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InnoCyto Inc.

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PE Anti-Mouse CD31 Antibody

Catalog Number:	205303, 205304
Size:	25 µg, 100 µg
Target Name:	CD31, PECAM-1, EndoCAM
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	m031BB
Application:	Flow Cytometry
Reactivity:	Mouse
Format:	PE
Isotype:	Rabbit IgG
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA
Protein Concentration:	0.2 mg/mL
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 less than 0.25 µg 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. PE has an excitation max at 565 nm and an emission max at 575 nm.
Excitation Laser:	Blue Laser (488 nm) Green/Yellow laser (532/561nm)
Isotype Controls:	303312
Antibody Family:	Mouse 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:	303312

BACKGROUND INFORMATION

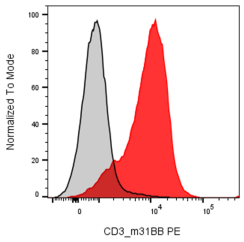
Mouse CD31, also known as platelet endothelial cell adhesion molecule-1 (PECAM-1), is a cell-surface glycoprotein encoded by the Pecam1 gene. It belongs to the immunoglobulin superfamily and plays important roles in vascular biology, leukocyte trafficking, and immune regulation. CD31 is highly expressed on endothelial cells and is also found on platelets and several leukocyte populations, including monocytes, neutrophils, and certain lymphocyte subsets. It contributes to maintaining vascular integrity, regulating cell adhesion, and facilitating the movement of immune cells across blood vessel walls during inflammation.

CD31 is a type I transmembrane protein consisting of six extracellular immunoglobulin-like domains, a single transmembrane segment, and a cytoplasmic tail containing signaling motifs. Its extracellular region mediates homophilic interactions between CD31 molecules on adjacent cells, particularly at endothelial cell junctions. CD31 can also participate in heterophilic interactions with other cell-surface molecules, including CD38 and integrin-associated proteins, depending on the cellular context. Its intracellular domain contains immunoreceptor tyrosine-based inhibitory motifs (ITIMs), which recruit signaling molecules such as SHP-1 and SHP-2 and regulate cellular activation.

CD31 is involved in inflammatory diseases, vascular injury, and tumor biology. During inflammation, it facilitates leukocyte transmigration across the vascular endothelium and helps regulate immune-cell responses. Altered CD31 expression or signaling has been associated with atherosclerosis, ischemia-reperfusion injury, and vascular dysfunction. In cancer, CD31 is widely used as a marker of endothelial cells and tumor angiogenesis, making it valuable for evaluating tumor blood-vessel density.

Therapeutically, CD31 is being investigated as a target for modulating leukocyte recruitment, vascular inflammation, and endothelial barrier function. Antibodies and other approaches that influence CD31 signaling may help regulate inflammatory responses and vascular injury. In cancer research, CD31-targeted staining and imaging are widely used to assess tumor angiogenesis and evaluate anti-angiogenic therapies.

PRODUCT DATA



C57BL/6 Mouse splenocytes were stained with PE Anti-Mouse CD31 clone m31BB (color-filled histogram) or an isotype control (gray histogram).

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