1.[8] Analysis of various tissues and cell lines suggests that DC-SIGN1 expression is restricted to DC,[1] although there is evidence of expression in placenta, resting monocytes, and monocytic cell lines.[6] This discrepancy may be partially related to the multiple isoforms of DC-SIGN1 transcripts, including both membrane and soluble forms, as well as exon splice variants.[6]

Reagent

Supplied as ~500 µg of antiserum lyophilized from a 0.2 µm filtered solution of phosphate buffered saline with 5% trehalose.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

To one vial of lyophilized powder, add 1 mL of sterile phosphate buffered saline to produce a 0.5 mg/mL stock solution of antibody.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at –20 °C. Avoid repeated freezing and thawing. Do not store in frost-free freezer.

Product Profile

For flow cytometry (immunophenotyping), 10 μL of a 25-50 μg/mL stock solution of the monoclonal antibody is mixed with up to 1 million cells in a minimal volume (≤ 0.2 mL) of buffer (PBS + 0.5% BSA). The reaction is incubated at room temperature for 30 minutes. The cells are washed two times with the same buffer as above by centrifugation at 250 x *g* for 5 minutes. The cell pellet is resuspended in 0.2 mL of the PBS buffer and 10 μL of a 25 μg/mL of secondary reagent, goat anti-mouse IgG-fluorescein or goat anti-mouse IgG-phycoerythrin, is added to the reaction. The cells are incubated for an additional 30 minutes at room temperature and then washed two times as indicated above. The cells are then suspended in 0.5 mL of the same PBS buffer for flow cytometric analysis.

Immunohistochemistry: a working concentration of 8-25 ug/mL is recommended to detect human DC-SIGN1 (DC-SIGN) and DC-SIGN2 (DC-SIGNR) in cells or or in fixed tissue sections.

Note: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working dilutions by titration.

Endotoxin level is < 0.1 EU (endotoxin units) per 1 μg of antibody as determined by the LAL (*Limulus* amebocyte lysate) method.

References

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KAA,PHC 09/06-1