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Human CD34 Antibody

Purified No Carrier Protein

Monoclonal Antibody

Product Information

Product No.:	C943
Clone:	HB-34a
Isotype:	Mouse IgG1 κ
Storage:	Sterile 2 to 8°C

Product Description

Specificity:
HB-34a activity is directed against human CD34.

Antigen Distribution:
CD34 is a general marker of progenitor cells. CD34 is expressed on hematopoietic stem and progenitor cells as well as nonhematopoietic cell types including vascular endothelial progenitors, fibrocytes, mesenchymal stromal cells, interstitial cells, epithelial progenitors, muscle satellite cells, corneal keratocytes, vascular endothelial progenitors, mucosal dendritic cells, mast cells, and eosinophils.

Background:
CD34 is a transmembrane phosphoglycoprotein that contains a heavily sialylated extracellular domain, O- and N-linked glycosylation sites, a single transmembrane helix, and a cytoplasmic tail that contains PDZ-domain binding motifs [1]. CD34 interacts with L-selectin (CD62L), CrkL [1], and integrin [2] and also exerts a synergistic effect with inflammatory cytokines and chemokines [2]. CD34 functions in cell adhesion, regulation of cell differentiation and proliferation, trafficking of hematopoietic stem cells to niches within the bone marrow [1], adult angiogenesis [3], inflammatory cell chemotaxis, and enhancement of the inflammatory response [2]. Additionally, CD34 is involved in cell migration, via the recruitment of lymphocytes to specialized high endothelial venules that line the secondary lymphoid organs, as well as T cell homing to these lymphoid organs [4].

CD34 is routinely used in clinical settings to identify and isolate hematopoietic stem and progenitor cells for bone marrow transplants to ensure rapid engraftment [1], for example during hematopoietic reconstitution after myeloablative therapy in cancer patients [4]. CD34+ autologous stem cells are also used as a novel therapeutic for ischemia with non-obstructive coronary arteries with coronary microvascular dysfunction [3]. Clinical trials have investigated the use of CD34+ stem cell therapy in peripheral ischemia, nonischemic cardiomyopathy, myocardial infarction, ischemic stroke, and refractory angina. Additionally, CD34 expression is abnormally high in the intestine of inflammatory bowel disease (IBD) patients and is involved in the occurrence and development of IBD via its interactions with adhesion molecules as well as playing a role in the migration of immune cells to the inflammatory site [2].

Known Reactivity Species:
Human

Format:
Purified No Carrier Protein

Immunogen:
Human endothelial vesicles

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Formulation
This monoclonal antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added.

Purity
≥90% monomer by analytical SEC and SDS-Page

Storage and Stability
This antibody may be stored sterile as received at 2° to 8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at -70°C.
Avoid Repeated Freeze Thaw Cycles.

Other Applications Reported in Literature:
IHC
IF
FC
WB
ELISA

Country of Origin
USA

References
1) Sidney LE, Branch MJ, Dunphy SE, et al. Stem Cells. 32(6):1380-1389. 2014.
2) Li Z, Dong S, Huang S, et al. Front Physiol. 14:1144980. 2023.
3) Rai B, Shukla J, Henry TD, et al. Cells. 10(5):1137. 2021.
4) AbuSamra DB, Aleisa FA, Al-Amoodi AS, et al. Blood Adv. 1(27):2799-2816. 2017.