Human CLEC9a
Alexa Fluor® 700-conjugated Antibody

Monoclonal Mouse IgG_1 Clone # 683409

Catalog Number: FAB6049N

100 TESTS

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human CLEC9a in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human (rh) CLEC1, 2, 2A, 3B, 10A, 12B, 14A, rhCD302/CLEC13a, rhMICL, or recombinant mouse CLEC9a is observed.
Source	Monoclonal Mouse IgG_1 Clone # 683409
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human CLEC9a Lys57-Val241 Accession # Q6UXN8
Conjugate	Alexa Fluor 700 Excitation Wavelength: 675-700 nm Emission Wavelength: 723 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

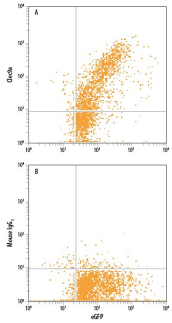
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Flow Cytometry	5 µL/10^6 cells	See Below

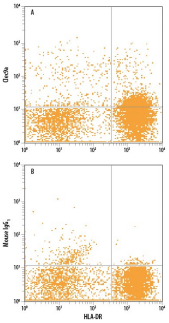
DATA

Flow Cytometry



Detection of CLEC9a in HEK293 Human Cell Line Transfected with Human Clec9a and eGFP by Flow Cytometry. HEK293 human embryonic kidney cell line transfected with human Clec9a and eGFP was stained with either (A) Mouse Anti-Human CLEC9a Alexa Fluor® 700-conjugated Monoclonal Antibody (Catalog # FAB6049N) or (B) Mouse IgG_1 Alexa Fluor 700 Isotype Control (Catalog # IC002N). View our protocol for Staining Membrane-associated Proteins.

Flow Cytometry



Detection of CLEC9a in Human Peripheral Blood Cells by Flow Cytometry. Human peripheral blood cells gated on $CD3^-CD141^+$ cells were stained with Mouse Anti-Human HLA-DR PE-conjugated Monoclonal Antibody (Catalog # FAB4869P) and either (A) Mouse Anti-Human CLEC9a Alexa Fluor® 700-conjugated Monoclonal Antibody (Catalog # FAB6049N) or (B) Mouse IgG_1 Alexa Fluor 700 Isotype Control (Catalog # IC002N). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Protect from light. Do not freeze.** ● 12 months from date of receipt, 2 to 8 °C as supplied.

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BACKGROUND

CLEC9a (C-type lectin domain family 9 member A), also known as DNGR-1, is a type II transmembrane glycoprotein member of the C−type lectin superfamily (1, 2). Mature human CLEC9a consists of a 35 amino acid (aa) cytoplasmic domain with an ITAM-like motif, a 21 aa transmembrane segment, and a 185 extracellular domain (ECD) that contains a stalk region and one C-type lectin domain (CTLD) (3−5). Within the ECD, human CLEC9a shares 57% aa sequence identity with mouse and rat CLEC9a. Although the CTLD of CLEC9a structurally resembles that of other C-type lectins, it lacks the conserved residues that typically mediate calcium and carbohydrate binding. CLEC9a is expressed as a disulfide-linked homodimer of approximately 50 kDa N-glycosylated subunits (3, 5). Human CLEC9a expression is restricted to a subpopulation of BDCA-3^+ conventional dendritic cells (cDC) and $CD16^-$ monocytes (3−5). BDCA-3^+ cDC are analagous to mouse $CD8^+$ cDC which are specialized in antigenic cross-presentation in complex with MHC class I molecules (6). In mouse, CLEC9a is additionally expressed on plasmacytoid dendritic cells (4, 5). CLEC9a ligation enhances antigen uptake and processing, leading to presentation on MHC class I and cytotoxic T cell (CTL) priming (3−5). In mouse, CLEC9a recognizes normally intracellular determinant(s) of necrotic cells and mediates their uptake by the dendritic cell (7). The subsequent antigenic cross-presentation to CTL is important for clearing necrotic cellular debris (7). CLEC9a signaling triggers activation of the tyrosine kinase Syk (3, 7).

References:

1. Huysamen, C. and G.D. Brown (2009) FEMS Microbiol. Lett. **290**:121.
2. Geijtenbeek, T.B.H. *et al.* (2004) Annu. Rev. Immunol. **22**:33.
3. Huysamen, C. *et al.* (2008) J. Biol. Chem. **283**:16693.
4. Caminschi, I. *et al.* (2008) Blood **112**:3264.
5. Sancho, D. *et al.* (2008) J. Clin. Invest. **118**:2098.
6. Dudziak, D. *et al.* (2007) Science **315**:107.
7. Sancho, D. *et al.* (2009) Nature **458**:899.

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