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iF700 Anti-Human CD1c Antibody

Catalog Number:	120105, 120106
Size:	25 tests, 100 tests
Target Name:	CD1C, M241, BDCA-1, R7
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	L161
Application:	Flow Cytometry
Reactivity:	Human
Format:	iF700
Isotype:	mouse IgG1
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA
Protein Concentration:	Supplied at a lot-specific concentration.
Storage&Handling:	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Recommended Usage:	For flow cytometric staining, it is recommended to use 5 µL of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application. iF700 has an excitation max at 690 nm and an emission max at 710 nm.
Excitation Laser:	Red Laser (633 nm)
Isotype Controls:	301433
Antibody Family:	Human Antibodies
Storage & Handling:	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Isotype Control:	301433

BACKGROUND INFORMATION

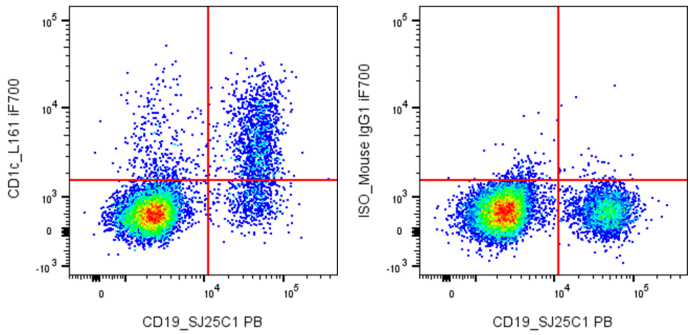
Human CD1c, also known as BDCA-1 or CD1c antigen, is a member of the CD1 family of major histocompatibility complex (MHC) class I-like molecules that specializes in presenting lipid and glycolipid antigens to T cells. CD1c is expressed primarily on conventional dendritic cells (cDC2), B cells, monocytes, and some thymocytes. Unlike classical MHC molecules that present peptide antigens, CD1c binds lipid-based molecules derived from microbes or host tissues, thereby bridging innate and adaptive immunity. CD1c plays an important role in initiating immune responses against bacterial pathogens, particularly mycobacteria, and

contributes to immune surveillance and the maintenance of self-tolerance.

Structurally, CD1c is a type I transmembrane glycoprotein composed of three extracellular α domains (α1, α2, and α3) that associate non-covalently with β2-microglobulin. The α1 and α2 domains form a deep hydrophobic antigen-binding groove that accommodates amphipathic lipid molecules, with their hydrophobic tails buried within the groove and polar head groups exposed for recognition by T-cell receptors. CD1c traffics through endosomal compartments where lipid loading and exchange occur before the molecule is transported to the cell surface. Known ligands include mycobacterial lipids such as phosphomycoketides and mannosyl phosphomycoketides, lipopeptides, phospholipids, sulfatides, and several endogenous self-lipids.

Altered CD1c expression and function have been associated with infectious diseases, autoimmune disorders, inflammatory conditions, and cancer. Defects in CD1c-mediated antigen presentation may impair antimicrobial immunity, whereas inappropriate presentation of self-lipids may contribute to autoimmune responses. In oncology, CD1c-positive dendritic cells are associated with enhanced antitumor immune responses and improved prognosis in several solid tumors. Therapeutically, CD1c is being investigated as a target for dendritic cell-based vaccines, lipid antigen immunotherapy, and strategies to enhance antigen presentation. In addition, monoclonal antibodies against CD1c are widely used to identify and isolate dendritic cell subsets for immunological research and the development of personalized cancer immunotherapies.

PRODUCT DATA



Human peripheral blood mononuclear cells were stained with PB Anti-Human CD19 clone SJ25C1 and iF700 Anti-Human CD1c clone L161 (left) or an isotype control (right).

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