

Technical Data Sheet

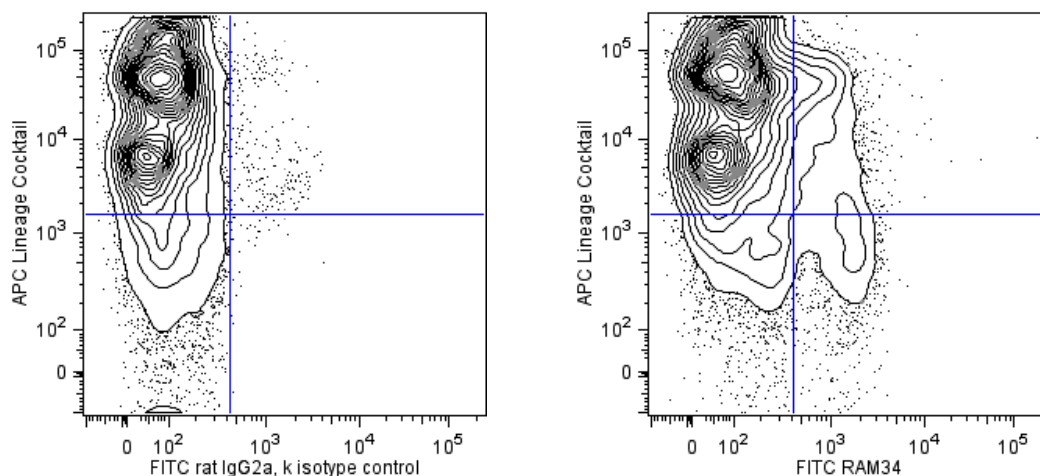
FITC Rat anti-Mouse CD34

Product Information

Material Number:	560238
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	RAM34
Immunogen:	Recombinant Mouse CD34
Isotype:	Rat IgG2a, κ
Reactivity:	QC Testing: mouse
Storage Buffer:	Aqueous buffered solution containing $\leq 0.09\%$ sodium azide.

Description

The RAM34 antibody reacts with the CD34 glycoprotein on the surface of three independently derived mouse CD34-transfected cell lines. RAM34 antibody also reacts with the mouse cell lines PA6, 416B, Swiss 3T6, NIH, 3T3, DA1, and M1, all of which are positive for expression of mouse CD34 mRNA. Cell lines shown to be negative for CD34 transcript, including WEHI-3B, EL4, 18.8, and CMT64/61, are also negative for surface expression of CD34 as determined by RAM34 staining. Normal thymocytes and splenocytes are negative for CD34 expression. In the bone marrow, 7-10% of cells are stained with RAM34 mAb, including most of the Ly-6A/E (Sca-1)+ CD90 (Thy-1)low Lineage Marker- hematopoietic stem cell-enriched subpopulation and myeloerythroid progenitors. CD34 is also expressed on a small percentage of fetal liver cells, including NK-cell progenitors. CD34 has been reported to be expressed on the endothelium of capillaries and, in this form, to function as a ligand for L-selectin. Consistent with this observation, RAM34 antibody stains endothelial cells in spleen, thymus, and postcapillary HEVs in the lymph nodes. It is reported that RAM34 antibody can be used to select CD34+ CD117 (c-Kit)+ Ly-6A/E (Sca-1)+ Lineage Marker- bone marrow-derived hematopoietic stem cells, capable of short-term multi-lineage reconstitution of lethally irradiated mice; while the CD34- CD117+ Sca-1+ Lineage Marker- population contains self-renewing hematopoietic stem cells. Similarly, the bone marrow population with high dye-efflux capacity and which is highly enriched for long-term reconstituting hematopoietic stem cells is CD34- CD117 (c-Kit)+ Ly-6A/E (Sca-1)+ Lineage Marker-.



Identification of CD34+ and CD34- subpopulations of hematopoietic progenitors. BALB/c bone marrow cells were treated with Mouse BD Fc Block™ purified anti-CD16/CD32 mAb 2.4G2 (Cat. No. 553141/553142) and stained with either FITC-conjugated anti-mouse CD34 (Clone RAM34, right panel) or a FITC-conjugated rat IgG2a, κ isotype control (clone R35-95, Cat. No. 553929, left panel), followed by staining with an APC Lineage Cocktail (Cat. No. 558074) to identify major lineage committed cells. The contour plots were derived from the gated events based on light scattering characteristics of leukocytes and fluorescence characteristics of the CD34 and Lineage markers. Flow cytometry was performed on a BD FACSCanto™ System.

BD Biosciences

bdbiosciences.com

United States	Canada	Europe	Japan	Asia Pacific	Latin America/Caribbean
877.232.8995	888.268.5430	32.53.720.550	0120.8555.90	65.6861.0633	0800.771.7157

For country-specific contact information, visit bdbiosciences.com/how_to_order/

Conditions: The information disclosed herein is not to be construed as a recommendation to use the above product in violation of any patents. BD Biosciences will not be held responsible for patent infringement or other violations that may occur with the use of our products. Purchase does not include or carry any right to resell or transfer this product either as a stand-alone product or as a component of another product. Any use of this product other than the permitted use without the express written authorization of Becton Dickinson and Company is strictly prohibited.

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Not for resale.

BD, BD Logo and all other trademarks are the property of Becton, Dickinson and Company. ©2011 BD



Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with FITC under optimum conditions, and unreacted FITC was removed.

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Flow cytometry	Routinely Tested
----------------	------------------

Suggested Companion Products

Catalog Number	Name	Size	Clone
553929	FITC Rat IgG2a, κ Isotype Control	0.25 mg	R35-95
553142	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.5 mg	2.4G2
558074	APC Mouse Lineage Antibody Cocktail, with Isotype Control	100 tests	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
3. For fluorochrome spectra and suitable instrument settings, please refer to our Fluorochrome Web Page at www.bdbiosciences.com/colors.
4. Please refer to www.bdbiosciences.com/pharming/protocols for technical protocols.

References

Akashi K, Traver D, Miyamoto T, Weissman IL. A clonogenic common myeloid progenitor that gives rise to all myeloid lineages. *Nature*. 2000; 404(6774):193-197. (Biology)

Baumhater S, Singer MS, Henzel W, et al. Binding of L-selectin to the vascular sialomucin CD34. *Science*. 1993; 262(5132):436-438. (Biology)

Brown J, Greaves MF, Molgaard HV. The gene encoding the stem cell antigen, CD34, is conserved in mouse and expressed in haemopoietic progenitor cell lines, brain, and embryonic fibroblasts. *Int Immunol*. 1991; 3(2):175-184. (Biology)

Goodell MA, Rosenzweig M, Kim H, et al. Dye efflux studies suggest that hematopoietic stem cells expressing low or undetectable levels of CD34 antigen exist in multiple species. *Nat Med*. 1997; 3(12):1337-1345. (Biology)

Lorenz K, Grashoff C, Torka R, et al. Integrin-linked kinase is required for epidermal and hair follicle morphogenesis. *J Cell Biol*. 2007; 177(3):501-513. (Biology)

Lu J, Patrene KD, Herberman RB, Boggs SS. Expression of murine CD34 by fetal liver NK cell progenitors. *Exp Hematol*. 1999; 27(2):272-281. (Biology)

Morel F, Szilvassy SJ, Travis M, Chen B, Galy A. Primitive hematopoietic cells in murine bone marrow express the CD34 antigen. *Blood*. 1996; 88(10):3774-3784. (Clone-specific)

Osawa M, Hanada K, Hamada H, Nakauchi H. Long-term lymphohematopoietic reconstitution by a single CD34-low/negative hematopoietic stem cell. *Science*. 1996; 273(5272):242-245. (Clone-specific)

Spangrude GJ, Heimfeld S, Weissman IL. Purification and characterization of mouse hematopoietic stem cells. *Science*. 1988; 241(4861):58-62. (Biology)

Suda J, Sudo T, Ito M, Ohno N, Yamaguchi Y, Suda T. Two types of murine CD34 mRNA generated by alternative splicing. *Blood*. 1992; 79(9):2288-2295. (Biology)

Suzuki A, Andrew DP, Gonzalo JA, et al. CD34-deficient mice have reduced eosinophil accumulation after allergen exposure and show a novel crossreactive 90-kD protein. *Blood*. 1996; 87(9):3550-3562. (Biology)