

# Technical Data Sheet

## BV711 Rat Anti-Mouse CD34

### Product Information

Material Number:	751621
Size:	50 µg
Clone:	RAM34
Alternative Name:	Cd34; CD34 antigen; Hematopoietic progenitor cell antigen CD34
Reactivity:	Mouse (Tested in Development)
Isotype:	Rat IgG2a, κ
Immunogen:	Recombinant Mouse CD34
Application:	Flow cytometry (Qualified)
Concentration:	0.2 mg/ml
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.
Regulatory Status:	RUO

### Description

The RAM34 monoclonal antibody specifically binds to 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 mRNA 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 the RAM34 antibody, 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. In contrast, 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 highly enriched for long-term reconstituting hematopoietic stem cells, is CD34- CD117 (c-Kit)+ Ly-6A/E (Sca-1)+ Lineage Marker-.

The antibody was conjugated to BD Horizon™ BV711 which is part of the BD Horizon Brilliant™ Violet family of dyes. This dye is a tandem fluorochrome of BD Horizon BV421 with an Ex Max of 405-nm and an acceptor dye with an Em Max at 711-nm. BD Horizon BV711 can be excited by the violet laser and detected in a filter used to detect Cy™5.5 / Alexa Fluor® 700-like dyes (eg, 712/20-nm filter). Due to the excitation and emission characteristics of the acceptor dye, there may be moderate spillover into the Alexa Fluor® 700 and PerCP-Cy5.5 detectors. However, the spillover can be corrected through compensation as with any other dye combination.

### Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze. The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. The antibody was conjugated to the dye under optimum conditions that minimize unconjugated dye and antibody.

### Recommended Assay Procedure

BD™ CompBeads can be used as surrogates to assess fluorescence spillover (Compensation). When fluorochrome conjugated antibodies are bound to BD CompBeads, they have spectral properties very similar to cells. However, for some fluorochromes there can be small differences in spectral emissions compared to cells, resulting in spillover values that differ when compared to biological controls. It is strongly recommended that when using a reagent for the first time, users compare the spillover on cells and BD CompBead to ensure that BD CompBeads are appropriate for your specific cellular application.

For optimal and reproducible results, BD Horizon Brilliant Stain Buffer should be used anytime two or more BD Horizon Brilliant dyes are used in the same experiment. Fluorescent dye interactions may cause staining artifacts which may affect data interpretation. The BD Horizon Brilliant Stain Buffer was designed to minimize these interactions. More information

can be found in the Technical Data Sheet of the BD Horizon Brilliant Stain Buffer (Cat. No. 563794/566349) or the BD Horizon Brilliant Stain Buffer Plus (Cat. No. 566385).

## Suggested Companion Products

Catalog Number	Name	Size	Clone
566385	Brilliant Stain Buffer Plus	1000 Tests	
566349	Brilliant Stain Buffer	1000 Tests	
554656	Stain Buffer (FBS)	500 mL	
554657	Stain Buffer (BSA)	500 mL	
563794	Brilliant Stain Buffer	100 Tests	
553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg	2.4G2
555899	Lysing Buffer	100 mL	
565804	Red Nucleic Acid Stain	0.5 mL	
563047	BV711 Rat IgG2a, κ Isotype Control	50 µg	R35-95

## Product Notices

1. The production process underwent stringent testing and validation to assure that it generates a high-quality conjugate with consistent performance and specific binding activity. However, verification testing has not been performed on all conjugate lots.
2. Researchers should determine the optimal concentration of this reagent for their individual applications.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. 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.
5. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at [www.bdbiosciences.com/colors](http://www.bdbiosciences.com/colors).
6. Please refer to [www.bdbiosciences.com/us/s/resources](http://www.bdbiosciences.com/us/s/resources) for technical protocols.
7. BD Horizon Brilliant Stain Buffer is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,575,303; 8,354,239.
8. Please refer to <http://regdocs.bd.com> to access safety data sheets (SDS).
9. Alexa Fluor® is a registered trademark of Life Technologies Corporation.
10. BD Horizon Brilliant Violet 711 is covered by one or more of the following US patents: 8,110,673; 8,158,444; 8,227,187; 8,455,613; 8,575,303; 8,354,239.
11. Cy is a trademark of GE Healthcare.

## 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.
- Baumhater S, Singer MS, Henzel W, et al. Binding of L-selectin to the vascular sialomucin CD34. *Science*. 1993; 262(5132):436-438.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Spangrude GJ, Heimfeld S, Weissman IL. Purification and characterization of mouse hematopoietic stem cells. *Science*. 1988; 241(4861):58-62.
- 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.
- 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.

## BD Biosciences

[bdbiosciences.com](http://bdbiosciences.com)

United States  
877.232.8995

Canada  
888.268.5430

Europe  
32.53.720.550

Japan  
0120.8555.90

Asia Pacific  
65.6861.0633

Latin America/Caribbean  
0800.771.7157



For country contact information, visit [bdbiosciences.com/contact](http://bdbiosciences.com/contact)

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 a 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.

©2020 BD. All rights reserved. Unless otherwise noted, BD, the BD Logo and all other trademarks are the property of Becton, Dickinson and Company or its affiliates.