

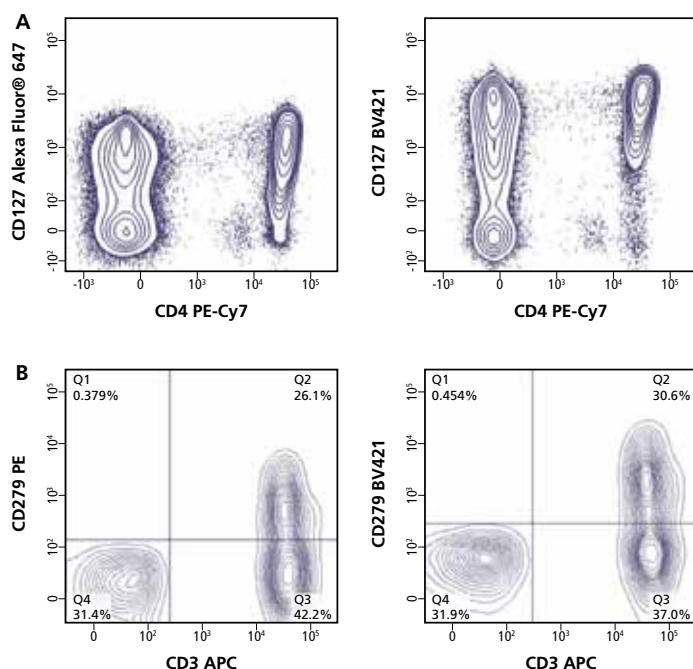


BD Horizon Brilliant™ Dyes

See what nature is hiding

Welcome to a more colorful worldSM

For the past 40 years flow cytometry solutions have kept pace with the accelerating speed of discovery in life sciences. In 2012, BD acquired Sirigen Ltd, a company that pioneered the development of unique polymer dyes that are very bright and photostable.



Example of improved resolution obtained when using BD Horizon Brilliant Dyes

- A. Cells stained with Hu CD4 PE-Cy7TM and CD127 Alexa Fluor® 647 or BV421.
- B. Cells stained with Hu CD3 APC and CD279 PE or BV421.

BD Horizon BrilliantTM Violet Dyes

Since introducing BD Horizon BrilliantTM Violet 421, BD has expanded the Brilliant Violet portfolio considerably. There are now six dyes in all, which have been enthusiastically adopted by the flow cytometry community.

BD Horizon BrilliantTM Violet 421 (BV421)

(Ex Max 407 nm/ Em Max 421 nm) is a polymer-based dye excited by the violet laser and is one of the brightest fluorochromes offered by BD Biosciences.

BD Horizon BrilliantTM Violet 510 (BV510)

(Ex Max 405 nm/ Em Max 510 nm) is a polymer-based dye that is brighter than BD HorizonTM V500.

BD Horizon BrilliantTM Violet 605 (BV605)

(Ex Max 407 nm/Em Max 602 nm) is a tandem fluorochrome that combines BD Horizon BV421 and an acceptor dye with an Em Max at 602 nm.

BD Horizon BrilliantTM Violet 650 (BV650)

(Ex Max 407 nm/Em Max 650 nm) is a tandem fluorochrome of BD Horizon BV421 and an acceptor dye with an Em Max at 650 nm.

BD Horizon BrilliantTM Violet 711 (BV711)

(Ex Max 407 nm/Em Max 711 nm) is a tandem fluorochrome of BD Horizon BV421 and an acceptor dye with an Em Max at 711 nm.

BD Horizon BrilliantTM Violet 786 (BV786)

(Ex Max 407 nm/Em Max 786 nm) is a tandem fluorochrome of BD Horizon BV421 and an acceptor dye with an Em Max at 786 nm.

We are grateful to the Sirigen team who brought these pioneering products to market and to you, the flow cytometry community, who have popularized them. We look forward to supporting your future research with tools that assist you with your endeavors to understand disease and improve the human condition.

This catalog is dedicated to the products of that acquisition. Sold today by BD Biosciences as BD Horizon Brilliant™ dyes these products efficiently convert collected excitation light to emitted light at a higher wavelength, enabling scientists to identify cell populations with a broader range of receptor density than was previously possible. Simply put, these dyes enable resolution of cell populations that were previously obscured, opening new avenues of investigation and a deeper level of biological study using flow cytometry.

BD Horizon Brilliant™ Ultraviolet Dyes

BD Horizon Brilliant Ultraviolet reagents were developed exclusively by BD Biosciences to expand the multicolor capabilities of flow cytometers equipped with 355-nm lasers. These dyes allow markers to be spread across more lasers, reducing the overall compensation requirements of a multicolor panel.

BD Horizon Brilliant™ Ultraviolet 395 (BUV395)

BUV395 has virtually no spillover into any other detector, and other fluorochromes have little to no spillover into the BUV395 detector, allowing for further simplification, while expanding options for panel design.

BD Horizon Brilliant™ Ultraviolet 496 (BUV496)

BUV496 is a tandem dye that combines BUV395 and an acceptor dye with an emission max at 496 nm.

BD Horizon Brilliant™ Ultraviolet 661 (BUV661)

BUV661 is a tandem dye that combines BUV395 and an acceptor dye with an emission max at 661 nm.

BD Horizon Brilliant™ Ultraviolet 737 (BUV737)

BUV737 is a tandem dye that combines BUV395 and an acceptor dye with an emission max at 737 nm.

BD Horizon Brilliant™ Ultraviolet 805 (BUV805)

BUV805 is a tandem dye that combines BUV395 and an acceptor dye with an emission max at 805 nm.

BD Horizon Brilliant™ Blue Dyes

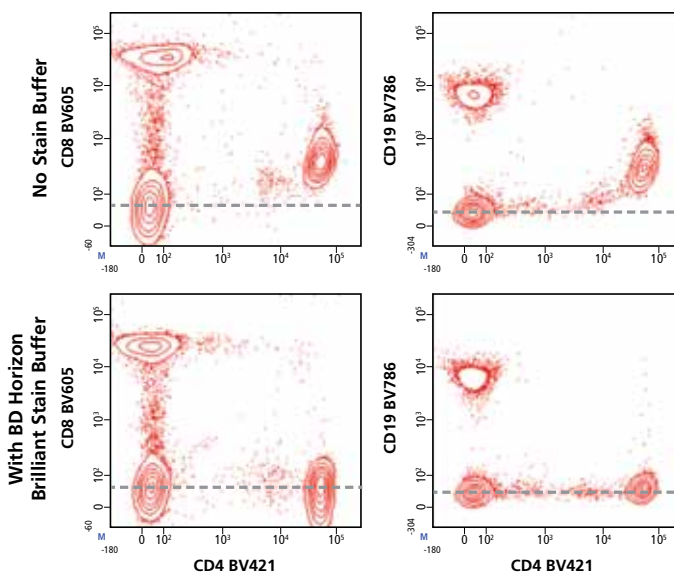
BD Horizon Brilliant™ Blue 515 (BB515) (Ex Max 490 nm/ Em Max 515 nm) is significantly brighter than FITC and has less spillover into neighboring channels.

Compatible with standard surface and intracellular staining protocols

BD Horizon Brilliant dyes are compatible with standard buffers used in surface and intracellular staining protocols. These reagents also demonstrate compatibility in paraformaldehyde-based fixatives and both EDTA and heparin blood collection tubes. Buffer compatibility also is clone-dependent, so some reagents might not be compatible with all buffer systems.

BD Horizon Brilliant™ Stain Buffer

The full range of BD Horizon Brilliant dyes has recently been enhanced by an innovative BD Biosciences proprietary staining buffer, to resolve possible dye-to-dye interactions observed when testing BD reagents as well as reagents from another company. Using the dye and buffer combination has been shown to produce consistently predictable results both in rigorous testing at BD and in Tests performed by numerous key opinion leaders around the world. Constantly innovating on products we deliver to our customers is part of our ongoing commitment to help you achieve reliable and consistent results.



Enhanced performance of BV reagents

In this example, lysed human whole blood samples were stained with BV421-conjugated CD4 and BV605-conjugated CD8 with and without BD Horizon Brilliant stain buffer. Staining cells in the presence of BD Horizon Brilliant stain buffer restored populations to their expected locations.

BD Horizon Brilliant™ Violet 421

BD Horizon Brilliant™ Violet 421 (BV421) is one of the brightest dyes offered by BD. The brightness of the dye makes it particularly useful in multicolor applications in which it can be used to better resolve dim populations.

BV421 is a base polymer dye that brings phycoerythrin (PE) level brightness to the violet laser. The BV421 conjugates are, on average, 10 times brighter than Pacific Blue™ conjugates and can be 2–3 times brighter than PE conjugates (Table 1, Figure 3). With maximum emission peaks at 421 nm and 448 nm, BV421 is compatible with the standard BD Horizon™ V450 filter set (for example, 450/50 nm) (Figure 1).

Excellent population resolution

In many cases, the typical violet excitable dyes are not bright enough to adequately resolve dim populations when compared to existing bright fluorochromes such as PE or Alexa Fluor® 647. However, as shown in Table 1, the BV421 polymer is a very bright fluorochrome that provides excellent population resolution when coupled to antibodies directed at low antigen density markers. This fluorochrome brightness, in conjunction with the low spillover of other fluors into it, contributes to the BV421 conjugates providing equal or superior resolution to dyes excited by the blue and red lasers.

The example on the following page compares the staining of CD25 and CD127 labeled with BV421 to that of PE and Alexa Fluor® 647 respectively, in a 7-color panel used to identify regulatory T cells. Two different panels were run in parallel: one contained CD25 BV421 and CD127 Alexa Fluor® 647 (Figures 2C and 2D) and the other contained CD25 PE and CD127 BV421 (Figures 2A and 2B). The dot plots demonstrate how using CD25 BV421 resulted in complete separation between the CD25 negative and positive populations compared to the PE conjugate. The brightness of these two BV421 conjugates allows for easy and unequivocal identification of the CD25^{bright}CD127^{dim} population (regulatory T cells) as shown in Figures 2B and 2D.

BD Horizon™ BV421	
Relative Brightness	Very Bright
Ex (max)	405 nm
Em (max)	421 nm
Filter	450/40
Compatible BD Biosciences instruments	All BD flow cytometers with a violet laser: BD FACSCanto™ II, BD FACSVerser™, BD™ LSR platform, BD FACSAria™ platform, BD Influx™ cell sorter
Alternative fluorochromes	BD Horizon™ V450, Alexa Fluor® 405, VioBlue®, eFluor® 450, Pacific Blue™

Reagent	Clone	Fluorochrome	Stain Index
CD4	RPA-T4	BV421	561
		Pacific Blue™	24
		PE	142
CD8	RPA-T8	BV421	782
		Pacific Blue™	29
		PE	198
CD127	hIL-7R-M21	BV421	55
		PE	14

Table 1. Lysed whole blood from a single sample stained with CD4, CD8, or CD127 conjugated to BV421, PE, or Pacific Blue™, run on a BD LSRFortessa™ flow cytometer. All conjugates were run at optimal concentration. Data shown was gated on lymphocytes. Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

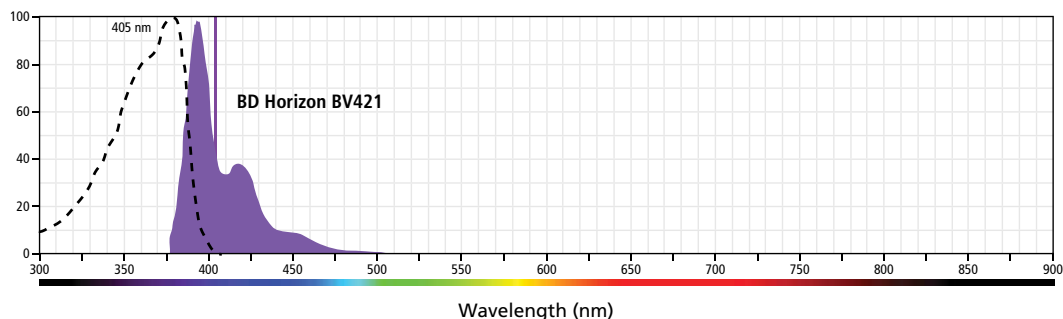


Figure 1. Excitation and emission profile of BV421.

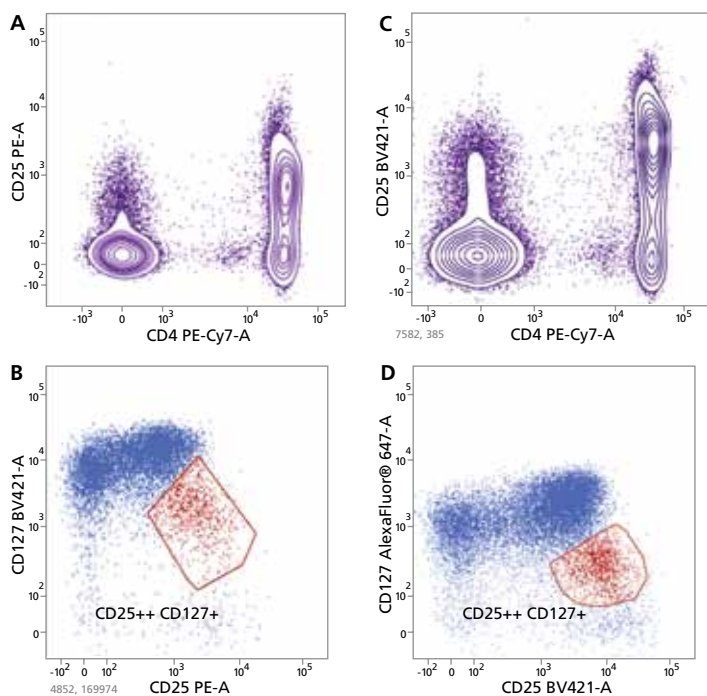


Figure 2. A, B. Lysed whole blood stained with CD3 V500, CD4 PE-Cy™7, CD8 PerCP-Cy™5.5, CD45RA APC, HLA-DR APC-H7, CD25 PE, and CD127 BV421. C, D. Lysed whole blood stained with CD3 V500, CD4 PE-Cy7, CD8 PerCP-Cy5.5, CD45RA PE, HLA-DR APC-H7, CD127 Alexa Fluor® 647, and CD25 BV421. The events in Figures 2A and 2C were gated on CD3⁺ lymphocytes. The events in Figures 2B and 2D were gated on CD3⁺CD4⁺ lymphocytes. All data was run on a BD FACSVerser flow cytometer.

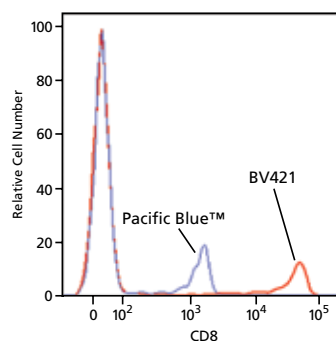


Figure 3. Lysed whole blood stained with CD8 BV421 or Pacific Blue™.

BD Horizon Brilliant™ Violet 421

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD1a	Hu	HI149	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	563939
				FCM	RUO	BD Horizon BV421	100 Tests	563938
CD2	Hu	RPA-2.10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562667
				FCM	RUO	BD Horizon BV421	100 Tests	562639
CD3	Bab, Cyno, Rhe Hu	SP34-2	Mouse IgG ₁ , λ	FCM	RUO	BD Horizon BV421	50 Tests	562877
			Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	563797
		UCHT1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563798
				FCM	RUO	BD Horizon BV421	25 Tests	562427
				FCM	RUO	BD Horizon BV421	100 Tests	562426
				FCM	RUO	BD Horizon BV421	100 Tests	562426
CD4	Hu	RPA-T4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562425
				FCM	RUO	BD Horizon BV421	100 Tests	562424
	Hu, NHP	L200	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562842
CD5	Hu	UCHT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562646
CD6	Hu	M-T605	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564259
CD7	Hu	M-T701	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562635
CD8	Hu	RPA-T8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562429
				FCM	RUO	BD Horizon BV421	100 Tests	562428
CD10	Hu	HI10A	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562902
CD11a	Bab, Cyno, Hu, Rhe	HI111	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	563937
				FCM	RUO	BD Horizon BV421	100 Tests	563936
CD11b/Mac-1	Hu	ICRF44	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562632
CD11c	Hu	B-LY6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562561
CD13	Hu	WM15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562596
CD14	Hu	MψP9	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	25 Tests	563744
				FCM	RUO	BD Horizon BV421	100 Tests	563743
CD15s	Hu	CSLEX1	Mouse IgM, κ	FCM	RUO	BD Horizon BV421	50 Tests	563912
CD16	Hu	3G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562878
				FCM	RUO	BD Horizon BV421	100 Tests	562874
CD18	Hu	6.7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562871
CD19	Hu	HIB19	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562441
				FCM	RUO	BD Horizon BV421	100 Tests	562440
CD20	Hu	H1	Mouse IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563346
		2H7	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	100 Tests	562873
CD21	Hu	B-LY4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562966
CD22	Hu	HIB22	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563940
CD23	Hu	M-L233	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562707
CD24	Hu	ML5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	100 Tests	562789
CD25	Hu	2A3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564033
CD25	Hu	M-A251	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562443
				FCM	RUO	BD Horizon BV421	100 Tests	562442
CD27	Hu	M-T271	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562514
				FCM	RUO	BD Horizon BV421	100 Tests	562513
CD28	Hu	CD28.2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562613
CD30	Hu	BERH8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562876
CD31	Hu	WM59	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	564089
CD33	Hu	WM53	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562854
CD34	Hu	581	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562577
CD38	Hu	HIT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562445
				FCM	RUO	BD Horizon BV421	100 Tests	562444
CD39	Hu	TU66	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	100 Tests	563679
CD40	Hu	5C3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563396
CD41b	Hu	HIP2	Mouse IgG ₂ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563312
CD43	Hu	1G10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562916

BD Horizon Brilliant™ Violet 421

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD44	Hu	G44-26	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	100 Tests	562890
CD45	Hu	HI30	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	563880
				FCM	RUO	BD Horizon BV421	100 Tests	563879
CD45RA	Hu	HI100	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562885
CD45RO	Hu	UCHL1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	25 Tests	562649
				FCM	RUO	BD Horizon BV421	100 Tests	562641
CD47	Hu	B6H12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563760
CD48	Hu	TU145	Mouse IgM, κ	FCM	RUO	BD Horizon BV421	100 Tests	562718
CD49b	Hu	12F1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	100 Tests	564119
CD49F	Hu	GOH3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	25 Tests	562598
				FCM	RUO	BD Horizon BV421	100 Tests	562582
CD54	Hu	HA58	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564077
CD56	Hu	NCAM16.2	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	25 Tests	562752
				FCM	RUO	BD Horizon BV421	100 Tests	562751
CD57	Hu	NK-1	Mouse IgM, κ	FCM	RUO	BD Horizon BV421	50 Tests	563896
CD58	Dog, Hu	1C3	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	100 Tests	564363
CD59	Hu	p282 (H19)	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	100 Tests	564329
CD62E	Hu	68-5H11	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563360
CD62L	Hu	DREG-56	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563862
CD62P	Hu	AK-4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	564037
				FCM	RUO	BD Horizon BV421	100 Tests	564038
CD64	Hu	10.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562872
CD66	Hu	B1.1/CD66	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	100 Tests	562741
CD66b	Hu	G10F5	Mouse IgM, κ	FCM	RUO	BD Horizon BV421	100 Tests	562940
CD69	Bab, Cyno, Rhe	FN50	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562883
	Hu	FN50	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562884
CD71	Hu	M-A712	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562995
CD73	Hu	AD2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562431
				FCM	RUO	BD Horizon BV421	100 Tests	562430
CD79A	Hu	HM47	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562852
CD80	Hu	L307.4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564160
CD83	Hu	HB15E	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562630
CD86	Hu	2331 (FUN-1)	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562433
				FCM	RUO	BD Horizon BV421	100 Tests	562432
CD90	Hu	5E10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	562556
CD95	Bab, Cyno, Rhe	DX2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562648
CD103	Hu	Ber-ACT8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563882
CD105	Hu	266	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563920
CD107A	Hu	H4A3	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562623
CD110	Hu	1.6.1	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	562672
CD116	Hu	hGMCSFR-M1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 µg	564045
CD117	Hu	104D2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563856
				FCM	RUO	BD Horizon BV421	25 Tests	562435
				FCM	RUO	BD Horizon BV421	100 Tests	562434
CD122 Receptor β	Hu	Mik-β3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562887
CD123	Hu	7G3	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	563362
		9F5	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562517
CD126	Hu	M5	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564163
CD127	Hu	HIL7R-M21.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	25 Tests	562437
				FCM	RUO	BD Horizon BV421	100 Tests	562436
CD130	Hu	AM64	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564153
CD131	Hu	3D7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564192
CD132	Hu	AG184	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562881

BD Horizon Brilliant™ Violet 421

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD135	Hu	4G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564708
CD137	Hu	4B4-1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	564091
CD138	Hu	MI15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562935
CD140a	Hu	ALPHA R1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562799
CD140b	Hu	28D4	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	564124
CD146	Hu	P1H12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	564325
CD147	Hu	HIM6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562583
CD150	Hu	A12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562875
CD152	Hu	BNI3	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562743
CD154	Hu	TRAP1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563886
CD161	Hu	DX12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562615
CD163	Hu	GHI/61	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562643
CD166	Hu	3A6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562936
CD177	Hu	MEM-166	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	564240
CD183	Hu	1C6/CXCR3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562558
CD184	Hu	12G5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562448
CD193	Hu	5E10	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562570
CD194	Hu	1G1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562579
CD195	Hu	2D7/CCR5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562576
CD196 (CCR6)	Hu	11A9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562515
CD197 (CCR7)	Hu	150503	Mouse IgG2a	FCM	RUO	BD Horizon BV421	50 Tests	562555
CD200	Hu	MRC OX-104	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	564114
CD203c	Hu	NP4D6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563296
CD206	Hu	19.2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564062
CD209	Hu	DCN46	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 Tests	564127
CD221	Hu	1H7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562593
CD235a	Hu	GA-R2 (HIR2)	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562938
CD253	Hu	RIK-2	Mouse IgG ₁	FCM	RUO	BD Horizon BV421	100 Tests	564243
CD268	Hu	11C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	564819
CD271	Hu	C40-1457	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562562
CD272 (BTLA)	Hu	J168-540	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 µg	564802
CD273	Hu	MIH18	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563842
CD274	Hu	MIH1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563738
CD275	Hu	2D3/B7-H2	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	100 Tests	564276
CD278	Hu	DX29	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562901
CD279 (PD-1)	Hu	EH12.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562516
		MIH4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	564323
CD294	Hu	BM16	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562992
CD326	Hu	EBA-1	Mouse IgG1, λ	FCM	RUO	BD Horizon BV421	50 Tests	563180
CD335 (Nkp46)	Hu	9E2/Nkp46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	564065
CD337	Hu	p30-15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	100 Tests	563385
CD338	Hu	5D3	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562740
Akt (pS473)	Hu, Ms	M89-61	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562599
Annexin V	Hu			FCM	RUO	BD Horizon BV421	100 Tests	563973
B7-H4	Hu	MIH43	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562786
Btk(pY223)/Itk(pY180)	Hu, Ms	N35-86	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	564848
CCR10	Hu	1B5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	25 µg	564770
Clec9A	Hu	3A4/Clec9A	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	25 µg	564266
Cutaneous Lymphocyte Antigen (CLA)	Hu	HECA-452	Rat IgM, κ	FCM	RUO	BD Horizon BV421	100 Tests	563961
CXCR5	Hu	RF8B2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562747
Cytokeratin	Hu	CAM5.2	Mouse IgG _{2a}	IC/FCM	RUO	BD Horizon BV421	50 Tests	564709
Disialoganglioside GD2	Hu	14.G2a	Mouse IgG _{2a}	FCM	RUO	BD Horizon BV421	50 Tests	564223
E-Cadherin	Dog, Hu, Ms, Rat	36/E-Cadherin	Mouse IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV421	100 Tests	564186

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
EGF-R	Hu	EGFR.1	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 Tests	563343
Erk1/Erk2 (pT202/pY204)	Hu	20A	Mouse IgG ₁	IC/FCM	RUO	BD Horizon BV421	50 Tests	562981
EZH2	Hu, Ms, Rat, Dog, Chick	11/EZH2	Mouse IgG ₁	IC/FCM	RUO	BD Horizon BV421	50 Tests	562963
Fcγ Receptor	Hu	HM14-1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	564714
GARP	Hu	7B11	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	100 Tests	563956
GATA3	Hu, Ms	L50-823	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563349
GM-CSF	Hu	BVD2-21C11	Rat IgG2a	IC/FCM	RUO	BD Horizon BV421	50 Tests	562930
Granzyme B	Hu	GB11	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563389
H2AX (pS139)	Hu, Ms	N1-431	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	564720
HLA-DR	Hu	G46-6	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	25 Tests	562805
				FCM	RUO	BD Horizon BV421	100 Tests	562804
HLA-DR, DP, DQ	Hu	Tu39	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	564244
IFNγ	Hu	B27	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562988
Ig, κ light chain	Hu	G20-193	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562619
Ig, λ light chain	Hu	JDC-12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562893
IgD	Hu	IA6-2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562518
IgG	Hu	G18-145	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562581
IgM	Hu	G20-127	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562618
IL-2	Hu	5344.111	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562914
		MQ1-17H12	Mouse IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV421	100 Tests	564164
IL-4	Hu	8D4-8	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562986
		MP4-25D2	Mouse IgG ₁	IC/FCM	RUO	BD Horizon BV421	100 Tests	564110
IL-6	Hu	MQ2-13A5	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV421	50 Tests	563279
IL-8	Hu	G265-8	Mouse IgG _{2b}	IC/FCM	RUO	BD Horizon BV421	50 Tests	563310
IL-9	Hu	MH9A3	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	100 Tests	564254
IL-10	Hu, Vir	JES3-9D7	Mouse IgG ₁	IC/FCM	RUO	BD Horizon BV421	50 Tests	564053
IL-13	Hu	JES10-5A2	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV421	50 Tests	563580
IL-17A	Hu	N49-653	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562933
IL-21	Hu	3A3-N2.1	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	100 Tests	564755
IL-21 Receptor (CD360)	Hu	17A12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563728
ILT7 (CD85G)	Hu	17G10.2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562578
KI-67	Hu	B56	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562899
Lgr5 (N-Terminal)	Hu	8F2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 Tests	562925
MIP-1β	Hu	D21-1351	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562900
Notch1	Hu	MHN1-519	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	564783
Notch4	Hu	MHN4-2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563905
Oct-2	Hu, Ms	9A2	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563196
OX-40 Ligand	Hu	ik-1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563766
Pax-5	Hu, Ms	1H9	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563190
Perforin	Hu	DELTA G9	Mouse IgG _{2b} , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563393
RANTES	Hu	2D5	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	564754
RORγt	Hu	Q21-559	Mouse IgG _{2b} , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563282
SSEA-3	Hu	MC-631	Rat IgM	FCM	RUO	BD Horizon BV421	50 Tests	562706
Stat1 (pY701)	Hu, Ms	4A	Mouse IgG _{2a}	IC/FCM	RUO	BD Horizon BV421	50 Tests	562985
Stat5 (pY694)	Hu	47/STAT5(PY694)	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562984
T-bet	Hu, Ms	O4-46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563318
TGFβ1	Hu	TW4-9E7	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562962
THEMIS	Hu	Q13-1103	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563721
TNF	Hu	MAB11	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562783
TRA-1-60	Hu	TRA-1-60	Mouse IgM, κ	FCM	RUO	BD Horizon BV421	50 Tests	562711
TRA-1-85 Antigen	Hu	TRA-1-85	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563302
Trop-2	Hu	162-46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 μg	563243
γδ T-Cell Receptor	Hu	B1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	562560
XBP-1S	Hu, Ms	Q3-695	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563382

BD Horizon Brilliant™ Violet 421

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD1d	Ms	1B1	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	562712
CD3e	Ms	145-2C11	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV421	50 µg	562600
CD3 Molecular Complex	Ms	17A2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	564008
CD4	Ms	GK1.5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	562891
CD5	Ms	53-7.3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562739
CD8a	Ms	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	563898
CD9	Ms	KMC8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	564235
CD11a	Ms	2D7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562918
CD11b	Ms	M1/70	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	562605
CD11c	Ms	HL3	Ar Ham IgG2, λ	FCM	RUO	BD Horizon BV421	50 µg	562782
CD13	Ms	R3-242	Rat IgG ₁	FCM	RUO	BD Horizon BV421	50 µg	564354
CD16/CD32	Ms	2.4G2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	562896
CD18	Ms	C71/16	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562931
CD19	Ms	1D3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562701
CD21/CD35	Ms	7G6	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	562756
CD23	Ms	B3B4	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562929
CD24	Ms	M1/69	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	562563
CD25	Ms	PC61	Rat IgG1, λ	FCM	RUO	BD Horizon BV421	50 µg	562606
		3C7	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	564370
		7D4	IgM, κ	FCM	RUO	BD Horizon BV421	50 µg	564571
CD28	Ms	37.51	Syr Ham IgG2, λ1	FCM	RUO	BD Horizon BV421	50 µg	562764
CD29	Ms, Rat	Ha2/5	Ar Ham IgM, κ	FCM	RUO	BD Horizon BV421	50 µg	564131
CD31	Ms	MEC 13.3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562939
		390	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	563356
CD34	Ms	RAM34	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562608
CD38	Ms	90	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562768
CD40	Ms	23-Mar	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562846
CD41	Ms	MWREG30	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 µg	562957
CD43	Ms	S7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562958
CD44	Ms	IM7	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	563970
CD45	Ms	30-F11	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	563890
CD45.1	Ms	A20	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	563983
CD45.2	Ms	104	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562895
CD45R/B220	Ms	RA3-6B2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562922
CD45RB	Ms	16A	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562849
CD48	Ms	HM48-1	Ar Ham IgG1, λ3	FCM	RUO	BD Horizon BV421	50 µg	562745
CD49b/Pan NK cells	Ms	DX5	Rat IgM, κ	FCM	RUO	BD Horizon BV421	50 µg	563063
CD54	Ms	3E2	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV421	50 µg	564704
CD61	Ms	2C9.G2	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV421	50 µg	562917
CD62L	Ms	MEL-14	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562910
CD62P	Ms	RB40.34	Rat IgG ₁ , λ	FCM	RUO	BD Horizon BV421	50 µg	564289
CD69	Ms	H1.2F3	Ar Ham IgG1, λ3	FCM	RUO	BD Horizon BV421	50 µg	562920
CD70	Ms	FR70	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	562908
CD71	Ms	C2 (aka C2F2)	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 µg	562716
CD80	Ms	16-10A1	Ar Ham IgG2, κ	FCM	RUO	BD Horizon BV421	50 µg	562611
CD83	Ms	Michel-19	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 µg	562932
CD86	Ms	GL1	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	564198
CD90.1	Ms, Rat	OX-7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 µg	563770
CD93	Ms	AA4.1	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	563806
CD95	Ms	JO2	Ar Ham IgG2, λ	FCM	RUO	BD Horizon BV421	50 µg	562633
CD103	Ms	M290	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562771
CD105	Ms	MJ7/18	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562760
CD107a	Ms	1D4B	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV421	50 µg	564347

Mouse continued

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD107b	Ms	ABL-93	Rat IgG _{2a} λ	IC/FCM	RUO	BD Horizon BV421	50 µg	564249
CD117	Ms	2B8	Rat IgG _{2b} κ	FCM	RUO	BD Horizon BV421	50 µg	562609
CD120b	Ms	TR75-89	Ar Ham IgG1, λ3	FCM	RUO	BD Horizon BV421	50 µg	564088
CD121a	Ms	35F5	Rat IgG ₁ κ	FCM	RUO	BD Horizon BV421	50 µg	564387
CD121b	Ms	4.00E+02	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562926
CD122	Ms	TM-BETA 1	Rat IgG _{2b} κ	FCM	RUO	BD Horizon BV421	50 µg	562960
CD124	Ms	mIL4R-M1	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	564086
CD127	Ms	SB/199	Rat IgG _{2b} κ	FCM	RUO	BD Horizon BV421	50 µg	562959
CD135	Ms	A2F10.1	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562898
CD138	Ms	2B1-2	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562610
CD140a	Ms	APA5	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562774
CD144	Ms	11D4.1	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562795
CD147	Ms	RL73	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562934
CD150	Ms	Q38-480	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562811
CD162	Ms	2PH1	Rat IgG ₁ κ	FCM	RUO	BD Horizon BV421	50 µg	562807
CD183	Ms	CXCR3-173	Ar Ham IgG1	FCM	RUO	BD Horizon BV421	50 µg	562937
CD184	Ms	2B11/CXCR4	Rat IgG _{2b} κ	FCM	RUO	BD Horizon BV421	50 µg	562738
CD196 (CCR6)	Ms	140706	Rat IgG _{2a}	FCM	RUO	BD Horizon BV421	25 Tests	564736
CD197 (CCR7)	Ms	4B12	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562675
CD273	Ms	TY25	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	564245
CD274 (MIH5)	Ms	MIH5	Rat IgG _{2a} λ	FCM	RUO	BD Horizon BV421	50 µg	564716
CD276	Ms	MIH32	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562634
CD278	Ms	7E.17G9	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	564070
CD279	Ms	J43	Ar Ham IgG2, κ	FCM	RUO	BD Horizon BV421	50 µg	562584
CD314	Ms	CX5	Rat IgG ₁	FCM	RUO	BD Horizon BV421	50 µg	562800
CD326	Ms	G8.8	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	563214
CD335 (Nkp46)	Ms	29A1.4	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562850
CD357 (GITR)	Ms	DTA-1	Rat IgG _{2b}	FCM	RUO	BD Horizon BV421	100 µg	563391
Akt (pS473)	Hu, Ms	M89-61	Mouse IgG ₁ κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	562599
BCL-6	Hu, Ms	K112-91	Rat IgG _{2a} κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563363
Blimp-1	Ms	5E7	Rat IgG _{2a} κ	IC/FCM	RUO	BD Horizon BV421	50 µg	564270
Cleaved PARP	Hu, Ms	F21-852	Mouse IgG ₁ κ	IC/FCM	RUO	BD Horizon BV421	100 Tests	564129
Clec9A	Ms	10B4	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	564271
Clec12A	Ms	5D3	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	564795
CXCR5	Ms	2G8	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562889
EZH2	Hu, Dog, Chick, Ms, Rat	11/EZH2	Mouse IgG ₁	IC/FCM	RUO	BD Horizon BV421	50 Tests	562963
F4/80-like receptor	Ms	6F12	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	563900
Flk-1	Ms	AVAS 12Alpha1	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562941
Foxp3	Ms	MF23	Rat IgG _{2b}	FCM	RUO	BD Horizon BV421	50 µg	562996
GATA3	Hu, Ms	L50-823	Mouse IgG ₁ κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563349
GITR Ligand	Ms	MIH44	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	563366
GM-CSF	Ms	MP1-22E9	Rat IgG _{2a}	IC/FCM	RUO	BD Horizon BV421	50 µg	564747
H-2Kb	Ms	AF6-88.5	Mouse IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562942
I-A/I-E	Ms	M5/114.15.2	Rat IgG _{2b} κ	FCM	RUO	BD Horizon BV421	50 µg	562564
I-Ab	Ms	AF6-120.1	Mouse IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562928
Ig	Ms	Polyclonal	Goat Ig	Bioimg, FCM, IF, IHC	RUO	BD Horizon BV421	0.1 mg	563846
Ig, κ light chain	Ms	187.1	Rat IgG ₁ κ	FCM	RUO	BD Horizon BV421	50 µg	562888
IgE	Ms	R35-72	Rat IgG ₁ κ	FCM	RUO	BD Horizon BV421	50 µg	564207
IgG1	Ms	A85-1	Rat IgG ₁ κ	FCM	RUO	BD Horizon BV421	50 µg	562580
IgM	Ms	R6-60.2	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BV421	50 µg	562595
IL-2	Ms	JES6-5H4	Rat IgG _{2b} κ	FCM	RUO	BD Horizon BV421	50 µg	562969
IL-4	Ms	11B11	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV421	50 µg	562915
IL-10	Ms	JES5-16E3	Rat IgG _{2b}	IC/FCM	RUO	BD Horizon BV421	50 µg	563276

BD Horizon Brilliant™ Violet 421

Mouse *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
IL-17A	Ms	TC11-18H10	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 µg	563354
Integrin β7	Hu, Ms	FIB504	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	100 Tests	564283
KLRG1	Ms	2F1	Syr Ham IgG2, κ	FCM	RUO	BD Horizon BV421	50 µg	562897
LPAM-1	Ms	DATK 32	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562943
Ly-6A/E	Ms	D7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562729
Ly-6C	Ms	AL-21	Rat IgM, κ	FCM	RUO	BD Horizon BV421	50 µg	562727
Ly-6G	Ms	1A8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562737
Ly-6G/Ly-6C	Ms	RB6-8C5	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562709
NK-1.1	Ms	PK136	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562921
Oct-2	Hu, Ms	9A2	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563196
Pax-5	Hu, Ms	1H9	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563190
RORγT	Ms	Q31-378	Mouse IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV421	50 µg	562894
Siglec-F	Ms	E50-2440	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	562681
SSEA-1	Ms	MC480	Mouse IgM, κ	FCM	RUO	BD Horizon BV421	50 Tests	562705
Stat1 (pY701)	Hu, Ms	4A	Mouse IgG _{2a}	IC/FCM	RUO	BD Horizon BV421	50 Tests	562985
T-B Cell Activation Antigen	Ms	GL7	Rat IgM, κ	FCM	RUO	BD Horizon BV421	50 µg	562967
T-bet	Hu, Ms	O4-46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV421	50 Tests	563318
TCR βchain	Ms	H57-597	Ar Ham IgG2, λ	FCM	RUO	BD Horizon BV421	50 µg	562839
γδ T-Cell Receptor	Ms	GL3	Ar Ham IgG2, κ	FCM	RUO	BD Horizon BV421	50 µg	562892
Vα2 TCR	Ms	B20.1	Rat IgG _{2a} , λ	FCM	RUO	BD Horizon BV421	50 µg	562944
TER-119/Erythroid Cells	Ms	TER-119	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV421	50 µg	563998
TLT-2 (Trem12)	Ms	MIH47	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV421	50 µg	564185
TNF	Ms	MP6-XT22	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV421	50 µg	563387
XBP-1S	Hu, Ms	Q3-695	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV421	50 Tests	563382

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Ham IgG1, κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562601
Hamster IgG1, λ	G235-2356	Ar Ham IgG1, λ.1	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562919
Hamster IgG2, κ	B81-3	Ar Ham IgG2, κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562612
Hamster IgG2, λ	HA4/8	Ar Ham IgG2, λ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562629
Hamster IgM, λ.1	G235-1	Ar Ham IgM, λ.1	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	564340
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562438
Mouse IgG2a, κ	G155-178	Mouse IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562439
Mouse IgG2a, κ	MOPC-173	Mouse IgG _{2a} , κ	IC/FCM, ICtrl	RUO	BD Horizon BV421	50 µg	563464
Mouse IgG2b, κ	27-35	Mouse IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562748
Mouse IgG3, κ	J606	Mouse IgG ₃ , κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	563314
Mouse IgM, κ	G155-228	Mouse IgM, κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562704
Rat IgG1, κ	R3-34	Rat IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562868
Rat IgG1, λ	A110-1	Rat IgG ₁ , λ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562604
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562602
Rat IgG2a, λ	B39-4	Rat IgG _{2a} , λ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562965
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562603
Rat IgM, κ	R4-22	Rat IgM, κ	FCM, ICtrl	RUO	BD Horizon BV421	50 µg	562708

BD Horizon Brilliant™ Violet 510

BD Horizon Brilliant™ Violet 510 (BV510) is brighter than currently available fluorochromes in the BD Horizon™ V500 detector.

BV510 is a base polymer dye that is often brighter than FITC (Table 1). With maximum emission at 510 nm, BV510 is compatible with the standard BD Horizon V500 filter set (for example, 525/50 nm) (Figure 1).

Use in multicolor applications

Although BD Horizon V500 and BV510 can be used interchangeably, there might be instances when one dye has an advantage over the other. This is especially true in multicolor panel design, for which dye selection is key to obtaining accurate data. One of the first rules of panel design is to place dim markers on bright dyes and reserve highly expressed markers for dimmer dyes. BV510 is much brighter than BD Horizon V500, making it a better choice for lowly expressed antigens or when detecting dim populations. BV510 will provide better population resolution, leading to more accurately resolved populations.

Another very important rule in panel design is to minimize spillover. Whenever more than one marker is expressed on a single cell, the presence of the other fluorescent reagents can contribute significant optical background in proportion to their brightness. Even with proper compensation, if a large amount of unwanted signal spills over into a neighboring detector where a dim signal is to be detected, resolution sensitivity might be lowered and the populations might not be accurately resolved. Due to its spectral profile, BV510 will have more spillover into the BD Horizon Brilliant™ Violet 605 (BV605) detector than will BD Horizon V500. If detecting a dim marker in the BV605 detector, and a bright marker in the BD Horizon V500/BV510 detector, BD Horizon V500 might actually be a better choice due to less spillover.

BV510 and BD Horizon V500 are excellent dyes for the second channel of the violet laser. BV510 is most useful for resolving dim populations and can easily be multiplexed with BV421. BD Horizon V500 can be used for highly expressed antigens when spillover into neighboring channels may be of greater concern than brightness.

BD Horizon™ BV510	
Relative Brightness	Moderate
Ex (max)	405 nm
Em (max)	510 nm
Filter	525/50
Compatible BD Biosciences instruments	All BD flow cytometers with a violet laser: BD FACSCanto II, BD FACSVerse, BD LSR platform, BD FACS Aria platform, BD Influx cell sorter
Alternative fluorochromes	BD Horizon V500, Pacific Orange™, AmCyan, Krome Orange™, VioGreen™

Marker	Stain Index	
	BD Horizon BV510	FITC
Hu CD4	219	108
Hu CD19	48	23
Ms CD4	57	31
Ms CD11c	13	11

Table 1. BD Horizon BV510 and FITC reagents of the same clone were run to compare the stain index.

Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon Brilliant™ Violet 510

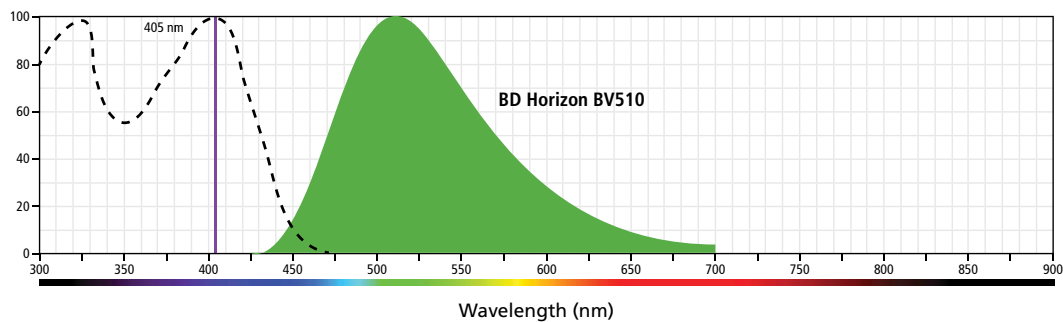


Figure 1. Excitation and emission profile of BV510.

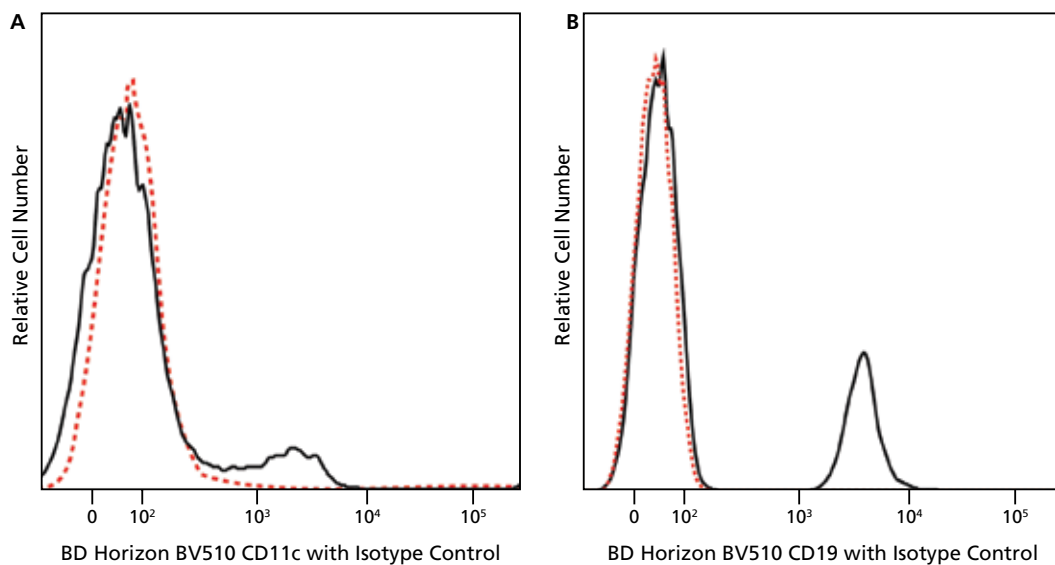


Figure 2. Panel A shows BALB/c mouse splenocytes stained with mouse CD11c BD Horizon BV510 (black line) or an isotype control (red dashed line). Panel B shows lysed whole blood stained with human CD19 BD Horizon BV510. Data shown was gated on lymphocytes and was overlaid with the isotype control.

BD Horizon Brilliant™ Violet 510

Human and Non Human Primate (NHP)

BD Horizon™ BV510

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD1a	Hu	HI149	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	563482
				FCM	RUO	BD Horizon BV510	100 Tests	563481
CD1d	Hu	CD1D42	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	563507
				FCM	RUO	BD Horizon BV510	100 Tests	563506
CD3	Hu	UCHT1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563109
		HIT3a	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	100 Tests	564713
CD4	Hu	SK3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	562971
				FCM	RUO	BD Horizon BV510	100 Tests	562970
	Hu, NHP	L200	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563094
CD5	Hu	UCHT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	563380
				FCM	RUO	BD Horizon BV510	100 Tests	563381
CD7	Hu	M-T701	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	100 Tests	563650
CD8	Hu	RPA-T8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563256
		SK1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	100 Tests	563919
CD9	Hu	M-L13	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	100 Tests	563640
CD10	Hu	HI10A	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563032
CD11a	Hu	HI111	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	563480
				FCM	RUO	BD Horizon BV510	100 Tests	563479
CD11b/Mac-1	Hu	ICRF44	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563088
CD11c	Hu	B-LY6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563026
CD14	Hu	MΦ-9	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563079
CD15	Hu	W6D3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563141
CD15s	Hu	CSLEX1	Mouse IgM, κ	FCM	RUO	BD Horizon BV510	50 Tests	563529
CD16	Hu	3G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	563829
				FCM	RUO	BD Horizon BV510	100 Tests	563830
CD19	Hu	SJ25C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	562953
				FCM	RUO	BD Horizon BV510	100 Tests	562947
CD20	Hu	2H7	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563067
		H1	Mouse IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV510	50 Tests	563347
CD24	Hu	ML5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563035
CD25	Hu	M-A251	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	563351
				FCM	RUO	BD Horizon BV510	100 Tests	563352
CD27	Hu	L128	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	563090
				FCM	RUO	BD Horizon BV510	100 Tests	563092
CD28	Hu	CD28.2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563075
CD29	Hu	MAR4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	563514
				FCM	RUO	BD Horizon BV510	100 Tests	563513
CD31	Hu	WM59	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563454
CD33	Hu	WM53	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563257
CD38	Hu	HIT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563251
CD40	Hu	5C3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563456
CD41a	Hu	HIP8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563250
CD43	Hu	1G10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	100 Tests	563377
CD44	Hu	G44-26	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563029
CD45	Bab, Cyno, Rhe	D058-1283	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563530
	Hu	HI-30	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	100 Tests	563204
CD45RA	Hu	HI100	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563031
CD45RO	Hu	UCHL1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	100 Tests	563215
CD49d	Hu	9F10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563458
CD49f	Hu	GoH3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563271
CD52	Hu	4C8	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563305
CD56	Hu	NCAM16.2	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563041

BD Horizon Brilliant™ Violet 510

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD61	Bab, Cyno, Hu, Rhe	VI-PL2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	100 Tests	563303
CD62L	Hu	DREG-56	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563203
CD64	Hu	10.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	100 Tests	563459
CD73	Hu	AD2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	100 Tests	563198
CD77	Hu	5B5	Mouse IgM, κ	FCM	RUO	BD Horizon BV510	100 Tests	563630
CD80	Hu	L307.4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563084
CD83	Hu	HB15E	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563223
CD86	Hu	2331 (FUN-1)	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	25 Tests	563460
				FCM	RUO	BD Horizon BV510	100 Tests	563461
CD90	Hu	5E10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563070
CD105	Hu	266	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563264
CD107a	Hu	H4A3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563078
CD122	Hu	Mik-β3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563093
CD123	Hu	9F5	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563072
CD127	Hu	HIL-7R-M21	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563086
CD132	Hu	TUGH4	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563446
CD138	Hu	MI15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563091
CD141	Hu	1A4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563298
CD146	Hu	P1H12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563255
CD147	Hu	HIM6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563249
CD161	Hu	DX12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563212
CD193	Hu	5.00E+08	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563071
CD194	Hu	1G1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563066
CD196	Hu	11A9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563241
CD197	Hu	3D12	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563449
CD200	Hu	MRC OX-104	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563254
CD201	Hu	RCR-252	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV510	100 Tests	563624
CD203c	Hu	NP4D6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563297
CD238	Hu	BRIC 203	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563475
CD271	Hu	C40-1457	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563451
CD279 (PD-1)	Hu	EH12.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563076
CD314	Hu	1D11	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563266
CD326	Hu	EBA-1	Mouse IgG1, λ	FCM	RUO	BD Horizon BV510	50 Tests	563181
CD335 (NKp46)	Hu	9E2/NKp46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	564064
BrdU	Hu, Ms	3D4	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV510	50 Tests	563445
CXCR5	Hu	Rf8B2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563105
Cytokeratin	Hu	CAM5.2	Mouse IgG _{2a}	IC/FCM	RUO	BD Horizon BV510	50 Tests	563613
Disialylganglioside GD2	Hu	14.G2A	Mouse IgG _{2a}	FCM	RUO	BD Horizon BV510	50 Tests	563440
EGF Receptor	Hu	EGFR.1	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563344
Granzyme B	Hu	GB11	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV510	50 Tests	563388
HLA-DR	Hu	G46-6	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563083
IFN _γ	Hu	B27	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV510	50 Tests	563287
Ig, κ light chain	Hu	G20-193	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563213
Ig, λ light chain	Hu	JDC-12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563537
IgD	Hu	IA6-2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563034
IgG	Hu	G18-145	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563247
IgM	Hu	G20-127	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563113
IL-2	Hu	5,344,111	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV510	50 Tests	563265
		MQ1-17H12	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV510	100 Tests	564167
IL-8	Hu	G265-8	Mouse IgG _{2b}	IC/FCM	RUO	BD Horizon BV510	50 Tests	563311
IL-17A	Hu	N49-653	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV510	50 Tests	563295
Invariant NK T-cell	Hu	6B11	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563267

BD Horizon Brilliant™ Violet 510

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Ki-67	Hu	B56	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV510	50 Tests	563462
Lgr5 (N-terminal)	Hu	8F2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 Tests	563211
Oct-3/4	Hu, Ms	40/OCT-3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563524
Pax-5	Hu, Ms	1H9	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV510	50 Tests	563191
TCR αβ	Hu	T10B9.1A-31	Mouse IgM, κ	FCM	RUO	BD Horizon BV510	100 Tests	563625
Tra-1-60	Hu	TRA-1-60	Mouse IgM, κ	FCM	RUO	BD Horizon BV510	50 Tests	563188
Trop-2	Hu	162-46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 µg	563244
TSLP Receptor	Hu	1F11/TSLPR	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563340

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD1d	Ms	1B1	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563189
CD3e	Ms	145-2C11	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV510	50 µg	563024
CD4	Ms	RM4-5	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563106
CD5	Ms	53-7.3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563069
CD8a	Ms	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563068
CD11a	Ms	M17/4	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563669
CD11b	Ms	M1/70	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	562950
CD11c	Ms	HL3	Ar Ham IgG1, λ2	FCM	RUO	BD Horizon BV510	50 µg	562949
CD19	Ms	1D3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	562956
CD21/CD35	Ms	7G6	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563175
CD23	Ms	B3B4	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563200
CD24	Ms	M1/69	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563115
CD25	Ms	PC61	Rat IgG ₁ , λ	FCM	RUO	BD Horizon BV510	50 µg	563037
CD27	Ms	LG.3A10	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV510	50 µg	563605
CD31	Ms	MEC 13.3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563089
CD43	Ms	S7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	100 µg	563206
CD44	Ms	IM7	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563114
CD45	Ms	30-F11	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563891
CD45R/B220	Ms	RA3-6B2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563103
CD48	Ms	HM48-1	Ar Ham IgG1, λ3	FCM	RUO	BD Horizon BV510	50 µg	563536
CD54	Ms	3E2	Ar Ham IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 µg	563628
CD62L	Ms	MEL-14	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563117
CD69	Ms	H1.2F3	Ar Ham IgG1, λ3	FCM	RUO	BD Horizon BV510	50 µg	563030
CD71	Ms	C2	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 µg	563112
CD83	Ms	MICHEL-19	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 µg	563222
CD86	Ms	GL1	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563077
CD95	Ms	JO2	Ar Ham IgG2, λ2	FCM	RUO	BD Horizon BV510	50 µg	563646
CD103	Ms	M290	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563087
CD127	Ms	SB/199	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563353
CD138	Ms	2B1-2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563192
CD162	Ms	2PH1	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 µg	563448
CD184	Ms	2B11/CXCR4	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563468
CD326	Ms	G8.8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563216
CD335 (Nkp46)	Ms	29A1.4	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563455
GITR Ligand	Ms	MIH44	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563367
F4/80-Like Receptor	Ms	6F12	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563633

BD Horizon Brilliant™ Violet 510

Mouse continued

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
IgD	Ms	11-26C.2A	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563110
IgE	Ms	R35-72	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 µg	563097
IgM	Ms	R6-60.2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563118
IL-10	Ms	JE55-16E3	Rat IgG _{2b}	IC/FCM	RUO	BD Horizon BV510	50 µg	563277
IL-17A	Ms	TC11-18H10	Rat IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV510	50 µg	564168
Ly-6G	Ms	RB6-8C5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563040
NK-1.1	Ms	PK136	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV510	50 µg	563096
Oct-3/4	Hu, Ms	40/OCT-3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV510	50 Tests	563524
Pax-5	Hu, Ms	1H9	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV510	50 Tests	563191
TCR β Chain	Ms	H57-597	Ar Ham IgG2, λ1	FCM	RUO	BD Horizon BV510	50 µg	563221
TCR γδ	Ms	GL3	Ar Ham IgG2, κ	FCM	RUO	BD Horizon BV510	50 µg	563218
TER-119/Erythroid Cells	Ms	TER-119	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV510	50 µg	563995
TNF	Ms	MP6-XT22	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV510	50 µg	563386

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Ham IgG1, κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563197
Hamster IgG1, λ	G235-2356	Ar Ham IgG1, λ1	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	562954
Hamster IgG2, κ	B81-3	Ar Ham IgG2, κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563202
Hamster IgG2, λ	HA4/8	Ar Ham IgG2, λ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563085
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	562946
Mouse IgG2a, κ	G155-178	Mouse IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563027
	MOPC-173	Mouse IgG _{2a} , κ	IC/FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563483
Mouse IgG2b, κ	27-35	Mouse IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563025
Mouse IgG3, κ	J606	Mouse IgG ₃ , κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563273
Mouse IgM, κ	G155-228	Mouse IgM, κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563082
Rat IgG1, κ	R3-34	Rat IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563039
Rat IgG1, λ	A110-1	Rat IgG ₁ , λ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563270
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	562952
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	562951
Rat IgM, κ	R4-22	Rat IgM, κ	FCM, ICtrl	RUO	BD Horizon BV510	50 µg	563080

BD Horizon Brilliant™ Violet 605

The BD Horizon Brilliant™ Violet 605 (BV605) dye provides an additional bright color choice for the violet laser.

BV605 is a tandem fluorochrome consisting of BV421 and an acceptor dye with an emission maximum of 602 nm. The BV605 antibody conjugates show brightness similar to equivalent PE reagents, providing an additional bright dye choice for the violet laser (Table 1). With an excitation maximum of 407 nm and emission maximum of 602 nm, BV605 is excited by the violet laser and can be detected with standard filter sets (Figure 1).

Multicolor considerations

Due to the excitation of the acceptor dye by the green (532-nm) and yellow-green (561-nm) lasers, there will be significant spillover into the PE and BD Horizon™ PE-CF594 detectors off the green or yellow-green lasers. Additionally, there will be spectral overlap into the BV510 and BV650 detectors. However, the spillover can be corrected through compensation as with any other dye combination.

BD Horizon™ BV605	
Relative Brightness	Bright
Ex (max)	405 nm
Em (max)	602 nm
Filter	610/20
Compatible BD Biosciences instruments	All BD flow cytometers with a violet laser, 3 PMTs minimum, and an appropriate filter: BD LSR platform, BD FACSAria platform, BD Influx cell sorter
Alternative fluorochromes	Qdot® 605, eFluor® 605NC

Specificity	Clone	Fluorochrome	Stain Index
CD4	RPA-T4	BV605	225
		PE	196
CD19	SJ25C1	BV605	142
		PE	85
CD27	L128	BV605	149
		PE	82
CD38	HB7	BV605	18
		PE	18
CD127	hIL-7R-M21	BV605	9.5
		PE	16

Table 1. Stain Index comparison. Lysed whole blood stained with human CD4, CD19, CD27, CD38, or CD127 BV605 or PE, run on a BD™ LSR II flow cytometer (using a 610/20-nm filter on the violet laser and a 575/26-nm filter on the blue laser).

All conjugates were run at optimal concentration. Data shown was gated on lymphocytes. Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon Brilliant™ Violet 605

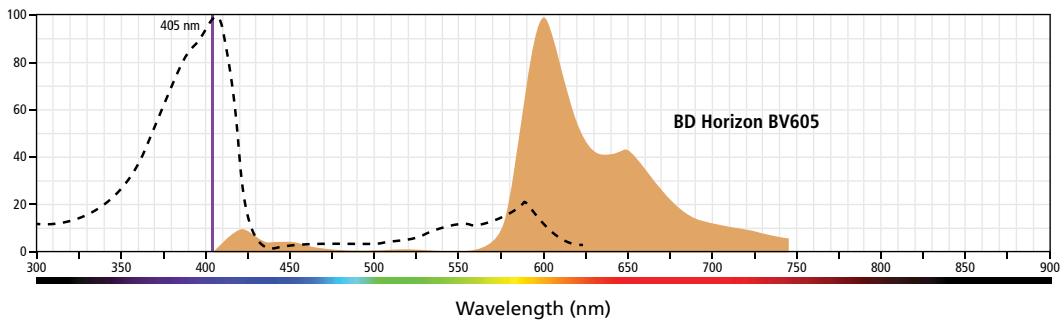


Figure 1. Excitation and emission profile of BV605.

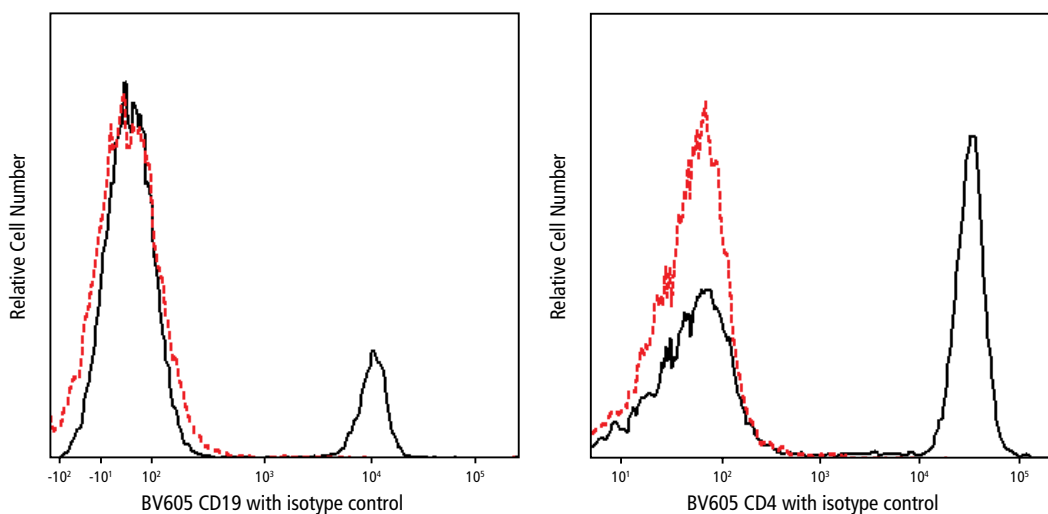


Figure 2. Lysed whole blood stained with human CD19 or CD4 BV605. Data shown was gated on lymphocytes and was overlaid with the isotype control.

BD Horizon Brilliant™ Violet 605

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3	Bab, Cyno, Hu, Rhe	SP34-2	Mouse IgG ₁ , λ	FCM	RUO	BD Horizon BV605	50 Tests	562994
	Hu	HIT3a	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	100 Tests	564712
	Hu	SK7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	563217
				FCM	RUO	BD Horizon BV605	100 Tests	563219
CD4	Bab, Cyno, Rhe	L200	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562843
	Hu	RPA-T4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	562659
				FCM	RUO	BD Horizon BV605	100 Tests	562658
CD5	Hu	UCHT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	563945
CD8	Bab, Cyno, Hu, Rhe	SK1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	564115
		SK1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	564116
CD10	Hu	HI10A	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	562978
CD11b/Mac-1	Hu	ICRF44	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	562723
				FCM	RUO	BD Horizon BV605	100 Tests	562721
CD11c	Hu	B-ly6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	563930
				FCM	RUO	BD Horizon BV605	100 Tests	563929
CD14	Hu	M5E2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	100 Tests	564054
				FCM	RUO	BD Horizon BV605	25 Tests	564055
CD15	Hu	W6D3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	562979
				FCM	RUO	BD Horizon BV605	100 Tests	562980
CD16	Hu	3G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	563173
				FCM	RUO	BD Horizon BV605	100 Tests	563172
CD19	Hu	SJ25C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	562654
				FCM	RUO	BD Horizon BV605	100 Tests	562653
CD20	Hu	2H7	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	100 Tests	563783
CD24	Hu	ML5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	100 Tests	562788
CD25	Hu	2A3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	562661
				FCM	RUO	BD Horizon BV605	100 Tests	562660
CD27	Hu	L128	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	562656
				FCM	RUO	BD Horizon BV605	100 Tests	562655
CD28	Hu	CD28.2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	562976
CD31	Hu	WM59	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562855
CD36	Hu	CB38	Mouse IgM, κ	FCM	RUO	BD Horizon BV605	100 Tests	563518
CD38	Hu	HB7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	562666
				FCM	RUO	BD Horizon BV605	100 Tests	562665
CD43	Hu	1G10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	563378
CD44	Hu	G44-26	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	100 Tests	562991
CD45	Bab, Cyno, Rhe	D058-1283	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	564098
	Hu	HI30	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	564048
				FCM	RUO	BD Horizon BV605	100 Tests	564047
CD45RA	Hu	HI100	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 Tests	562886
CD45RO	Hu	UCHL1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	25 Tests	562790
				FCM	RUO	BD Horizon BV605	100 Tests	562791
CD47	Hu	B6H12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	563759
CD56	Hu	NCAM16.2	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	25 Tests	562779
				FCM	RUO	BD Horizon BV605	100 Tests	562780
CD57	Hu	NK-1	Mouse IgM, κ	FCM	RUO	BD Horizon BV605	50 Tests	563895
CD58	Dog, Hu	1C3	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	100 Tests	564362
CD62E	Hu	68-5H11	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	563359
CD62L	Hu	DREG-56	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	562720
				FCM	RUO	BD Horizon BV605	100 Tests	562719
CD69	Hu	FN50	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	562989
CD73	Hu	AD2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	563199
CD80	Hu	L307.4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	563315

BD Horizon Brilliant™ Violet 605

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD86	Hu	2331 (FUN-1)	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	562999
CD90	Hu	5E10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	25 Tests	562686
				FCM	RUO	BD Horizon BV605	100 Tests	562685
CD105	Hu	266	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562664
CD106	Hu	51-10C9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	563307
CD117	Hu	104D2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562687
CD123	Hu	7G3	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 Tests	564197
CD127	Hu	HIL-7R-M21	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562662
CD138	Hu	MI15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	563294
CD147	Hu	HIM6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	563248
CD161	Hu	DX12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	563863
CD183	Bab, Cyno, Hu, Rhe	1C6/CXCR3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	564032
CD193	Hu	5E8	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 Tests	564188
CD194	Hu	1G1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562906
CD195	Hu	2D7/CCR5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 Tests	563379
CD196 (CCR6)	Hu	11A9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562724
CD197 (CCR7)	Hu	3D12	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 Tests	563711
CD200	Hu	MRC OX-104	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562853
CD279 (PD-1)	Hu	EH12.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	563245
CD326	Hhu	EBA-1	Mouse IgG ₁ , λ	FCM	RUO	BD Horizon BV605	50 Tests	563182
CD337 (NKP30)	Hu	p30-15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	100 Tests	563384
Active Caspase-3	Hu, Ms	C92-605	Rabbit IgG	IC/FCM	RUO	BD Horizon BV605	100 Tests	564094
Annexin V	Hu			FCM	RUO	BD Horizon BV605	100 Tests	563974
Cutaneous Lymphocyte Antigen								
	Hu	HECA-452	Rat IgM, κ	FCM	RUO	BD Horizon BV605	100 Tests	563960
HLA-DR	Hu	G46-6	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	25 Tests	562844
				FCM	RUO	BD Horizon BV605	100 Tests	562845
IFN _γ	Hu	B27	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV605	50 Tests	562974
Ig, κ light chain	Hu	G20-193	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562851
Ig, λ light chain	Hu	JDC-12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	563292
IgD	Hu	IA6-2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 Tests	563313
IgG	Hu	G18-145	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	563246
IgM	Hu	G20-127	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	562977
IL-2	Hu	5344.111	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV605	50 Tests	563947
		MQ1-17H12	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV605	100 Tests	564165
IL-10	Hu, Vir	JES3-9D7	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV605	50 Tests	564052
Integrin β7	Hu, Ms	FIB504	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	100 Tests	564284
SSEA-4	Hu	MC813-70	Mouse IgG ₃ , κ	FCM	RUO	BD Horizon BV605	50 Tests	563119
TNF	Hu	MAb11	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV605	50 Tests	563915
Tra-1-60	Hu	TRA-1-60	Mouse IgM, κ	FCM	RUO	BD Horizon BV605	50 Tests	563187
TSLP Receptor	Hu	1F11/TSLPR	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 Tests	563341

BD Horizon Brilliant™ Violet 605

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3e	Ms	145-2C11	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV605	50 µg	563004
CD3 Molecular Complex	Ms	17A2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	564009
CD4	Ms	RM4-5	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563151
CD5	Ms	53-7.3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563194
CD8a	Ms	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563152
CD11b	Ms	M1/70	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563015
CD11c	Ms	HL3	Ar Ham IgG1, λ2	FCM	RUO	BD Horizon BV605	50 µg	563057
CD16/CD32	Ms	2.4G2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563006
CD19	Ms	1D3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563148
CD21/CD35	Ms	7G6	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563176
CD23	Ms	B3B4	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563201
CD24	Ms	M1/69	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563060
CD25	Ms	PC61	Rat IgG ₁ , λ	FCM	RUO	BD Horizon BV605	50 µg	563061
CD27	Ms	LG.3A10	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV605	50 µg	563365
CD41	Ms	MWREG30	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 µg	563317
CD43	Ms	S7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	100 µg	563205
CD44	Ms	IM7	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563058
CD45	Ms	30-F11	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563053
CD45.1	Ms	A20	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563010
CD45.2	Ms	104	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563051
CD45R/B220	Ms	RA3-6B2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563708
CD62L	Ms	MEL-14	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563252
CD69	Ms	H1.2F3	Ar Ham IgG1, λ	FCM	RUO	BD Horizon BV605	50 µg	563290
CD71	Ms	C2	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 µg	563013
CD83	Ms	MICHEL-19	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 µg	563253
CD86	Ms	GL1	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563055
CD90.2	Ms	53-2.1	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563008
CD117	Ms	2B8	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563146
CD138	Ms	2B1-2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563147
CD279 (PD-1)	Ms	J43	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563059
CD335	Ms	29A1.4	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	564069
Active Caspase-3	Hu, Ms	C92-605	Rabbit IgG	IC/FCM	RUO	BD Horizon BV605	100 Tests	564094
Erythroid Cells	Ms	TER-119	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563323
I-A/I-E	Ms	M5/114.15.2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563413
IgD	Ms	11-26C.2A	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563003
IgG1	Ms	A85-1	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV605	50 µg	563285
IgG2a	Ms	R19-15	Rat IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV605	50 µg	564024
IL-2	Ms	JES6-SH4	Rat IgG _{2b}	IC/FCM	RUO	BD Horizon BV605	50 µg	563911
IL-4	Ms	11B11	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV605	50 µg	564007
IL-10	Ms	JES5-16E3	Rat IgG _{2b}	IC/FCM	RUO	BD Horizon BV605	50 µg	564082
IL-17A	Ms	TC11-18H10	Rat IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV605	50 µg	564169
Integrin β7	Hu, Ms	FIB504	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	100 Tests	564284
KLRG1	Ms	2F1	Syr Ham IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	564013
Ly-6A/E	Ms	D7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563288
Ly6C	Ms	AL-21	Rat IgM, κ	FCM	RUO	BD Horizon BV605	50 µg	563011
Ly6G	Ms	1A8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563005
Ly-6G/Ly-6C	Ms	RB6-8C5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV605	50 µg	563299
NK-1.1	Ms	PK136	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	563220
NKG2A/C/E	Ms	20d5	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV605	50 µg	564382
TCR β Chain	Ms	H57-597	Ar Ham IgG _{2a} , λ1	FCM	RUO	BD Horizon BV605	50 µg	562840
Vα2 TCR	Ms	B20.1	Rat IgG _{2a} , λ	FCM	RUO	BD Horizon BV605	50 µg	563286

BD Horizon Brilliant™ Violet 605

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Ham IgG1, κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563009
Hamster IgG1, λ	G235-2356	Ar Ham IgG1, λ1	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563054
Hamster IgG2, κ	B81-3	Ar Ham IgG2, κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563012
Hamster IgG2, λ	HA4/8	Ar Ham IgG2, λ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563056
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	562652
Mouse IgG2b, κ	MPC-11	Mouse IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563099
Mouse IgG3, κ	J606	Mouse IgG ₃ , κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563274
Mouse IgM	G155-228	Mouse IgM, κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563517
Rat IgG1, κ	R3-34	Rat IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	562993
Rat IgG1, λ	A110-1	Rat IgG ₁ , λ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	562987
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563144
Rat IgG2a, λ	B39-4	Rat IgG _{2a} , λ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	562998
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563145
Rat IgM, κ	R4-22	Rat IgM, κ	FCM, ICtrl	RUO	BD Horizon BV605	50 µg	563062

BD Horizon Brilliant™ Violet 650

BD Horizon Brilliant™ Violet 650 (BV650) is the fourth dye in the BD Horizon Brilliant Violet family of dyes, providing more options for multicolor panel design.

BV650 is a tandem fluorochrome of BV421 and an acceptor dye with an emission maximum of 650 nm. It can be excited by the violet laser and detected in a filter used to detect APC-like dyes (for example, a 660/20-nm filter) (Figure 1). Not only does BV650 provide an additional choice for multicolor panel design, its brightness makes it an optimal choice for dim markers such as CD127 (Figure 2).

Multicolor considerations

Due to the excitation and emission characteristics of the acceptor dye, there might be moderate spillover into the APC and Alexa Fluor® 700 detectors. However, the spillover can be corrected through compensation, as with any other dye combination.

BD Horizon™ BV650	
Relative Brightness	Very Bright
Ex (max)	405 nm
Em (max)	650 nm
Filter	660/20
Compatible BD Biosciences instruments	All BD flow cytometers with a violet laser, 3 PMTs minimum, and an appropriate filter: BD LSR platform, BD FACSAria platform, BD Influx cell sorter
Alternative fluorochromes	Qdot® 655, eFluor® 650NC

Specificity	Stain Index	
	BD Horizon BV650	PE
Human CD127	15	6

Table 1. Stain index comparison of CD127 stained with BV650 and PE reagents. Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon Brilliant™ Violet 650

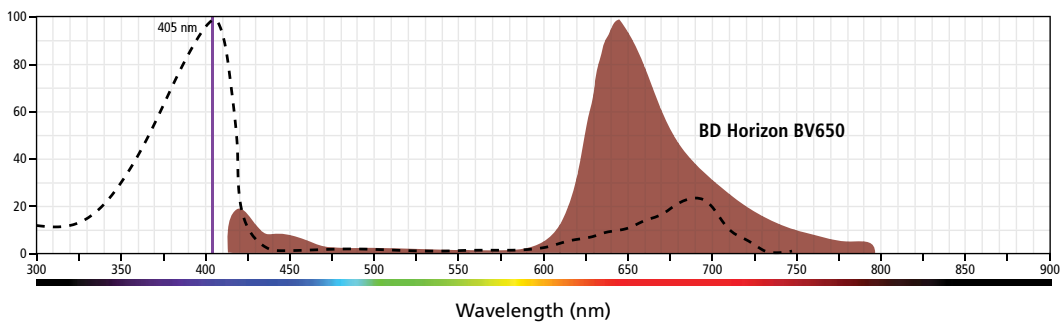


Figure 1. Excitation and emission profile of BV650.

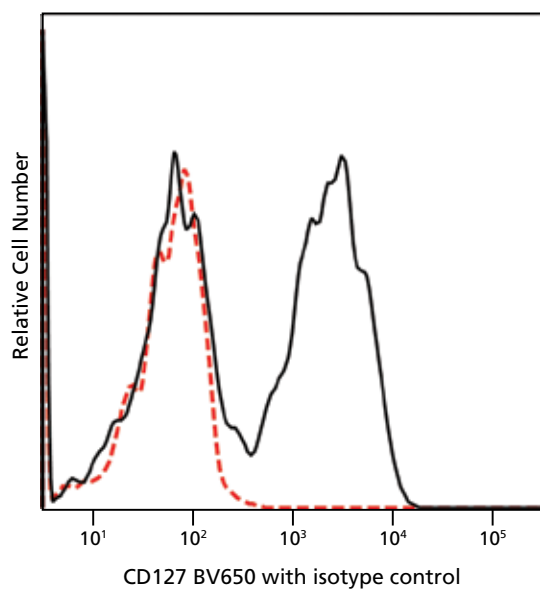


Figure 2. Lysed whole blood stained with human CD127 BV650. Data shown was gated on lymphocytes and overlaid with the isotype control.

BD Horizon Brilliant™ Violet 650

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3	Hu	UCHT1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	25 Tests	563851
				FCM	RUO	BD Horizon BV650	100 Tests	563852
	Hu, NHP	SP34-2	Mouse IgG ₁ , λ	FCM	RUO	BD Horizon BV650	50 Tests	563916
	Hu	SK7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	25 Tests	564003
				FCM	RUO	BD Horizon BV650	100 Tests	563999
CD4	Hu, NHP	L200	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	563737
	Hu	SK3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563875
				FCM	RUO	BD Horizon BV650	25 Tests	563876
CD8	Hu	RPA-T8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	25 Tests	563822
				FCM	RUO	BD Horizon BV650	100 Tests	563821
CD10	Hu	HI10A	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563734
CD11a	Bab, Cyno, Hu, Rhe	HI111	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563934
CD11c	Hu	B-LY6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	25 Tests	563403
				FCM	RUO	BD Horizon BV650	100 Tests	563404
CD14	Hu	M5E2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	25 Tests	563420
				FCM	RUO	BD Horizon BV650	100 Tests	563419
CD15	Hu	HI98	Mouse IgM, κ	FCM	RUO	BD Horizon BV650	100 Tests	564232
CD16	Hu	3G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	25 Tests	563691
				FCM	RUO	BD Horizon BV650	100 Tests	563692
CD19	Hu	SJ25-C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	25 Tests	563227
				FCM	RUO	BD Horizon BV650	100 Tests	563226
CD20	Hu	2H7	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV650	25 Tests	563779
				FCM	RUO	BD Horizon BV650	100 Tests	563780
CD24	Hu	ML5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	100 Tests	563720
CD25	Hu	M-A251	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	25 Tests	563718
				FCM	RUO	BD Horizon BV650	100 Tests	563719
CD27	Hu	L128	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	25 Tests	563229
				FCM	RUO	BD Horizon BV650	100 Tests	563228
CD39	Hu	TU66	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV650	100 Tests	563681
CD45	Hu	HI30	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563717
CD45RA	Hu	HI100	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV650	50 Tests	563963
CD45RO	Hu	UCHL1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	25 Tests	563749
				FCM	RUO	BD Horizon BV650	100 Tests	563750
CD49f	Hu	GOH3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	25 Tests	563706
				FCM	RUO	BD Horizon BV650	100 Tests	563707
CD56	Hu	NCAM16.2	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV650	100 Tests	564057
CD61	Hu	VI-PL2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	564172
CD62L	Hu	DREG-56	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563808
CD62P	Hu	AK-4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	564036
				FCM	RUO	BD Horizon BV650	25 Tests	564035
CD69	Hu	FN50	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563835
CD80	Hu	L307.4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	564158
CD86	Hu	2331 (FUN-1)	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	25 Tests	563411
				FCM	RUO	BD Horizon BV650	100 Tests	563412
CD105	Hu	266	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	563466
CD116	Hu	hGMCSFR-M1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 µg	564044
CD117	Hu	104D2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563859
CD123	Hu	7G3	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 Tests	563405
CD127	Hu	HIL-7R-M21	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	563225
CD130	Hu	AM64	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	564154
CD132	Hu	TUGH4	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV650	50 Tests	563406
CD134	Hu	ACT35	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	563658

BD Horizon Brilliant™ Violet 650

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD135	Hu	4G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563909
CD137	Hu	4B4-1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	564092
CD158e1 (NKB1)	Hu	DX9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	564101
CD161	Hu	DX12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563864
CD163	Hu	GHI/61	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563888
CD196 (CCR6)	Hu	11A9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	563922
CD197 (CCR7)	Hu	3D12	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 Tests	563407
CD273	Hu	MIH18	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563844
CD274	Hu	MIH1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	563740
CD278	Hu	DX29	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	563832
CD279 (PD-1)	Hu	EH12.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	564104
		MIH4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	100 Tests	564324
CD314 (NKG2D)	Hu	1D11	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	563408
CD335 (NKP46)	Hu	9E2/NKP46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 Tests	563230
Active Caspase-3	Hu, Ms	C92-605	Rabbit IgG	IC/FCM	RUO	BD Horizon BV650	100 Tests	564096
Disialoganglioside GD2	Hu	14.G2a	Mouse IgG _{2b}	FCM	RUO	BD Horizon BV650	50 Tests	563705
HLA-DR	Hu	G46-6	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	100 Tests	564231
IFN _γ	Hu	4S.B3	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	50 Tests	563416
IL-2	Hu	5344.111	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	50 Tests	563467
		MQ1-17H12	Mouse IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV650	100 Tests	564166
IL-10	Hu, Vir	JES3-9D7	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV650	50 Tests	564051
IL-17A	Hu	N49-653	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	50 Tests	563746
IL-17F	Hu	O33-782	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	100 Tests	564264
Integrin β7	Hu, Ms	FIB504	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	100 Tests	564285
Ki-67	Hu	B56	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	50 Tests	563757
ROR _γ t	Hu	Q21-559	Mouse IgG _{2b} , κ	IC/FCM	RUO	BD Horizon BV650	50 Tests	563424
T-bet	Hu, Ms	O4-46	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	50 Tests	564142
TCR γδ	Hu	B1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 µg	564156
TNF	Hu	MAB11	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	50 Tests	563418

BD Horizon Brilliant™ Violet 650

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3e	Ms	145-2C11	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV650	50 µg	564378
CD4	Ms	GK1.5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV650	50 µg	563232
		RM4-5	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563747
CD8a	Ms	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563234
CD9	Ms	KMC8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	564236
CD11b	Ms	M1/70	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563402
CD11c	Ms	HL3	Ar Ham IgG1, λ2	FCM	RUO	BD Horizon BV650	50 µg	564079
CD19	Ms	1D3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563235
CD24	Ms	M1/69	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563545
CD25	Ms	PC61	Rat IgG ₁ , λ	FCM	RUO	BD Horizon BV650	50 µg	564021
CD45	Ms	30-F11	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563410
CD45.1	Ms	A20	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563754
CD45RA	Ms	14.8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	564360
CD45R/B220	Ms	RA3-6B2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563893
CD62L	Ms	MEL-14	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	564108
CD62P	Ms	RB40.34	Rat IgG ₁ , λ	FCM	RUO	BD Horizon BV650	50 µg	563897
CD80	Ms	16-10A1	Ar Ham IgG2, κ	FCM	RUO	BD Horizon BV650	50 µg	563687
CD86	Ms	GL1	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	564200
CD90.1	Ms, Rat	OX-7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 µg	563771
CD93	Ms	AA4.1	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV650	50 µg	563807
CD117	Ms	2B8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563399
CD138	Ms	281-2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	564068
CD197	Ms	4B12	Rat IgG _{2a}	FCM	RUO	BD Horizon BV650	50 µg	564356
Active Caspase-3	Hu, Ms	C92-605	Rabbit IgG	IC/FCM	RUO	BD Horizon BV650	100 Tests	564096
CXCR5	Ms	2G8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563981
Erythroid cells	Ms	TER-119	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV650	50 µg	563850
I-A/I-E	Ms	M5/114.15.2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV650	50 µg	563415
IFN _γ	Ms	XMG1.2	Rat IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	50 µg	563854
IgE	Ms	R35-72	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV650	50 µg	564208
IgM	Ms	R6-60.2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	564027
IL-4	Ms	11B11	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV650	50 µg	564004
IL-10	Ms	JES5-16E3	Rat IgG _{2b}	IC/FCM	RUO	BD Horizon BV650	50 µg	564083
IL-17A	Ms	TC11-18H10	Rat IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	50 µg	564170
NK-1.1	Ms	PK136	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	564143
ROR _γ t	Ms	Q31-378	Mouse IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV650	50 µg	564722
T-bet	Hu, Ms	O4-46	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV650	50 Tests	564142
TNF	Ms	MP6-XT22	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV650	50 µg	563943
γδ T-Cell Receptor	Ms	GL3	Ar Ham IgG _{2a} , κ	FCM	RUO	BD Horizon BV650	50 µg	563993

BD Horizon Brilliant™ Violet 650

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Ham IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	564388
Hamster IgG1, λ1	G235-2356	Ar Ham IgG1, λ1	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	564074
Hamster IgG2, κ	B81-3	Ar Ham IgG2, κ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	563860
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	563231
Mouse IgG2a, κ	G155-178	Mouse IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	563417
Mouse IgG2b, κ	27-35	Mouse IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	563437
Mouse IgM, κ	G155-228	Mouse IgM, κ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	564367
Rat IgG1, κ	R3-34	Rat IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	563848
Rat IgG1, λ	A110-1	Rat IgG ₁ , λ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	563906
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	563236
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV650	50 µg	563233

BD Horizon Brilliant™ Violet 711

BD Horizon Brilliant™ Violet 711 (BV711), the fifth dye in the BD Horizon Brilliant Violet family of dyes, offers an additional bright choice for the violet laser.

BV711 is a tandem fluorochrome of BV421 and an acceptor dye with an emission maximum at 711 nm. It can be excited by the violet laser and detected in a filter used to detect Cy™5.5 and Alexa Fluor® 700-like dyes (for example, a 710/50-nm filter) (Figure 1). Not only does BV711 provide an additional choice for multicolor panel design, its brightness makes it an optimal choice for dim markers such as CD335 (NKp46) and CD19 (Figure 2).

Multicolor considerations

BV711 will have moderate spillover into the BV650 detector. Because of the excitation and emission characteristics of the acceptor dye, there might 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.

BD Horizon™ BV711	
Relative Brightness	Very Bright
Ex (max)	405 nm
Em (max)	711 nm
Filter	710/50
Compatible BD Biosciences instruments	All BD flow cytometers with a violet laser, 3 PMTs minimum and an appropriate filter: BD™ LSR platform, BD FACSAria™ platform, BD Influx™ cell sorter
Alternative fluorochromes	Qdot® 705, eFluor® 700NC

Specificity	Stain Index	
	BD Horizon BV711	FITC
Human CD4	256	45
Human CD19	131	22

Table 1. Stain index comparison of CD4 and CD19 stained with BV711 and FITC reagents.

Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon Brilliant™ Violet 711

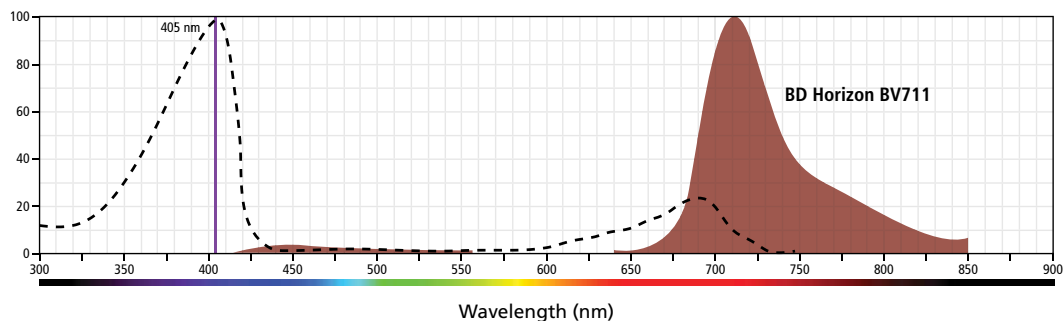


Figure 1. Excitation and emission profile of BV711.

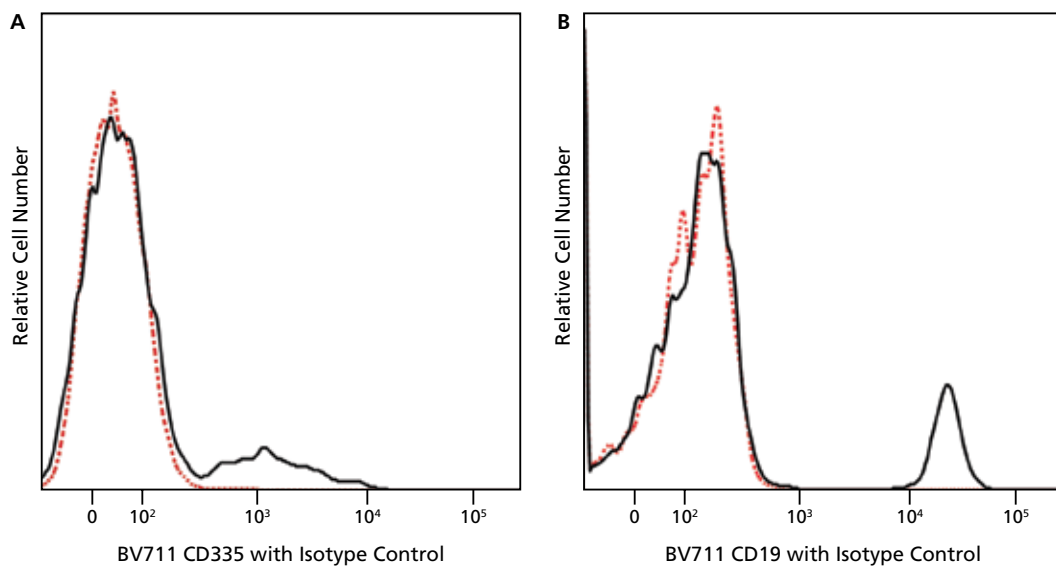


Figure 2. Lysed whole blood stained with human CD335 (NKp46) BV711 (A) or CD19 BV711 (B). Data shown was gated on lymphocytes and overlaid with the isotype control.

BD Horizon Brilliant™ Violet 711

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3	Hu	UCHT1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	25 Tests	563724
				FCM	RUO	BD Horizon BV711	100 Tests	563725
CD4	Hu	SK3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	25 Tests	563033
				FCM	RUO	BD Horizon BV711	100 Tests	563028
	Hu, NHP	L200	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563913
CD5	Hu	UCHT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563170
CD7	Hu	M-T701	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	564018
CD8	Hu	RPA-T8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	25 Tests	563676
				FCM	RUO	BD Horizon BV711	100 Tests	563677
CD11a	Bab, Cyno, Hu, Rhe	HI111	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	563935
CD11c	Hu	B-LY6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563130
CD14	Hu	MqP9	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	25 Tests	563373
				FCM	RUO	BD Horizon BV711	100 Tests	563372
CD15	Hu	W6D3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563142
CD15s	Hu	CSLEX1	Mouse IgM, κ	FCM	RUO	BD Horizon BV711	50 Tests	563910
CD16	Hu	3G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563127
CD19	Hu	SJ25C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	25 Tests	563038
				FCM	RUO	BD Horizon BV711	100 Tests	563036
CD20	Hu	2H7	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 Tests	563126
CD21	Hu	B-LY4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563163
CD24	Hu	ML5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	25 Tests	563371
				FCM	RUO	BD Horizon BV711	100 Tests	563401
CD25	Hu	2A3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563159
CD27	Hu	L128	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563167
CD28	Hu	CD28.2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563131
CD33	Hu	WM53	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563171
CD38	Hu	HIT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	563965
CD39	Hu	TU66	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	100 Tests	563680
CD40	Hu	5C3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563397
CD45	Hu	HI30	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	25 Tests	564358
				FCM	RUO	BD Horizon BV711	100 Tests	564357
CD45RA	Hu	HI100	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 Tests	563733
CD45RO	Hu	UCHL1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	25 Tests	563723
				FCM	RUO	BD Horizon BV711	100 Tests	563722
CD47	Hu	B6H12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	563761
CD49d	Hu	9F10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563177
CD54	Hu	HA58	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	564078
CD56	Hu	NCAM16.2	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 Tests	563169
CD62E	Hu	68-5H11	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	563358
CD69	Hu	FN50	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	563836
CD71	Hu	M-A712	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 Tests	563767
CD86	Hu	2331 (FUN-1)	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563158
CD95	Hu	DX2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563132
CD96	Hu	6F9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563174
CD103	Hu	BER-ACT8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563162
CD123	Hu	9F5	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563161
CD127	Hu	HIL-7R-M21	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563165
CD132	Hu	AG184	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563129
CD134	Hu	ACT35	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563664
CD135	Hu	4G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	563908
CD138	Hu	MI15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563184
CD141	Hu	1A4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563155
CD146	Hu	P1H12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563186
CD158a	Hu	HP-3E4	Mouse IgM, κ	FCM	RUO	BD Horizon BV711	50 Tests	563183

BD Horizon Brilliant™ Violet 711

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD158e1 (NKB1)	Hu	DX9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	564102
CD161	Hu	DX12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	563865
CD163	Hu	GHI/61	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	563889
CD183	Hu	1C6/CXCR3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563156
CD195	Hu	2D7/CCR5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 Tests	563395
CD196 (CCR6)	Hu	11A9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563923
CD197 (CCR7)	Hu	3D12	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 Tests	563712
		150503	Mouse IgG _{2a}	FCM	RUO	BD Horizon BV711	50 Tests	563921
CD273	Hu	MIH18	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	564258
CD278	Hu	DX29	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563833
CD279 (PD-1)	Hu	EH12.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	564017
CD314 (NKG2D)	Hu	1D11	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563688
CD335 (NKP46)	Hu	9E2/NKP46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563043
CD337 (NKP30)	Hu	P30-15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	100 Tests	563383
Annexin V	Hu			FCM	RUO	BD Horizon BV711	100 Tests	563972
GARP	Hu	7B11	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	100 Tests	563958
HLA-DR	Hu	G46-6	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 Tests	563696
IFN-γ	Hu	B27	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV711	50 Tests	564039
IL-2	Hu	5344.111	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV711	50 Tests	563946
IL-4	Hu	MP4-25D2	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV711	100 Tests	564112
IL-10	Hu, Vir	JES3-9D7	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV711	50 Tests	564050
IL-13	Hu	JES10-5A2	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV711	50 Tests	564288
Invariant NK T-cell	Hu	6B11	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563268
Ki-67	Hu	B56	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV711	50 Tests	563755
T-bet	Hu, Ms	O4-46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563320
TSLP Receptor	Hu	1F11/TSLPR	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563342

BD Horizon Brilliant™ Violet 711

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3e	Ms	145-2C11	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV711	50 µg	563123
CD4	Ms	GK1.5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 µg	563050
		RM4-5	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563726
CD8a	Ms	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563046
CD11b	Ms	M1/70	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 µg	563168
CD11c	Ms	HL3	Ar Ham IgG1, λ2	FCM	RUO	BD Horizon BV711	50 µg	563048
CD19	Ms	1D3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563157
CD23	Ms	B3B4	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563987
CD24	Ms	M1/69	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 µg	563450
CD44	Ms	IM7	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 µg	563971
CD45	Ms	30-F11	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 µg	563709
CD45R/B220	Ms	RA3-6B2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563892
CD45.1	Ms	A20	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563982
CD45.2	Ms	104	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563685
CD83	Ms	MICHEL-19	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 µg	563136
CD90.1	Ms, Rat	OX-7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 µg	563772
CD103	Ms	M290	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	564320
CD107a	Ms	1D4B	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV711	50 µg	564348
CD117	Ms	2B8	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 µg	563160
CD138	Ms	281-2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563193
CD223	Ms	C9B7W	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 µg	563179
CD274	Ms	MIH5	Rat IgG _{2a} , λ	FCM	RUO	BD Horizon BV711	50 µg	563369
CD314 (NKG2D)	Ms	CX5	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 µg	563694
CD326	Ms	G8.8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563134
CD357	Ms	DTA-1	Rat IgG _{2b} , λ	FCM	RUO	BD Horizon BV711	100 µg	563390
γδ T-cell Receptor	Ms	GL3	Ar Ham IgG2, κ	FCM	RUO	BD Horizon BV711	50 µg	563994
I-A/I-E	Ms	M5/114.15.2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV711	50 µg	563414
IFN-γ	Ms	XMG1.2	Rat IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV711	50 µg	564336
IgD	Ms	11-26c.2a	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	564275
IgM	Ms	R6-60.2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	564026
IL-4	Ms	11B11	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV711	50 µg	564005
IL-10	Ms	JES5-16E3	Rat IgG _{2b}	IC/FCM	RUO	BD Horizon BV711	50 µg	564081
KLRG1	Ms	2F1	Syrian Hamster IgG2, κ	FCM	RUO	BD Horizon BV711	50 µg	564014
Ly-6A/E	Ms	D7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563992
Ly-6G	Ms	1A8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV711	50 µg	563979
T-bet	Hu, Ms	O4-46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV711	50 Tests	563320
TCR β Chain	Ms	H57-597	Ar Ham IgG2, λ1	FCM	RUO	BD Horizon BV711	50 µg	563135
TNF	Ms	MP6-XT22	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV711	50 µg	563944

BD Horizon Brilliant™ Violet 711

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Ham IgG1, κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563128
Hamster IgG1, λ1	G235-2356	Ar Ham IgG1, λ1	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563049
Hamster IgG2, κ	B81-3	Ar Ham IgG2, κ	FCM, Ictrl	RUO	BD Horizon BV711	50 µg	563989
Hamster IgG2, λ	HA4/8	Ar Ham IgG2, λ1	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563348
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563044
Mouse IgG2a, κ	G155-178	Mouse IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563345
Mouse IgG2b, κ _s	27-35	Mouse IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563125
Mouse IgM, κ _s	G155-228	Mouse IgM, κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563164
Rat IgG1, κ	R3-34	Rat IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563283
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563047
Rat IgG2a, λ	B39-4	Rat IgG _{2a} , λ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563394
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563045
Rat IgM, κ	R4-22	Rat IgM, κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	563139

BD Horizon Brilliant™ Violet 786

BD Horizon Brilliant™ Violet 786 (BV786), offers an additional choice for multicolor panel design. Due to its far red emission profile, it will have little spectral overlap into the other violet detectors.

BD Horizon BV786 is a tandem fluorochrome of BV421 and an acceptor dye with an emission maximum of 786 nm. BV786 offers a bright choice for the sixth detector off the violet laser.

It can be excited by the violet laser and detected in a filter used to detect Cy7-like dyes (for example, a 780/60-nm filter) (Figure 1). Not only does BV786 provide an additional choice for multicolor panel design, its brightness makes it an optimal choice for dim markers such as CD127 and CD335 (NKp46).

BD Horizon™ BV786	
Relative Brightness	Bright
Ex (max)	405 nm
Em (max)	786 nm
Filter	780/60
Compatible BD Biosciences instruments	All BD flow cytometers with a violet laser, 3 PMTs minimum, and an appropriate filter: BD™ LSR platform, BD FACSAria™ platform, BD Influx™ cell sorter
Alternative fluorochromes	Qdot® 800

Specificity	Stain Index	
	BD Horizon BV786	FITC
Human CD127	24	14
Human CD19	104	20
Human CD27	91	97
Human CD335	5	8
Human CD8	115	40

Table 1. Stain index comparison of CD127, CD19, CD27, CD335, and CD8 stained with BV786 and FITC reagents.

Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon Brilliant™ Violet 786

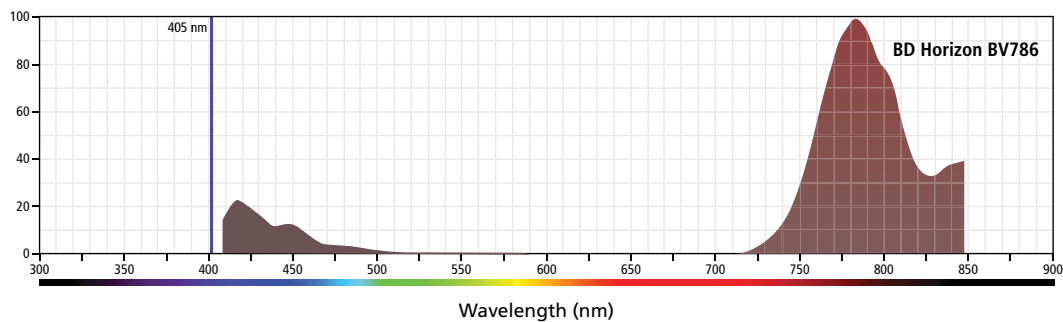


Figure 1. Excitation and emission profile of BV786.

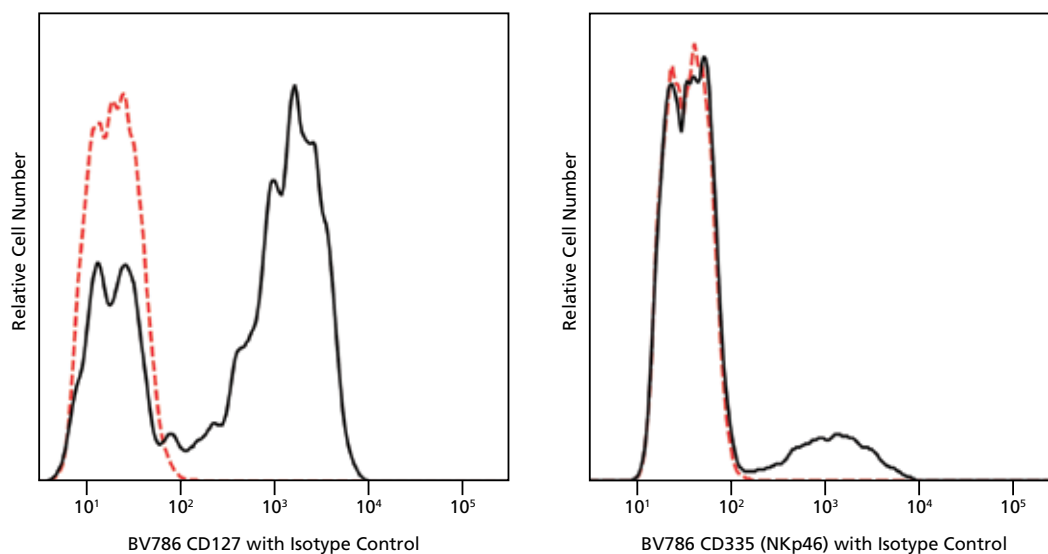


Figure 2. Lysed whole blood stained with human CD127 or CD335 (NKp46) BV786.

Data shown was gated on lymphocytes and overlaid with the isotype control.

BD Horizon Brilliant™ Violet 786

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3	Hu	SK7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	25 Tests	563799
				FCM	RUO	BD Horizon BV786	100 Tests	563800
	Hu, NHP	SP34-2	Mouse IgG ₁ , λ	FCM	RUO	BD Horizon BV786	50 Tests	563918
CD4	Hu, NHP	L200	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	50 Tests	563914
				FCM	RUO	BD Horizon BV786	25 Tests	563881
	Hu	SK3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	100 Tests	563877
CD8	Hu	RPA-T8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	25 Tests	563824
				FCM	RUO	BD Horizon BV786	100 Tests	563823
CD14	Hu	M5E2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	25 Tests	563699
				FCM	RUO	BD Horizon BV786	100 Tests	563698
CD15	Hu	HI98	Mouse IgM, κ	FCM	RUO	BD Horizon BV786	100 Tests	563838
CD16	Hu	3G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	25 Tests	563689
				FCM	RUO	BD Horizon BV786	100 Tests	563690
CD19	Hu	SJ25C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	25 Tests	563326
				FCM	RUO	BD Horizon BV786	100 Tests	563325
CD25	Hu	M-A251	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	25 Tests	563700
				FCM	RUO	BD Horizon BV786	100 Tests	563701
CD27	Hu	L128	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	25 Tests	563328
				FCM	RUO	BD Horizon BV786	100 Tests	563327
CD38	Hu	HB7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	100 Tests	563964
CD45	Hu	HI30	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	100 Tests	563716
	NHP	D058-1283	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	50 Tests	563861
CD45RA	Hu	HI100	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 Tests	563870
CD45RO	Hu	UCHL1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	100 Tests	564290
CD47	Hu	B6H12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	100 Tests	563758
CD49b	Hu	12F1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	100 Tests	564120
CD50	Hu	TU41	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	100 Tests	564212
CD56	Hu	NCAM16.2	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	100 Tests	564058
				FCM	RUO	BD Horizon BV786	100 Tests	564058
CD62P	Hu	AK-4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	25 Tests	563714
				FCM	RUO	BD Horizon BV786	100 Tests	563715
CD69	Hu	FN50	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	100 Tests	563834
CD71	Hu	M-A712	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 Tests	563768
CD80	Hu	L307.4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	100 Tests	564159
CD107a	Hu	H4A3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	50 Tests	563869
CD123	Hu	7G3	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 Tests	564196
CD127	Hu	HIL-7R-M21	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	50 Tests	563324
CD152	Hu	BNi3	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 Tests	563931
CD196 (CCR6)	Hu	11A9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	50 Tests	563704
CD197 (CCR7)	Hu	3D12	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 Tests	563710
CD273	Hu	MIH18	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	100 Tests	563843
CD274	Hu	MIH1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	100 Tests	563739
CD279	Hu	EH12.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	50 Tests	563789
CD335 (NKP46)	Hu	9E2/NKP46	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	50 Tests	563329
HLA-DR	Bab, Cyno, Hu, Rhe	G46-6	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 Tests	564041
IFN _γ	Hu	4S.B3	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV786	50 Tests	563731
IgG	Hu	G18-145	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	50 Tests	564230
IL-4	Hu	MP4-25D2	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV786	100 Tests	564113
IL-10	Hu, Vir	JES3-9D7	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV786	50 Tests	564049
IL-17A	Hu	N49-653	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV786	50 Tests	563745
IL-17F	Hu	O33-782	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV786	100 Tests	564265
Ki-67	Hu	B56	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV786	50 Tests	563756
TCR αβ	Hu	T10B9.1A-31	Mouse IgM, κ	FCM	RUO	BD Horizon BV786	100 Tests	563825
Toll-Like Receptor 4	Hu	TF901	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BV786	100 Tests	564402

BD Horizon Brilliant™ Violet 786

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3 Molecular Complex	Ms	17A2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 µg	564010
CD3e	Ms	145-2C11	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BV786	50 µg	564379
CD4	Ms	GK1.5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 µg	563331
		RM4-5	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	563727
CD8a	Ms	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	563332
CD11c	Ms	HL3	Ar Ham IgG1, λ2	FCM	RUO	BD Horizon BV786	50 µg	563735
CD19	Ms	1D3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	563333
CD23	Ms	B3B4	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	563988
CD25	Ms	3C7	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 µg	564368
		PC61	Rat IgG ₁ , λ	FCM	RUO	BD Horizon BV786	50 µg	564023
CD44	Ms	IM7	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 µg	563736
CD45	Ms	30-F11	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 µg	564225
CD45R/B220	Ms	RA3-6B2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	563894
CD45RA	Ms	14.8	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 µg	564361
CD45.2	Ms	104	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	563686
CD49d	Ms	R1-2	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 µg	564397
CD62L	Ms	MEL-14	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	564109
CD69	Ms	H1.2F3	Ar Ham IgG1, λ3	FCM	RUO	BD Horizon BV786	50 µg	564683
CD90.2	Ms	53-2.1	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	564365
CD103	Ms	M290	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	564322
CD105	Ms	MJ7/18	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	564746
CD107a	Ms	1D4B	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV786	50 µg	564349
CD117	Ms	2B8	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 µg	564012
CD127	Ms	SB/199	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BV786	50 µg	563748
CD197 (CCR7)	Ms	4B12	Rat IgG _{2a}	FCM	RUO	BD Horizon BV786	50 µg	564355
IFN_γ	Ms	XMG1.2	Rat IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV786	50 µg	563773
IgD	Ms	11-26C.2A	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	563618
IgE	Ms	R35-72	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BV786	50 µg	564206
IgM	Ms	R6-60.2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	564028
IL-4	Ms	11B11	Rat IgG ₁	IC/FCM	RUO	BD Horizon BV786	50 µg	564006
IL-17A	Ms	TC11-18H10	Rat IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV786	50 µg	564171
Ki-67	Hu, Ms, Pig	B56	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV786	50 Tests	563756
Ly-6A/E	Ms	D7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BV786	50 µg	563991
ROR_γt	Ms	Q31-378	Mouse IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BV786	50 µg	564723
T-bet	Hu, Ms	O4-46	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BV786	50 Tests	564141

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Ham IgG1, κ	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	564389
Hamster IgG1, λ	G235-2356	Ar Ham IgG1, λ1	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	563751
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	563330
Mouse IgG2a, κ	G155-178	Mouse IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	563732
Mouse IgG2b, κ	27-35	Mouse IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	564090
Mouse IgM, κ	G155-228	Mouse IgM, κ	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	563837
Rat IgG1, κ	R3-34	Rat IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	563847
Rat IgG1, λ	A110-1	Rat IgG ₁ , λ	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	564093
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	563335
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BV786	50 µg	563334

BD Horizon Brilliant™ Ultraviolet 395

BD Horizon Brilliant™ Ultraviolet 395 (BUV395) is a UV-excitable dye that has been developed exclusively by BD Biosciences to expand the multicolor capabilities of flow cytometers equipped with a 355-nm laser. Not only does this dye provide an additional color, it is an optimal dye for multicolor flow cytometry because it has little minimal spillover into other detectors.

Currently available UV-excitable fluorochromes are so dim that they are not practical for immunophenotyping applications. However, BUV395 is bright, providing great resolution for bright markers such as CD4 as well as dimmer markers such as CD56 (Figure 2). In many cases, BUV395 reagents are brighter than FITC reagents (Table 1).

With an excitation maximum of 348 nm and an emission maximum of 395 nm, BUV395 can be excited by the 355-nm laser and detected with a 379/28 filter (Figure 1). This dye is not recommended for instruments equipped with a 375-nm laser.

Virtually no compensation requirements

BUV395 is an optimal dye for multicolor flow cytometry because it has virtually no spillover into any other detector (Table 2). Additionally, other fluorochromes have little to no spillover into the BUV395 detector. BUV395 allows you to add an additional color to a panel without increasing the complexity of compensation requirements.

More choice and flexibility for multicolor panel design

BUV395 provides more choices for multicolor flow cytometry, making multicolor panel design easier and more accessible. Using BUV395 with other fluorochromes offered by BD Biosciences allows you to detect 18 fluorescence parameters from a single sample.

Managing spillover between reagents can be one of the more difficult elements of multicolor panel design. By spreading markers over multiple lasers, the overall compensation requirements of a panel can be reduced. For example, by assigning one marker to each laser, a 5-color panel with minimal compensation requirements can be run on an instrument equipped with UV, violet, blue, red, and yellow-green lasers. The availability of UV-excitable reagents makes it easier to design panels with less spillover. This diminishes one of the most difficult elements of multicolor panel design.

BD Horizon™ BUV395	
Relative Brightness	Moderate
Ex (max)	348 nm
Em (max)	395 nm
Filter	379/28
Compatible BD Biosciences instruments	All BD flow cytometers with a 355-nm ultraviolet laser: BD™ LSR platform
Alternative fluorochromes	None

Specificity	Stain Index	
	BD Horizon BUV395	FITC
Human CD4	223	52
Human CD56	21	10

Table 1. Stain index comparison of CD4 and CD56 stained with BUV395 and FITC reagents. Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon Brilliant™ Ultraviolet 395

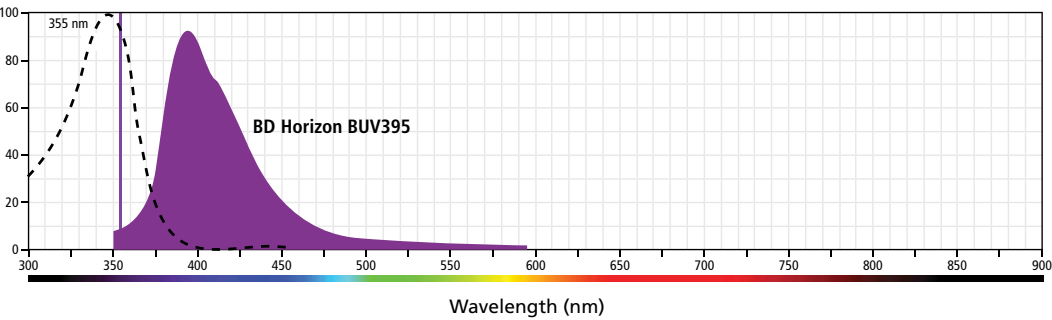


Figure 1. Excitation and emission profile of BU395.

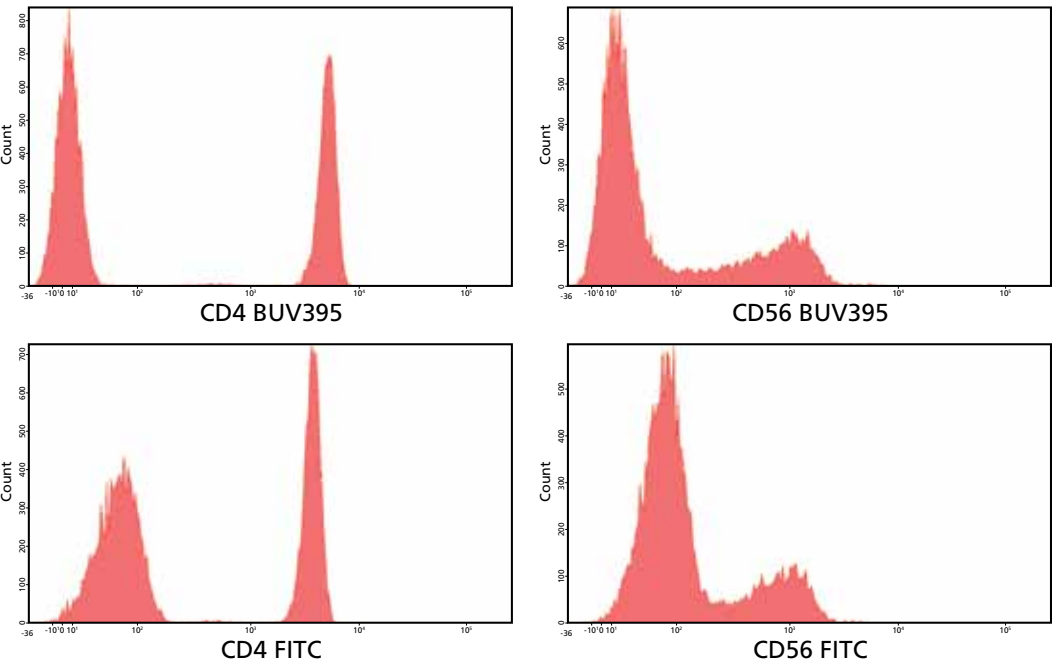


Figure 2. Lysed whole blood stained with CD4 or CD56 in BU395 or FITC formats. Data shown was gated on lymphocytes. BU395 was excited by a 355-nm laser and FITC was excited by a 488-nm laser.

Laser		BUV395 %spillover into other channels					
		BUV395	BUV496	BUV661	BUV737	BUV805	
Ultraviolet							
	BUV395		12%	0%	0%	0%	
Violet		BV421	BV510	BV605	BV650	BV711	BV786
	BUV395	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Blue		FITC	PE	PE-CF594	PE-Cy™5	PerCP-Cy™5.5	PE-Cy™7
	BUV395	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Red					APC	Alexa Fluor® 700	APC-Cy7
	BUV395				0.0%	0.0%	0.0%

Table 2. BU395 spillover into other channels. This table shows relative spillover values of the dyes, which can vary as a function of PMT voltage. White represents little to no spectral overlap. The green fill color denotes a small degree of spectral overlap between dyes. Yellow and red fill colors denote where there is more spectral overlap between dyes.

BD Horizon Brilliant™ Ultraviolet 395

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD2	Hu	RPA-2.10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon B.UV395	25 Tests	563820
				FCM	RUO	BD Horizon BUV395	100 Tests	563819
CD3	Hu	SK7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	564000
				FCM	RUO	BD Horizon BUV395	100 Tests	564001
				FCM	RUO	BD Horizon BUV395	25 Tests	563548
	Bab, Cyno, Rhe	UCHT1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	564117
		SP34-2	Mouse IgG ₁ , λ	FCM	RUO	BD Horizon BUV395	50 Tests	564117
				FCM	RUO	BD Horizon BUV395	100 Tests	563546
CD4	Hu	SK3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563552
				FCM	RUO	BD Horizon BUV395	100 Tests	563550
	Bab, Cyno, Rhe	L200	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 Tests	564107
		RPA-T4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	100 Tests	564724
CD7	Hu	M-T701	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	100 Tests	563845
CD8	Hu	RPA-T8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563796
				FCM	RUO	BD Horizon BUV395	100 Tests	563795
CD10	Hu	HI10A	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	100 Tests	563871
CD11b/Mac-1	Hu	ICRF44	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563840
				FCM	RUO	BD Horizon BUV395	100 Tests	563839
CD11c	Hu	B-LY6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563788
				FCM	RUO	BD Horizon BUV395	100 Tests	563787
CD14	Hu	MqP9	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563562
				FCM	RUO	BD Horizon BUV395	100 Tests	563561
CD15	Hu	HI98	Mouse IgM, κ	FCM	RUO	BD Horizon BUV395	100 Tests	563872
CD16	Hu	3G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563784
				FCM	RUO	BD Horizon BUV395	100 Tests	563785
CD19	Hu	SJ25C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563551
				FCM	RUO	BD Horizon BUV395	100 Tests	563549
CD20	Hu	2H7	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563781
				FCM	RUO	BD Horizon BUV395	100 Tests	563782
CD23	Hu	M-L233	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	100 Tests	564203
CD24	Hu	ML5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	100 Tests	563818
CD25	Hu	2A3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	100 Tests	564034
CD27	Hu	L128	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563816
				FCM	RUO	BD Horizon BUV395	100 Tests	563815
CD34	Hu	581	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	100 Tests	563778
CD38	Hu	HB7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563812
				FCM	RUO	BD Horizon BUV395	100 Tests	563811
CD45	Hu	HI30	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563791
				FCM	RUO	BD Horizon BUV395	100 Tests	563792
	Bab, Cyno, Rhe	D058-1283	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 Tests	564099
CD45RO	Hu	UCHL1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	25 Tests	564292
				FCM	RUO	BD Horizon BUV395	100 Tests	564291
CD56	Hu	NCAM16.2	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BUV395	25 Tests	563555
				FCM	RUO	BD Horizon BUV395	100 Tests	563554
CD69	Bab, Cyno, Hu, Rhe	FN50	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 Tests	564364
CD90	Bab, Cyno, Dog, Hu, Pig, Rhe	5E10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	100 Tests	563804
CD103	Hu	Ber-ACT8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 Tests	564346
CD105	Hu	266	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 Tests	563803
CD123	Hu	7G3	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 Tests	564195
CD146	Hu	P1H12	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 Tests	564326
CD184	Bab, Cyno, Hu, Rhe	12G5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 Tests	563924
CD197 (CCR7)	Hu	150503	Mouse IgG _{2a}	FCM	RUO	BD Horizon BUV395	50 Tests	563977
CD235a	Hu	GA-R2 (HIR2)	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BUV395	50 Tests	563810
Active Caspase-3	Hu, Ms	C92-605	Rabbit IgG	IC/FCM	RUO	BD Horizon BUV395	100 Tests	564095
Annexin V	Hu			FCM	RUO	BD Horizon BUV395	100 Tests	564871

BD Horizon Brilliant™ Ultraviolet 395

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Disialoganglioside GD2	Hu	14.G2a	Mouse IgG _{2a}	FCM	RUO	BD Horizon BUV395	50 Tests	564224
HLA-DR	Hu	G46-6	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 Tests	564040
IFN-γ	Hu	B27	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BUV395	50 Tests	563563
IgD	Hu	IA6-2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 Tests	563813
IgG	Hu	G18-145	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 Tests	564229
IgM	Hu	G20-127	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 Tests	563903
Ki-67	Hu	B56	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BUV395	50 Tests	564071
SSEA-4	Hu	MC813-70	Mouse IgG ₂ , κ	FCM	RUO	BD Horizon BUV395	50 Tests	563817
TCR γδ	Hu	B1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 μg	564155
TNF	Hu	MAb11	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BUV395	50 Tests	563996
TRA-1-60 Antigen	Hu	TRA-1-60	Mouse IgM, κ	FCM	RUO	BD Horizon BUV395	50 Tests	563878

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3e	Ms	145-2C11	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BUV395	50 μg	563565
CD4	Ms	GK1.5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BUV395	50 μg	563790
CD8a	Ms	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	563786
CD11c	Ms	HL3	Ar Ham IgG1, λ2	FCM	RUO	BD Horizon BUV395	50 μg	564080
CD19	Ms	1D3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	563557
CD25	Ms	PC61	Rat IgG ₁ , λ	FCM	RUO	BD Horizon BUV395	50 μg	564022
CD41	Ms	MWReg30	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BUV395	50 μg	564056
CD45	Ms	30-F11	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BUV395	50 μg	564279
CD45R/B220	Ms	RA3-6B2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	563793
CD45.2	Ms	104	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	564616
CD86	Ms	GL1	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	564199
CD117	Ms	2B8	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BUV395	50 μg	564011
Active Caspase-3	Hu, Ms	C92-605	Rabbit IgG	IC/FCM	RUO	BD Horizon BUV395	100 Tests	564095
CXCR5	Ms	2G8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	563980
IgD	Ms	11-26c.2a	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	564274
IgM	Ms	R6-60.2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	564025
Ly-6A/E	Ms	D7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	563990
Ly-6G	Ms	1A8	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	563978
Ly-6G and Ly-6C	Ms	RB6-8C5	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	563849
NK-1.1	Ms	PK136	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV395	50 μg	564144
TER-119/Erythroid Cells	Ms	TER-119	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BUV395	50 μg	563827

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Ham IgG1, κ	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	563559
Hamster IgG1, λ	G235-2356	Ar Ham IgG1, λ1	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	564075
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	563547
Mouse IgG2a, κ	G155-178	Mouse IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	563809
Mouse IgG2b, κ	27-35	Mouse IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	563558
Mouse IgG3, κ	J606	Mouse IgG ₃ , κ	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	563814
Mouse IgM, κ	G155-228	Mouse IgM, κ	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	563866
Rat IgG1, κ	R3-34	Rat IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	564059
Rat IgG1, λ	A110-1	Rat IgG ₁ , λ	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	564015
Rat IgG _{2a} , κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BUV395	50 μg	563556

BD Horizon Brilliant™ Ultraviolet 496

BD Horizon Brilliant™ Ultraviolet 496 (BUV496) is a UV-excitable dye that has been developed exclusively by BD Biosciences to expand the multicolor capabilities of flow cytometers equipped with a 355-nm laser.

BUV496 is a tandem dye that combines BUV395 and an acceptor dye with an emission max at 496 nm. As part of the BD Horizon Brilliant Ultraviolet family, BUV496 enables detection of up to 18 fluorescence parameters from a single sample.

Multicolor considerations

BUV496 has little spillover into most detectors. However, due to the excitation of the acceptor dye by other laser lines, there may be significant spillover into channels detecting BD Horizon™ V500 or BV510 (for example, 525/40-nm filter). However, the spillover can be corrected through compensation, as with any other dye combination.

BD Horizon™ BUV496	
Relative Brightness	Moderate
Ex (max)	348 nm
Em (max)	496 nm
Filter	515/30
Compatible BD Biosciences instruments	All BD flow cytometers with a 355-nm ultraviolet laser: BD™ LSR platform
Alternative fluorochromes	None

Specificity	Stain Index	
	BD Horizon BUV496	FITC
Human CD4	73	38
Human CD19	43	20

Table 1. Stain index comparison of CD4 and CD19 stained with BUV496 and FITC reagents. Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon Brilliant™ Ultraviolet 496

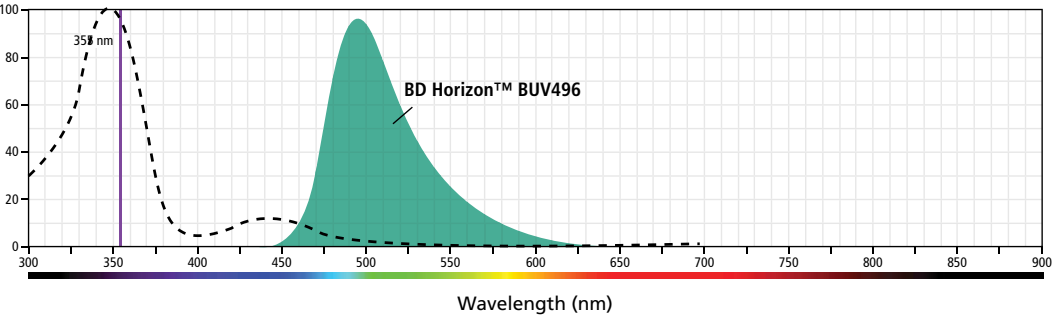


Figure 1. Excitation and emission profile of BUUV496.

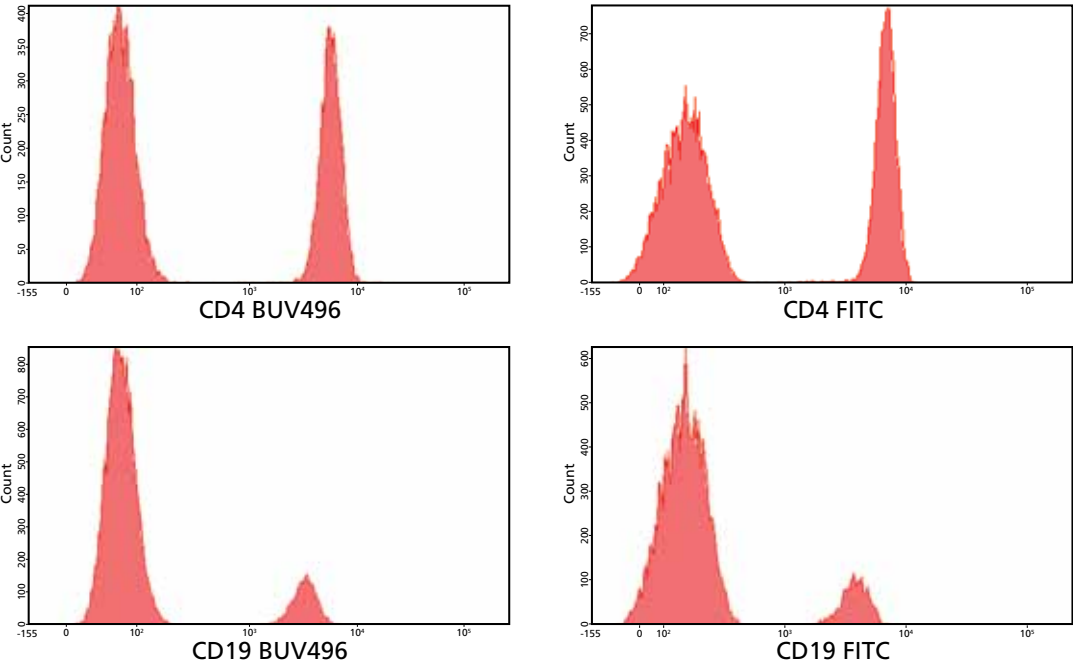


Figure 2. Lysed whole blood stained with CD4 or CD19 in BUUV496 or FITC formats. Data shown was gated on lymphocytes. BUUV496 was excited by a 355-nm laser and FITC was excited by a 488-nm laser.

Laser		BUUV496 % Spillover into other channels					
		BUV395	BUV496	BUV661	BUV737	BUV805	
Ultraviolet							
	BUV496	4%		5%	1%	0%	
Violet							
	BUV496	1%	27%	5%	1%	0%	0%
Blue							
	BUV496	FITC	PE	PE-CF594	PE-Cy™5	PerCP-Cy™5.5	PE-Cy™7
Red							
	BUV496				APC	Alexa Fluor® 700	APC-Cy7

Table 2. BUUV496 spillover into other channels. This table shows relative spillover values of the dyes, which can vary as a function of PMT voltage. White represents little to no spectral overlap. The green fill color denotes a small degree of spectral overlap between dyes. Yellow and red fill colors denote where there is more spectral overlap between dyes.

BD Horizon Brilliant™ Ultraviolet 496

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3	Hu	UCHT1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV496	25 Tests	564810
				FCM	RUO	BD Horizon BUV496	100 Tests	564809
CD4	Hu	SK3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV496	25 Tests	564652
				FCM	RUO	BD Horizon BUV496	100 Tests	564651
CD8	Bab, Cyno, Hu, Rhe	RPA-T8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV496	25 Tests	564805
				FCM	RUO	BD Horizon BUV496	100 Tests	564804
CD16	Hu	3G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV496	25 Tests	564654
				FCM	RUO	BD Horizon BUV496	100 Tests	564653
CD19	Hu	SJ25C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV496	25 Tests	564656
				FCM	RUO	BD Horizon BUV496	100 Tests	564655
CD38	Hu	HIT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV496	25 Tests	564658
				FCM	RUO	BD Horizon BUV496	100 Tests	564657
CD196	Hu	11A9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV496	50 Tests	564659

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3e	Ms	145-2C11	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BUV496	50 µg	564661
CD4	Ms	GK1.5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BUV496	50 µg	564667
CD24	Ms	M1/69	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BUV496	50 µg	564664
CD45R/B220	Ms	RA3-6B2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV496	50 µg	564662

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Hamster IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BUV496	50 µg	564660
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BUV496	50 µg	564650
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BUV496	50 µg	564663
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BUV496	50 µg	564665

BD Horizon Brilliant™ Ultraviolet 661

BD Horizon Brilliant™ Ultraviolet 661 (BUV661) is a UV-excitable dye that has been developed exclusively by BD Biosciences to provide more options for flow cytometers equipped with a 355-nm laser.

BUV661 is a tandem dye that combines BUV395 and an acceptor dye with an emission maximum at 661 nm. As part of the BD Horizon Brilliant Ultraviolet family, provides an additional option for multicolor panels utilizing UV excitable dyes.

Multicolor considerations
BUV661 will also have moderate spillover into the BUV737 detector. Due to the excitation and emission characteristics of the acceptor dye, there might be moderate spillover into the APC and Alexa Fluor® 700 like detectors. However, the spillover can be corrected through compensation, as with any other dye combination.

BD Horizon™ BUV661	
Relative Brightness	Bright
Ex (max)	348 nm
Em (max)	661 nm
Filter	670/25, 630 nm
Compatible BD Biosciences instruments	BD LSRFortessa X-20 equipped with a 355-nm ultraviolet laser with more than 3 PMTs
Alternative fluorochromes	None

Specificity	Stain Index	
	BD Horizon BUV661	BD Horizon V450
Human CD3	452	140
Human CD11c	15	6
Mouse CD11b	67	13
Mouse CD19	43	7

Table 1. Stain index comparison of Hu CD3, Hu CD19, Ms CD11b and Ms CD19 stained with BUV496 and BD Horizon V450 reagents. Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon™ BUV661

BD Horizon Brilliant™ Ultraviolet 661

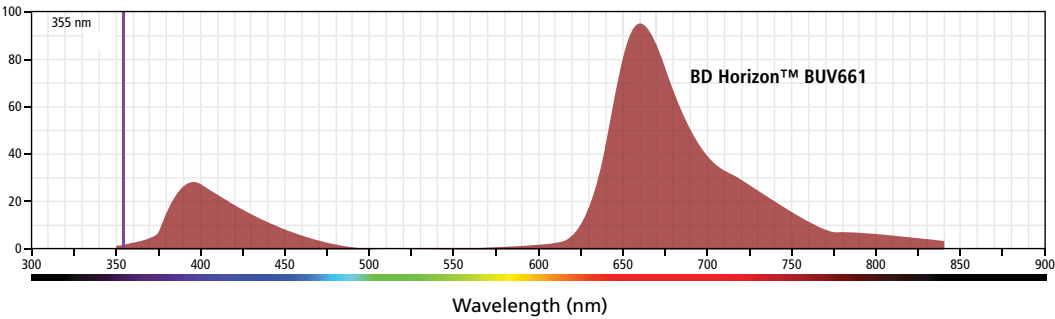


Figure 1. Excitation and emission profile of BUUV661.

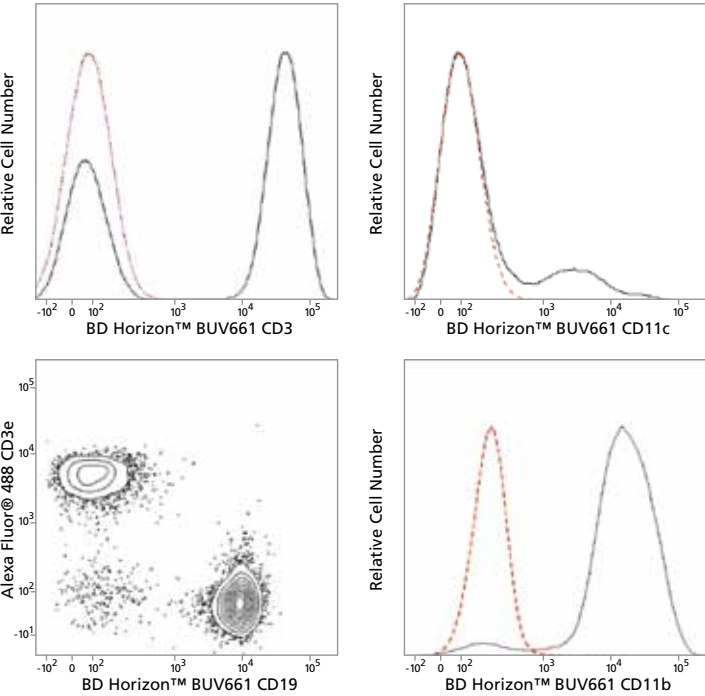


Figure 2. Cells stained with BUUV661 reagents
Top Row: Lysed whole blood stained with Hu CD3 or Hu CD11c BUUV661 and appropriate isotype control. Data shown on lymphocytes.
Bottom Row. Mouse splenocytes stained with Ms CD3e Alexa Fluor® 488 and Ms CD19 BUUV661. Mouse bone-marrow cells stained with Ms CD11b BUUV661.

Laser		BUUV661 %Spillover into other channels					
		BUV395	BUV496	BUV661	BUV737	BUV805	
Ultraviolet							
	BUV661	1%	0%		30%	11%	
Violet		BV421	BV510	BV605	BV650	BV711	BV786
	BUV661	0%	0%	0%	8%	2%	0%
Blue		FITC	PE	PE-CF594	PE-Cy5	PerCP-Cy5.5	PE-Cy7
	BUV661	0%	0%	0%	0%	0%	0%
Red					APC	Alexa Fluor® 700	APC-Cy7
	BUV661				42%	19%	3%

Table 2. BUUV661 spillover into other channels.
This table shows relative spillover values of the dyes, which can vary as a function of PMT voltage. White represents little to no spectral overlap. The green fill color denotes a small degree of spectral overlap between dyes. Yellow and red fill colors denote where there is more spectral overlap between dyes.

BD Horizon Brilliant™ Ultraviolet 661

Human

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3	Hu	UCHT1	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BUV661	25 Tests	565066
				FCM	RUO	BD Horizon BUV661	100 Tests	565065
CD11c	Hu	B-ly6	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BUV661	25 Tests	565068
				FCM	RUO	BD Horizon BUV661	100 Tests	565067
CD38	Hu	HIT2	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BUV661	25 Tests	565070
				FCM	RUO	BD Horizon BUV661	100 Tests	565069
HLA-DR	Hu	G46-6	Mouse IgG _{2a} κ	FCM	RUO	BD Horizon BUV661	25 Tests	565074
				FCM	RUO	BD Horizon BUV661	100 Tests	565073

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD11b	Ms	M1/70	Rat IgG _{2b} κ	FCM	RUO	BD Horizon BUV661	50 µg	565080
CD19	Ms	1D3	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BUV661	50 µg	565076
CD45	Ms	30-F11	Rat IgG _{2b} κ	FCM	RUO	BD Horizon BUV661	50 µg	565079
CD45R/B220	Ms	RA3-6B2	Rat IgG _{2a} κ	FCM	RUO	BD Horizon BUV661	50 µg	565077

BD Horizon Brilliant™ Ultraviolet 661

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BUV661	50 µg	565064
Mouse IgG2a, κ	G155-178	Mouse IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BUV661	50 µg	565072
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BUV661	50 µg	565075
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BUV661	50 µg	565078

BD Horizon Brilliant™ Ultraviolet 737

The BD Horizon Brilliant™ Ultraviolet 737 (BUV737) is an additional dye developed exclusively by BD Biosciences for flow cytometers equipped with a 355-nm laser.

BUV737 is a tandem dye that combines BUV395 and an acceptor dye with an emission maximum of 737 nm. BUV737 can be excited by the 355-nm laser and detected with a 740/35 filter (Figure 1). This dye is not recommended for instruments equipped with a 375-nm laser.

This dye is bright, providing great resolution for bright markers as well as dimmer markers such as CD127 (Figure 2). In most cases, BUV737 reagents will be brighter than FITC and BUV395 reagents.

BUV737 is an additional dye that can be excited by the 355-nm laser, increasing flexibility in multicolor panel design.

Multicolor considerations

The dye has very little spillover into most detectors, making it optimal for multicolor panels. However, due to the excitation of the acceptor dye by other laser lines, there may be significant spillover into channels detecting Alexa Fluor® 700-like dyes (for example, 712/20-nm filter) (Table 2). The spillover can be corrected through compensation, as with any other dye combination.

BD Horizon™ BUV737	
Relative Brightness	Bright
Ex (max)	348 nm
Em (max)	737 nm
Filter	740/35
Compatible BD Biosciences instruments	All BD flow cytometers with a 355-nm ultraviolet laser: BD™ LSR platforms
Alternative fluorochromes	None

Specificity	Stain Index	
	BD Horizon BUV737	FITC
Human CD4	249	57
Human CD19	127	61
Human CD127	13	5

Table 1. Stain index comparison of CD4, CD19, and CD127 stained with BUV737 or FITC reagents. Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon Brilliant™ Ultraviolet 737

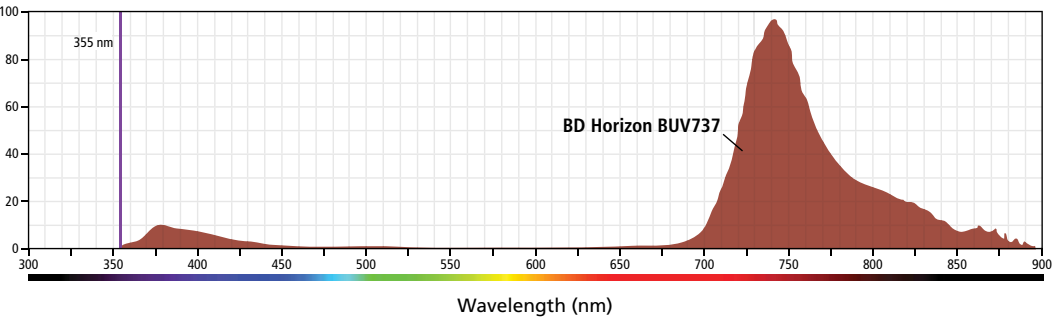


Figure 1. Excitation and emission profile of BUUV737.

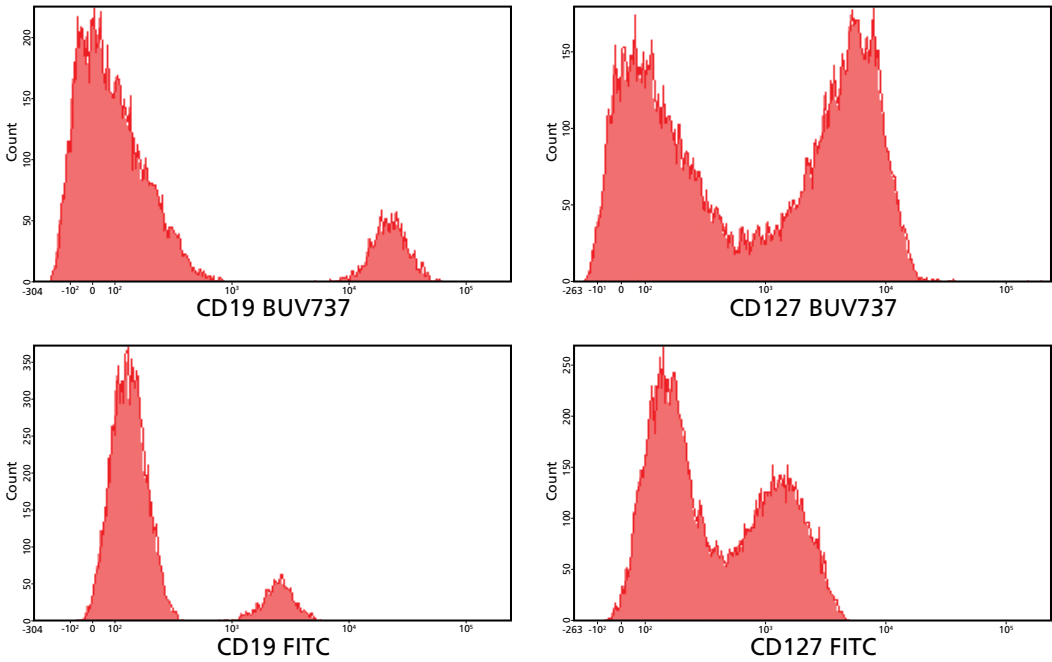


Figure 2. Lysed whole blood stained with CD19 or CD127 in BUUV737 or FITC formats. Data shown was gated on lymphocytes. BUUV737 was excited by a 355-nm laser and FITC was excited by a 488-nm laser.

Laser		BUUV737 %Spillover into other channels					
		BUV395	BUV496	BUV661	BUV737	BUV805	
Ultraviolet							
	BUV737	2%	0%	1%		52%	
Violet		BV421	BV510	BV605	BV650	BV711	BV786
	BUV737	0%	0%	0%	0%	4%	3%
Blue		FITC	PE	PE-CF594	PE-Cy5	PerCP-Cy5.5	PE-Cy7
	BUV737	0%	0%	0%	0%	2%	9%
Red					APC	Alexa Fluor® 700	APC-Cy7
	BUV737				1%	45%	11%

Table 2. BUUV737 spillover into other channels. This table shows relative spillover values of the dyes, which can vary as a function of PMT voltage. White represents little to no spectral overlap. The green fill color denotes a small degree of spectral overlap between dyes. Yellow and red fill colors denote where there is more spectral overlap between dyes.

BD Horizon Brilliant™ Ultraviolet 737

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3	Hu	UCHT1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564308
				FCM	RUO	BD Horizon BUV737	100 Tests	564307
CD4	Hu	SK3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564306
				FCM	RUO	BD Horizon BUV737	100 Tests	564305
CD5	Hu	UCHT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564452
				FCM	RUO	BD Horizon BUV737	100 Tests	564451
CD8	Bab, Cyno, Hu, Rhe	SK1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564628
				FCM	RUO	BD Horizon BUV737	100 Tests	564629
CD10	Bab, Cyno, Hu, Rhe	HI10a	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	100 Tests	564959
CD14	Bab, Dog, Cyno, Hu, Rhe	M5E2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564445
				FCM	RUO	BD Horizon BUV737	100 Tests	564444
CD16	Bab, Dog, Cyno, Hu, Rhe	3G8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564433
				FCM	RUO	BD Horizon BUV737	100 Tests	564434
CD19	Hu	SJ25C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564304
				FCM	RUO	BD Horizon BUV737	100 Tests	564303
CD20	Bab, Dog, Cyno, Hu, Rhe	2H7	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564431
				FCM	RUO	BD Horizon BUV737	100 Tests	564432
CD21	Bab, Cyno, Hu, Pig, Rhe	B-ly4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564595
				FCM	RUO	BD Horizon BUV737	100 Tests	564437
CD25	Hu	2A3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564386
				FCM	RUO	BD Horizon BUV737	100 Tests	564385
		SJ25C1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564304
				FCM	RUO	BD Horizon BUV737	100 Tests	564303
CD27	Hu	L128	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564302
				FCM	RUO	BD Horizon BUV737	100 Tests	564301
CD28	Hu	CD28.2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	100 Tests	564438
CD38	Hu	HB7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	100 Tests	564686
CD39	Hu	TU66	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BUV737	100 Tests	564726
CD45RA	Hu	HI100	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BUV737	50 Tests	564442
CD56	Hu	NCAM16.2	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564448
				FCM	RUO	BD Horizon BUV737	100 Tests	564447
CD64	Hu	10.1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	25 Tests	564426
				FCM	RUO	BD Horizon BUV737	100 Tests	564425
CD69	Bab, Cyno, Hu, Rhe	FN50	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	50 Tests	564439
CD83	Hu	HB15e	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	50 Tests	564441
CD86	Bab, Cyno, Hu, Rhe	2331 (FUN-1)	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	100 Tests	564428
CD95	Bab, Cyno, Dog, Hu, Pig, Rhe	DX2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	100 Tests	564710
CD127	Hu	hIL-7R-M21	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	50 Tests	564300
CD138	Hu	MI15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	50 Tests	564393
CD196 (CCR6)	Hu	11A9	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	50 Tests	564377
IFN-γ	Hu	4S.B3	Mouse IgG ₁ , κ	IC/FCM	RUO	BD Horizon BUV737	50 Tests	564620
IgD	Hu	IA6-2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV737	50 Tests	564687
IgG	Hu	G18-145	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV737	50 Tests	564861
IL-2	Hu	MQ1-17H12	Rat IgG _{2a} , κ	IC/FCM	RUO	BD Horizon BUV737	50 Tests	564446
TCR αβ	Hu	T10B9.1A-31	Mouse IgM, κ	FCM	RUO	BD Horizon BUV737	100 Tests	564725

BD Horizon Brilliant™ Ultraviolet 737

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3e	Ms	145-2C11	Ar Ham IgG1, κ	FCM	RUO	BD Horizon BUV737	50 µg	564618
CD4	Ms	GK1.5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BUV737	50 µg	564298
CD8a	Ms	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV737	50 µg	564297
CD19	Ms	1D3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV737	50 µg	564296
CD45.1	Ms	A20	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV737	50 µg	564574
CD45.2	Ms	104	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BUV737	50 µg	564880
CD69	Ms	H1.2F3	Ar Ham IgG1, λ3	FCM	RUO	BD Horizon BUV737	50 µg	564684
CD138	Ms	281-2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV737	50 µg	564430
IFN-γ	Ms	XMG1.2	Rat IgG ₁ , κ	IC/FCM	RUO	BD Horizon BUV737	50 µg	564693

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Ham IgG1, κ	FCM, ICtrl	RUO	BD Horizon BUV737	50 µg	564621
Hamster IgG1, λ1	G235-2356	Ar Ham IgG1, λ1	FCM, ICtrl	RUO	BD Horizon BUV737	50 µg	564682
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BUV737	50 µg	564299
Mouse IgG2a, κ	G155-178	Mouse IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BUV737	50 µg	564440
Mouse IgG2b, κ	27-35	Mouse IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BUV737	50 µg	564429
Mouse IgM, κ	G155-228	Mouse IgM, κ	FCM, ICtrl	RUO	BD Horizon BUV737	50 µg	564711
Rat IgG1, κ	R3-34	Rat IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BUV737	50 µg	564690
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BUV737	50 µg	564294
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BUV737	50 µg	564295

BD Horizon Brilliant™ Ultraviolet 805

BD Horizon Brilliant™ Ultraviolet 805 (BUV805) is a UV-excitable dye that has been developed exclusively by BD Biosciences to provide more options for flow cytometers equipped with a 355-nm laser.

BUV805 is a tandem dye that combines BUV395 and an acceptor dye with an emission maximum at 805 nm. As part of the BD Horizon Brilliant Ultraviolet family, BUV805 allows more flexibility in panel design by providing an additional fluorochrome option for the UV laser.

BD Horizon™ BUV805	
Relative Brightness	Dim
Ex (max)	348 nm
Em (max)	805 nm
Filter	820/60, 770LP
Compatible BD Biosciences instruments	BD LSRFortessa X-20 equipped with a 355-nm ultraviolet laser with more than 3 PMTs
Alternative fluorochromes	None

Specificity	Stain Index	
	BD Horizon BUV805	BD Horizon V450
Human CD4	60	36
Human CD20	274	214
Mouse CD4	27	37
Mouse CD8a	45	34

Table 1. Stain index comparison of Hu CD4, Hu CD20, Ms CD4 and Ms CD8a stained with BUV496 and FITC reagents. Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

BD Horizon™ BUV805

BD Horizon Brilliant™ Ultraviolet 805

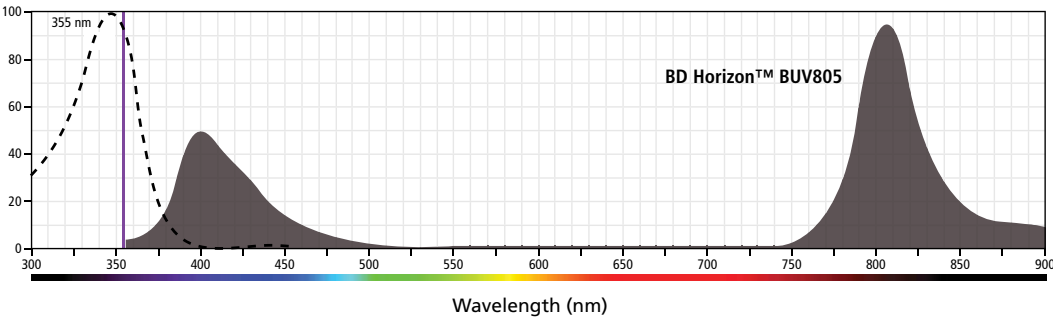


Figure 1. Excitation and Emission profile of BUVR805.

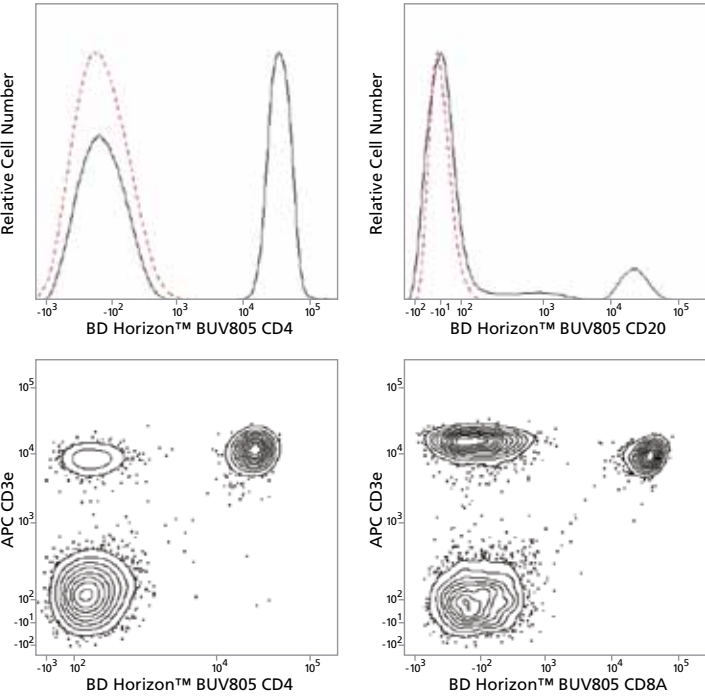


Figure 2. Top Row: Lysed whole blood stained with CD4 or CD20 BUVR805 and appropriate isotype control. Data shown on lymphocytes. Bottom Row: Mouse splenocytes stained with CD3e APC and CD4 or CD8a BUVR805.

Laser		BUVR805 %Spillover into other channels					
		BUVR395	BUVR496	BUVR661	BUVR737	BUVR805	
Ultraviolet		BUVR395	BUVR496	BUVR661	BUVR737	BUVR805	
	BUVR805	1%	0%	0%	0%		
Violet		BV421	BV510	BV605	BV650	BV711	BV786
	BUVR805	0%	0%	0%	0%	0%	1%
Blue		FITC	PE	PE-CF594	PE-Cy5	PerCP-Cy5.5	PE-Cy7
	BUVR805	0%	0%	0%	0%	0%	0%
Red					APC	Alexa Fluor® 700	APC-Cy7
	BUVR805				0%	0%	1%

Table 2. BUVR805 spillover into other channels.

This table shows relative spillover values of the dyes, which can vary as a function of PMT voltage. White represents little to no spectral overlap. The green fill color denotes a small degree of spectral overlap between dyes. Yellow and red fill colors denote where there is more spectral overlap between dyes.

BD Horizon Brilliant™ Ultraviolet 805

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD4	Hu	SK3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV805	25 Tests	564911
				FCM	RUO	BD Horizon BUV805	100 Tests	564910
CD8	NHP	SK1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV805	25 Tests	564913
				FCM	RUO	BD Horizon BUV805	100 Tests	564912
CD20	NHP	2H7	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV805	25 Tests	564918
				FCM	RUO	BD Horizon BUV805	100 Tests	564917
CD45	Human	HI30	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BUV805	25 Tests	564915
				FCM	RUO	BD Horizon BUV805	100 Tests	564914

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD4	Mouse	GK1.5	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BUV805	50 µg	564922
CD8a	Mouse	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BUV805	50 µg	564920

BD Horizon Brilliant™ Ultraviolet 805

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Mouse IgG1, κ	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BUV805	50 µg	564909
Mouse IgG2b, κ	27-35	Mouse IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BUV805	50 µg	564916
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BUV805	50 µg	564919
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BUV805	50 µg	564921

BD Horizon Brilliant™ Blue 515

BD Horizon Brilliant™ Blue 515 (BB515) was developed exclusively by BD Biosciences as a brighter alternative to FITC. Compared to FITC, this dye also has less spillover into the PE channel, making it more optimal for multicolor flow cytometry.

BD Horizon BB515 is significantly brighter than FITC and has less spillover into neighboring channels (Table 1 and 2, Figure 2). The dye is optimal for dimmer markers, such as CD25, for which better resolution improves the quality of a panel. CD25 FITC or CD25 BB515 was used to identify regulatory T cells (Tregs) in a panel including CD4 APC, CD127 PE, and CD3 PerCP-Cy5.5. While both panels resolve the Treg population, the panel including CD25 BB515 shows significantly better separation of the CD25 positive cells from the CD25 negative cells (Figure 3). FoxP3 transcripts have been identified in CD4⁺CD25^{hi}CD127^{dim} cells, and optimal

resolution of these markers is necessary to identify the various subsets within the panel. The FITC format is too dim to fully resolve the CD25 bright cells from the intermediates. However, the brightness of BD Horizon BB515 provides excellent resolution with optimal identification of the Treg population. This provides more flexibility in panel design; previously the FITC channel had to be reserved for highly expressed markers. With the introduction of the BD Horizon BB515 format, researchers can now use this channel to optimally resolve both dimly and highly expressed markers.

BD Horizon™ BB515	
Relative Brightness	Brightest
Ex (max)	490 nm
Em (max)	515 nm
Filter	530/30
Compatible BD Biosciences instruments	All BD flow cytometers and cell sorters with a blue laser: BD Accuri™ C6, BD FACSCalibur™, BD FACSVerse™, BD FACSCanto™ II, BD LSRFortessa™, BD FACSARIA™, BD Influx™, BD FACSJazz™
Alternative fluorochromes	FITC, Alexa Fluor® 488

Specificity	Stain Index		
	BB515	FITC	Alexa Fluor® 488
Human CD3	302	43	81
Human CD4	174	47	58
Human CD19	85	16	15
Mouse CD8a	86	24	50
Mouse CD11b	68	15	26

Table 1. BD Horizon BB515, Alexa Fluor® 488, and FITC reagents of the same clone were run side by side to compare the stain index. Relative stain index values are dependent on the instrument configuration, including lasers, filters, and laser power.

	Spillover Into		
	BV510	PE	PE-CF594
Human CD4 BB515	2%	20%	6%
Human CD4 FITC	6%	27%	9%

Table 2. Spillover into various detectors comparing BD Horizon BB515 and FITC. Whole blood samples stained with human CD4 BB515 or FITC were analyzed on a BD LSRFortessa system, and spillover was measured in the BV510, PE, and PE-CF594 detectors. This table is meant to show a relative comparison between the dyes, since spillover values obtained can vary depending on the filter used and PMT voltage.

BD Horizon Brilliant™ Blue 515

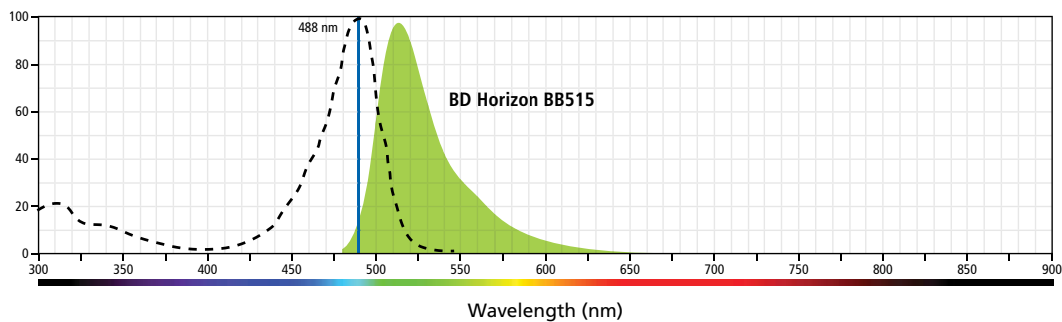


Figure 1. Absorption and emission spectra.

Ex Max: 490, Em Max: 515

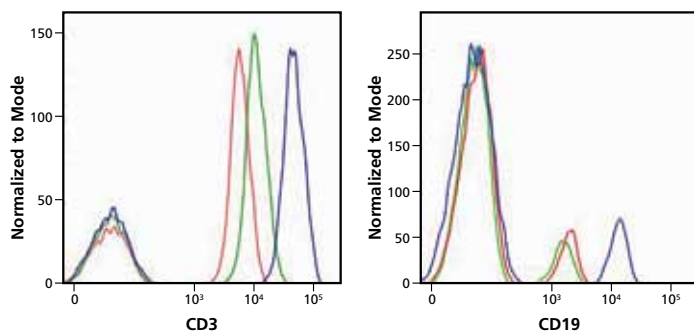


Figure 2. Lysed whole blood stained with Hu CD3 or CD19 FITC (red), BB515 (blue), or Alexa Fluor® 488 (green).

Data shown was gated on lymphocytes.

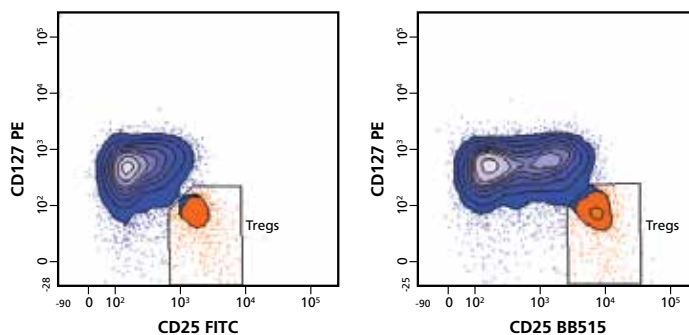


Figure 3. Whole blood was stained with Hu CD4 APC, CD127 PE, CD3 PerCP-Cy5.5, and CD25 FITC or CD25 BB515, and analyzed on a BD FACSVerse flow cytometer.

Data shown was gated on CD4⁺CD3⁺ lymphocytes.

BD Horizon Brilliant™ Blue 515

Human and Non Human Primate (NHP)

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD3	Hu	UCHT1	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564466
				FCM	RUO	BD Horizon BB515	100 Tests	564465
CD4	Hu	RPA-T4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564420
				FCM	RUO	BD Horizon BB515	100 Tests	564419
CD4	Bab, Cyno, Rhe	L200	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	50 Tests	564500
CD5	Hu	UCHT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564648
CD5	Hu	UCHT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564647
CD8	Hu	RPA-T8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564526
CD8	Hu	RPA-T8	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564527
CD10	Hu	HI10a	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564639
CD10	Hu	HI10a	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564638
CD11b	Hu	ICRF44	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564518
				FCM	RUO	BD Horizon BB515	100 Tests	564517
CD11c	Hu	B-ly6	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564491
				FCM	RUO	BD Horizon BB515	100 Tests	564490
CD13	Hu	WM15	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	50 Tests	564649
CD19	Hu	HIB19	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564457
				FCM	RUO	BD Horizon BB515	100 Tests	564456
CD23	Hu	M-L233	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564555
CD24	Hu	ML5	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	25 Tests	564522
				FCM	RUO	BD Horizon BB515	100 Tests	564521
CD25	Hu	2A3	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564468
				FCM	RUO	BD Horizon BB515	100 Tests	564467
CD27	Hu	M-T271	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564642
				FCM	RUO	BD Horizon BB515	100 Tests	564642
CD28	Hu	CD28.2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564493
				FCM	RUO	BD Horizon BB515	100 Tests	564492
CD29	Hu	MAR4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564565
CD31	Hu	WM59	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564630
CD33	Hu	WM53	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564588
CD38	Hu	HIT2	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564499
				FCM	RUO	BD Horizon BB515	100 Tests	564498
CD44	Hu	G44-26	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BB515	100 Tests	564582
				FCM	RUO	BD Horizon BB515	25 Tests	564583
CD45	Hu	HI30	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564585
				FCM	RUO	BD Horizon BB515	25 Tests	564586
CD45RA	Hu	HI100	Mouse IgG _{2b} , κ	FCM	RUO	BD Horizon BB515	100 Tests	564552
CD45RO	Hu	UCHL1	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	25 Tests	564530
				FCM	RUO	BD Horizon BB515	100 Tests	564529
CD49d	Bab, Cyno, Dog, Hu, Rhe	9F10	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564593
CD55	Hu	IA10	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	50 Tests	565027
CD56	Hu	B159	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564489
				FCM	RUO	BD Horizon BB515	100 Tests	564488
CD62P	Hu	AK-4	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564636
CD86	Bab, Cyno, Hu, Rhe	2331 (FUN-1)	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564545
				FCM	RUO	BD Horizon BB515	100 Tests	564544
CD95	Bab, Cyno, Dog, Hu, Pig, Rhe DX2		Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	25 Tests	564597
				FCM	RUO	BD Horizon BB515	100 Tests	564596
CD102	Hu	CBR-IC2/2	Mouse IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	50 Tests	564676
CD126	Hu	M5	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	100 Tests	564623
CD127	Hu	HIL-7R-m21	Mouse IgG ₁ , κ	FCM	RUO	BD Horizon BB515	50 Tests	564423
CD132	Hu	TUGh4	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BB515	50 Tests	564528

BD Horizon Brilliant™ Blue 515

Human and Non Human Primate (NHP) *continued*

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD146	Hu	P1H12	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	100 Tests	564644
CD196 (CCR6)	Hu	11A9	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	50 Tests	564479
CD195	Hu	3A9	Mouse IgG _{2a} κ	FCM	RUO	BD Horizon BB515	100 Tests	564512
CD209	Hu	DCN46	Mouse IgG _{2b} κ	FCM	RUO	BD Horizon BB515	100 Tests	564548
CD227	Hu	HMPV	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	100 Tests	564640
CD271	Hu	C40-1457	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	100 Tests	564580
CD274	Hu	MIH1	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	100 Tests	564554
CD279 (PD-1)	Hu	EH12.1	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	50 Tests	564494
CD314 (NKG2D)	Hu	1D11	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	100 Tests	564566
CD335	Hu	α;R1	Mouse IgG _{2a} κ	FCM	RUO	BD Horizon BB515	50 Tests	564594
CD335	Hu	9E2/NKp46	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	100 Tests	564536
CD335	Hu	9E2/NKp46	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	25 Tests	564537
CXCR5	Hu	RF8B2	Rat IgG _{2b} κ	FCM	RUO	BD Horizon BB515	100 Tests	564624
HLA-A2	Hu	BB7.2	Mouse IgG _{2b} κ	FCM	RUO	BD Horizon BB515	50 µg	564577
HLA-DR	Bab, Cyno, Hu, Rhe	G46-6	Mouse IgG _{2a} κ	FCM	RUO	BD Horizon BB515	100 Tests	564516
IgG	Hu	G18-145	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	100 Tests	564581
IgM	Hu	G20-127	Mouse IgG ₁ κ	FCM	RUO	BD Horizon BB515	100 Tests	564622
RANTES	Hu	2D5	Mouse IgG ₁ κ	IC/FCM	RUO	BD Horizon BB515	50 Tests	564752

BD Horizon Brilliant™ Blue 515

Mouse

DESCRIPTION	REACT	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
CD8a	Ms	53-6.7	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	25 µg	564459
				FCM	RUO	BD Horizon BB515	0.1 mg	564422
CD11b	Ms	M1/70	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BB515	25 µg	564455
				FCM	RUO	BD Horizon BB515	0.1 mg	564454
CD19	Ms	1D3	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	100 µg	564509
				FCM	RUO	BD Horizon BB515	25 µg	564531
CD23	Ms	B3B4	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	50 µg	564637
CD25	Ms	PC61	Rat IgG ₁ , λ	FCM	RUO	BD Horizon BB515	25 µg	564458
				FCM	RUO	BD Horizon BB515	0.1 mg	564424
CD44	Ms	IM7	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BB515	50 µg	564587
CD45	Ms	30-F11	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BB515	50 µg	564590
CD93	Ms	AA4.1	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BB515	50 µg	564700
CD105	Ms	MJ7/18	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	50 µg	564744
CD138	Ms	281-2	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	50 µg	564511
CD278	Ms	7E.17G9	Rat IgG _{2b} , κ	FCM	RUO	BD Horizon BB515	50 µg	564592
IL-23 Receptor	Ms	O78-1208	Rat IgG ₁ , κ	FCM	RUO	BD Horizon BB515	50 µg	565011
Siglec-F	Ms	E50-2440	Rat IgG _{2a} , κ	FCM	RUO	BD Horizon BB515	50 µg	564514

Isotype Controls

DESCRIPTION	CLONE	ISOTYPE	APPS	REG	FORMAT	SIZE	CAT. NO.
Hamster IgG1, κ	A19-3	Ar Ham IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BB515	0.1 mg	564460
Mouse IgG1	X40	Mouse IgG ₁ , κ	FCM, ICtrl	RUO	BD Horizon BB515	0.1 mg	564416
Mouse IgG2a, κ	G155-178	Mouse IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BB515	50 µg	564515
Rat IgG2a, κ	R35-95	Rat IgG _{2a} , κ	FCM, ICtrl	RUO	BD Horizon BB515	0.1 mg	564418
Rat IgG2b, κ	R35-38	Rat IgG _{2b} , κ	FCM, ICtrl	RUO	BD Horizon BB515	0.1 mg	564421
Rat IgG1, λ	A110-1	Rat IgG ₁ , λ	FCM, ICtrl	RUO	BD Horizon BB515	0.1 mg	564417

Streptavidin Reagents

DESCRIPTION	APPS	REG	FORMAT	SIZE	CAT. NO.
Streptavidin	FCM	RUO	BD Horizon BB515	100 µg	564453
	FCM	RUO	BD Horizon BUV395	100 µg	564176
	FCM	RUO	BD Horizon BUV496	100 µg	564666
	FCM	RUO	BD Horizon BUV661	100 µg	565081
	FCM	RUO	BD Horizon BUV737	100 µg	564293
	FCM	RUO	BD Horizon BUV805	100 µg	564923
	FCM	RUO	BD Horizon BV421	100 µg	563259
	FCM	RUO	BD Horizon BV510	100 µg	563261
	FCM	RUO	BD Horizon BV605	100 µg	563260
	FCM	RUO	BD Horizon BV650	100 µg	563855
	FCM	RUO	BD Horizon BV711	100 µg	563262
	FCM	RUO	BD Horizon BV786	100 µg	563858

Streptavidin

BD LSRFortessa™ X-20 System

Five-Color Panels Designed for Minimal Compensation

In this experiment, a five-laser BD LSRFortessa™ X-20 flow cytometer was used in combination with BD reagents to design panels that are optimized for minimal compensation and optimal signal by selecting one bright fluorochrome per laser. Three different panels are shown: human T cell, human B cell, and mouse B cell.

Protocol

PBMCs were prepared by using Ficoll-Paque™ Plus according to the manufacturer's directions and incubated with antibodies at room temperature protected from light for 20 minutes, washed, and acquired on a BD LSRFortessa X-20 flow cytometer. Single cells were identified by gating on FSC-A vs FSC-H. Lymphocytes were then identified based on FSC vs SSC and further analyzed as described in the subsequent figures.

For mouse experiments, C57BL6 spleen was harvested into a single-cell suspension using a cell strainer and syringe plunger. Red blood cells were lysed using BD Pharm Lyse™ lysing buffer (Cat. No. 555899) on ice for 2 minutes. Cells were subsequently washed, stained with antibodies for 30 minutes on ice, washed, and acquired on a BD LSRFortessa X-20 flow cytometer.

Analyzer Configuration

Laser	Filter	Fluorochrome	Human T-Cell Panel	Human B-Cell Panel	Mouse B-Cell Panel
Blue 488 nm	530/30	FITC	CD8	IgD	IgD
Yellow-Green 561 nm	610/20	PE-CF594	CD27	CD38	IgM
Red 640 nm	670/30	APC	CD45RA	IgM	CD21
Violet 405 nm	450/40	BV421	CD3	CD27	CD23
Ultraviolet 355 nm	379/28	BUV395	CD4	CD19	CD19

Compensation*

Fluorochrome	(-) % Fluorochrome	% Compensation
FITC		0.00%
PE-CF594	BV421	0.00%
APC		0.00%
BUV395		0.00%
BV421		0.02%
PE-CF594	FITC	0.00%
APC		0.04%
BUV395		0.00%
BV421		0.00%
FITC	PE-CF594	0.29%
APC		1.39%
BUV395		0.00%
BV421		0.00%
FITC	APC	0.00%
PE-CF594		0.03%
BUV395		0.00%
BV421		1.57%
FITC	BUV395	0.00%
PE-CF594		0.00%
APC		0.24%

*Representative compensation values. Compensation varies as a function of PMT voltage.

BD LSRFortessa™ X-20 System

Five-Color Panels Designed for Minimal Compensation

Data

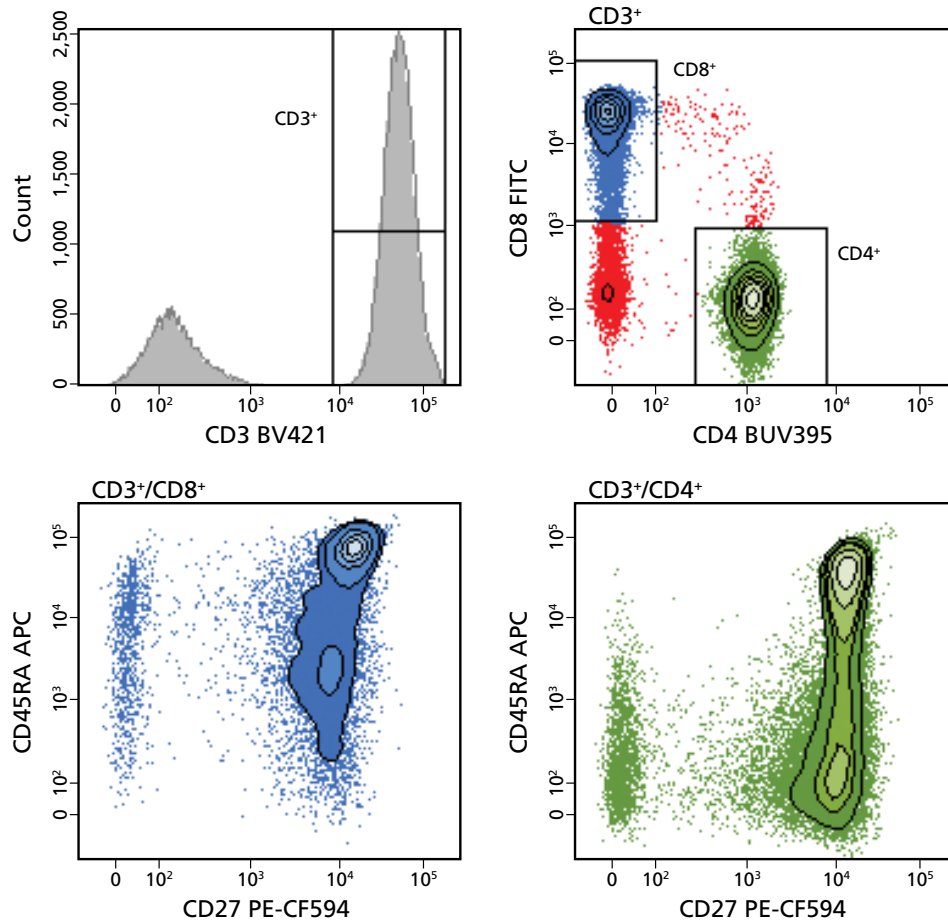


Figure 1. Analysis of Human Naïve, Effector, and Memory T Cells.

Human PBMCs were stained with CD4 BUV395, CD8 FITC, CD3 BV421, CD27 PE-CF594, and CD45RA APC. Singlet lymphocytes were discriminated based on light scatter properties, and the CD3⁺ population was identified (**top left**). Traditional CD4 and CD8 T-cell subsets can be gated on from the CD3⁺ lymphocyte population (**top right**). Within the CD8⁺ (**bottom left**) and CD4⁺ (**bottom right**) T-cell subsets, naïve (CD27⁺CD45RA⁺), memory (CD27⁺CD45RA⁻), and effector (CD45⁺/CD27⁻) T cells can be identified.

BD LSRFortessa™ X-20 System

Five-Color Panels Designed for Minimal Compensation

Data

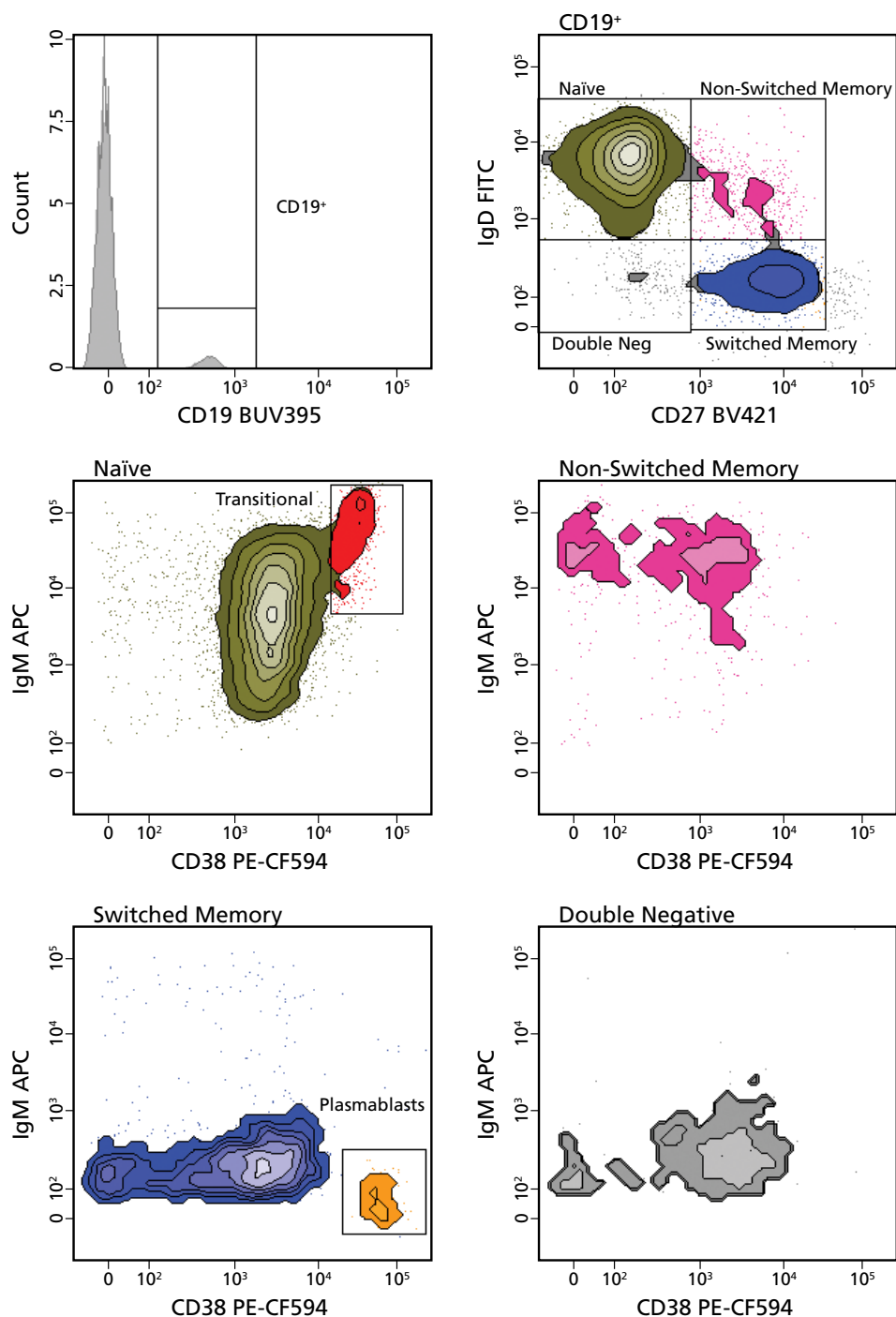


Figure 2. Analysis of Human B-Cell Subsets.

Human PBMCs were stained with CD19 BUV395, CD27 BV421, IgD FITC, CD38 PE-CF594, and IgM APC. Singlet lymphocytes were discriminated based on light scatter properties, and the CD19⁺ population was identified (top left). Naïve, non-switched, switched memory, and double negative B-cell subsets can be identified from the CD19⁺ lymphocyte population based on expression of CD27 and IgD (top right). Within all subsets, IgM vs CD38 expression was analyzed (middle and bottom). Within the naïve B-cell subset (middle left), transitional B cells can be identified as IgM⁺CD38⁺. Within the switched memory subset (bottom left), plasmablasts can be identified as IgM⁺CD38⁺.

BD LSRFortessa™ X-20 System

Five-Color Panels Designed for Minimal Compensation

Data

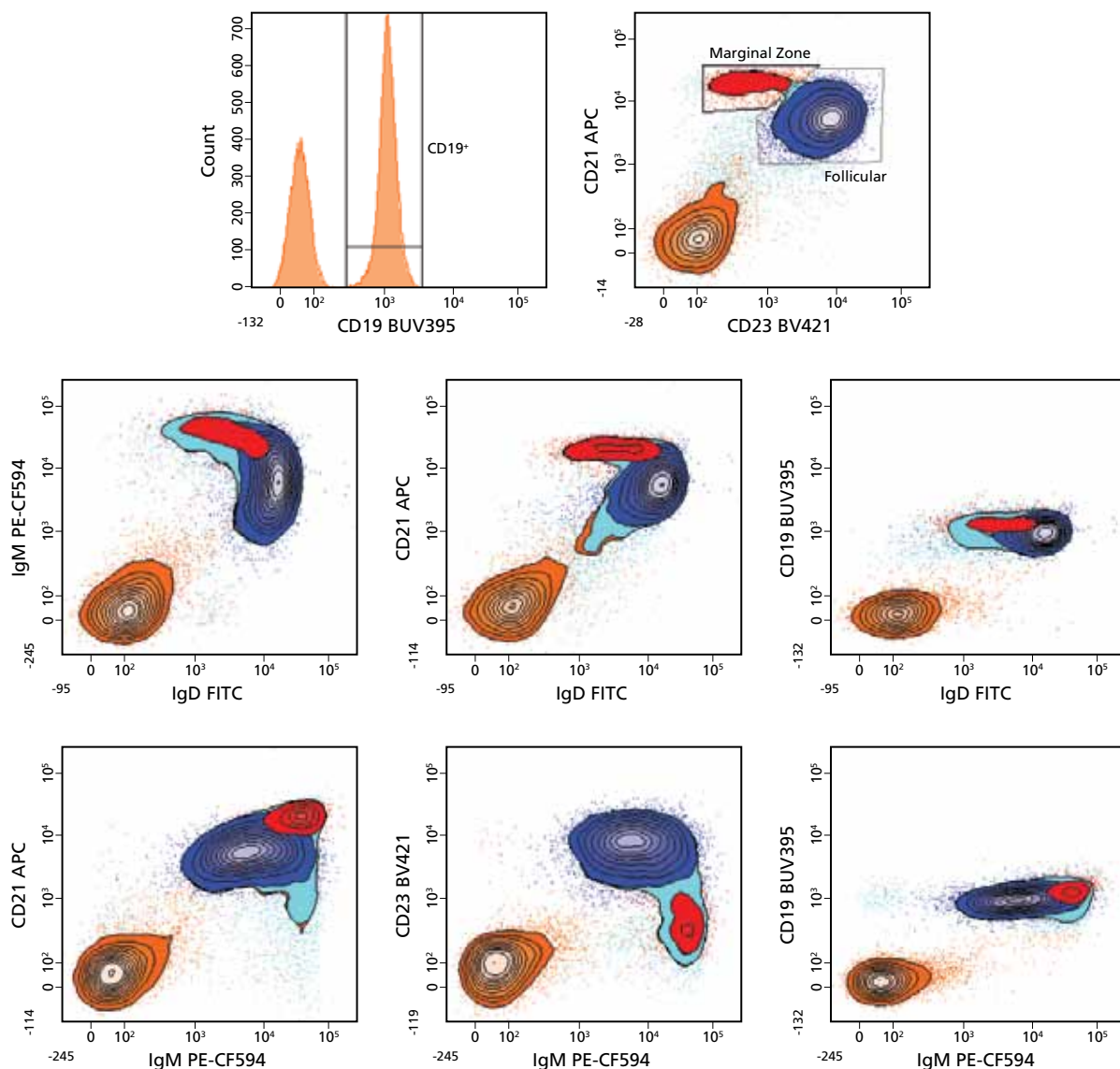


Figure 3. Analysis of Mouse Marginal Zone and Follicular B Cells.

C57BL/6 splenocytes were stained with CD19 BUV395, CD23 BV421, IgD FITC, IgM PE-CF594, and CD21 APC. CD19⁺ B cells (top left) can be subdivided into follicular and marginal zone cells based on expression of CD23 and CD21 (top right). The variable expression of CD21, CD23, IgM, and IgD is shown for the two subsets in the middle and bottom rows. The marginal zone cells show higher expression of IgM and CD21 compared to the follicular cells. In comparison, the expression of CD23 and IgD is higher on the follicular cells.

Conclusion

The five-laser configuration of the BD LSRFortessa X-20 system, combined with novel BD Horizon Brilliant Violet and BD Horizon Brilliant Ultraviolet reagents, enables optimal panel design based on antigen density and fluorochrome brightness while optimizing signal by using all five lasers simultaneously.

BD LSRFortessa™ X-20

Fifteen-Color Immunophenotyping

In this experiment, the BD LSRFortessa X-20 system was used in combination with BD reagents to stain human peripheral blood mononuclear cells (PBMCs) for analysis of common T-cell, B-cell, NK-cell, dendritic-cell (DC), and monocyte subsets. Three different gating strategies enabled identification of T cells, NK-T cells, and regulatory T cells (Tregs); B cells, NK cells, and DCs; and monocytes. The five-laser configuration of the BD LSRFortessa X-20 flow cytometer combined with novel BD Horizon Brilliant Violet and BD Horizon Brilliant Ultraviolet reagents enables optimal panel design based on antigen density and fluorochrome brightness.

Protocol

PBMCs were isolated by preparing a mononuclear cell fraction using Ficoll-Paque Plus. Briefly, 15 mL of whole blood was diluted with 15 mL of phosphate buffered saline (PBS) + 2% fetal bovine serum (FBS). The entire 30 mL of diluted blood was layered over 15 mL of Ficoll-Paque Plus in a 50-mL Falcon® tube. Blood was centrifuged at 400g for 30 minutes at room temperature with the brake off. PBMCs were removed from the plasma-Ficoll interface and washed

twice with BD Pharmingen™ stain buffer. Cells were counted and aliquoted at 1×10^6 cells per tube and incubated with antibodies on ice for 20 minutes, washed, and acquired on a BD LSRFortessa X-20 flow cytometer. Single cells were identified by gating on FSC-A vs FSC-H. Lymphocytes or monocytes were then identified based on FSC vs SSC and further analyzed as described in the subsequent figures.

Instrument Configuration

Laser	Filter	Fluorochrome	Specificity	Clone	Cat. No.
Blue 488 nm	530/30	FITC	CD57	HNK-1	347393
	695/40	PerCP-Cy5.5	CD3	SK7	340949
Yellow-Green 561 nm	586/15	PE	CD11c	S-HCL-3	347637
	610/20	BD Horizon PE-CF594	CD16	3G8	562293
	780/60	PE-Cy7	CD33	P67.6	333946
Red 640 nm	670/30	APC	CD56	NCAM16.2	341025
	730/45	Alexa Fluor® 700	CD20	2H7	560631
	780/60	APC-H7	HLA-DR	L243	641393
Violet 405 nm	450/40	BD Horizon BV421	CD123	9F5	562517
	525/50	BD Horizon V500	CD14	MφP9	562693
	610/20	BD Horizon BV605	CD25	2A3	562660
	660/20	BD Horizon BV650	CD335 (NKp46)	9E2/Nkp46	563230
	710/50	BD Horizon BV711	CD8	RPA-T8	563676
	780/60	BD Horizon BV786	CD19	SI25C1	563325
Ultraviolet 355 nm	379/28	BD Horizon BUV395	CD4	SK3	563550

BD LSRFortessa™ X-20

Fifteen-Color Immunophenotyping

Data

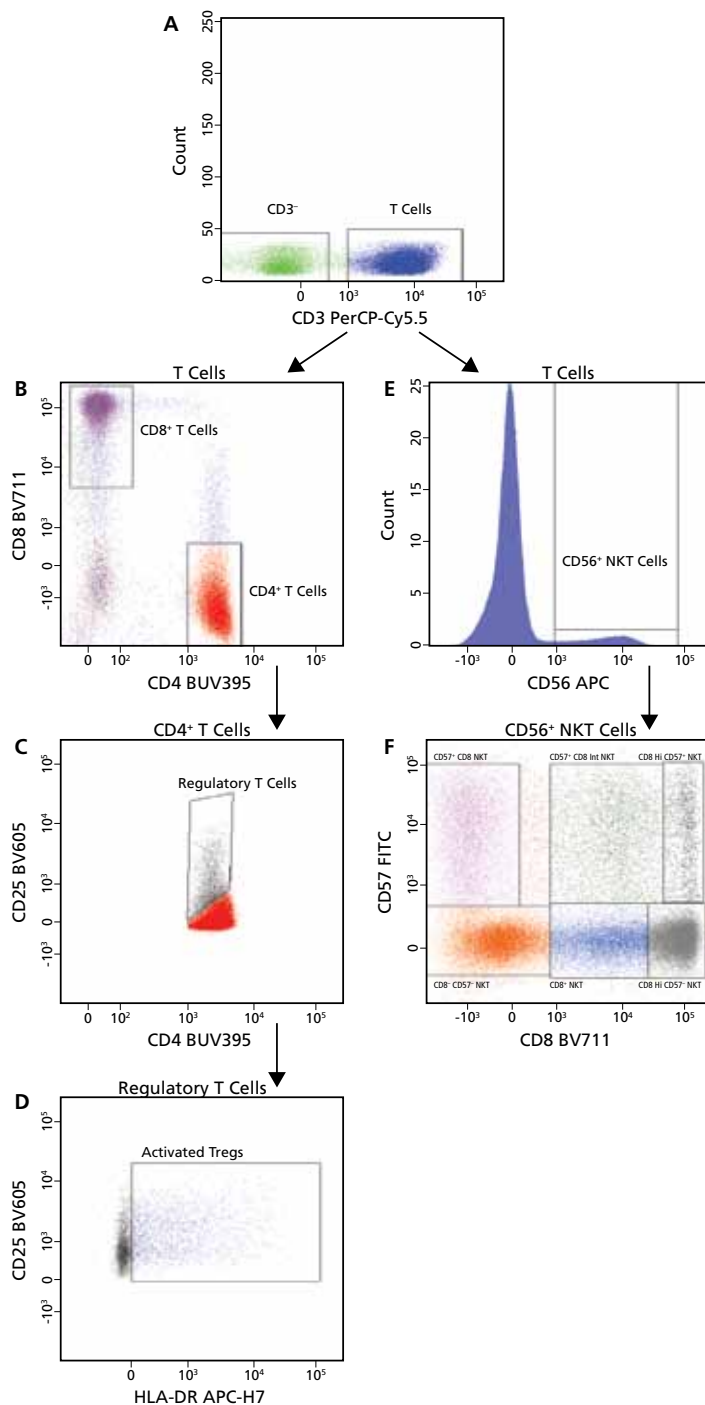


Figure 1. Distinguishing helper and cytotoxic T cells, Tregs, and NK-T cells.

The CD3⁺ population (A) contains traditional CD4 and CD8 T cells in addition to Tregs and natural killer T cells. Gating on CD4⁺ T cells (B) allows the identification of CD25⁺ Tregs (C) that can be further analyzed for activation based on HLA-DR expression (D). Natural killer T cells are characterized by CD56 expression within the CD3⁺ subset (E). With the use of multicolor flow cytometry, we can identify NK-T-cell subsets based on CD57 and CD8 expression (F).

BD LSRFortessa™ X-20

Fifteen-Color Immunophenotyping

Data

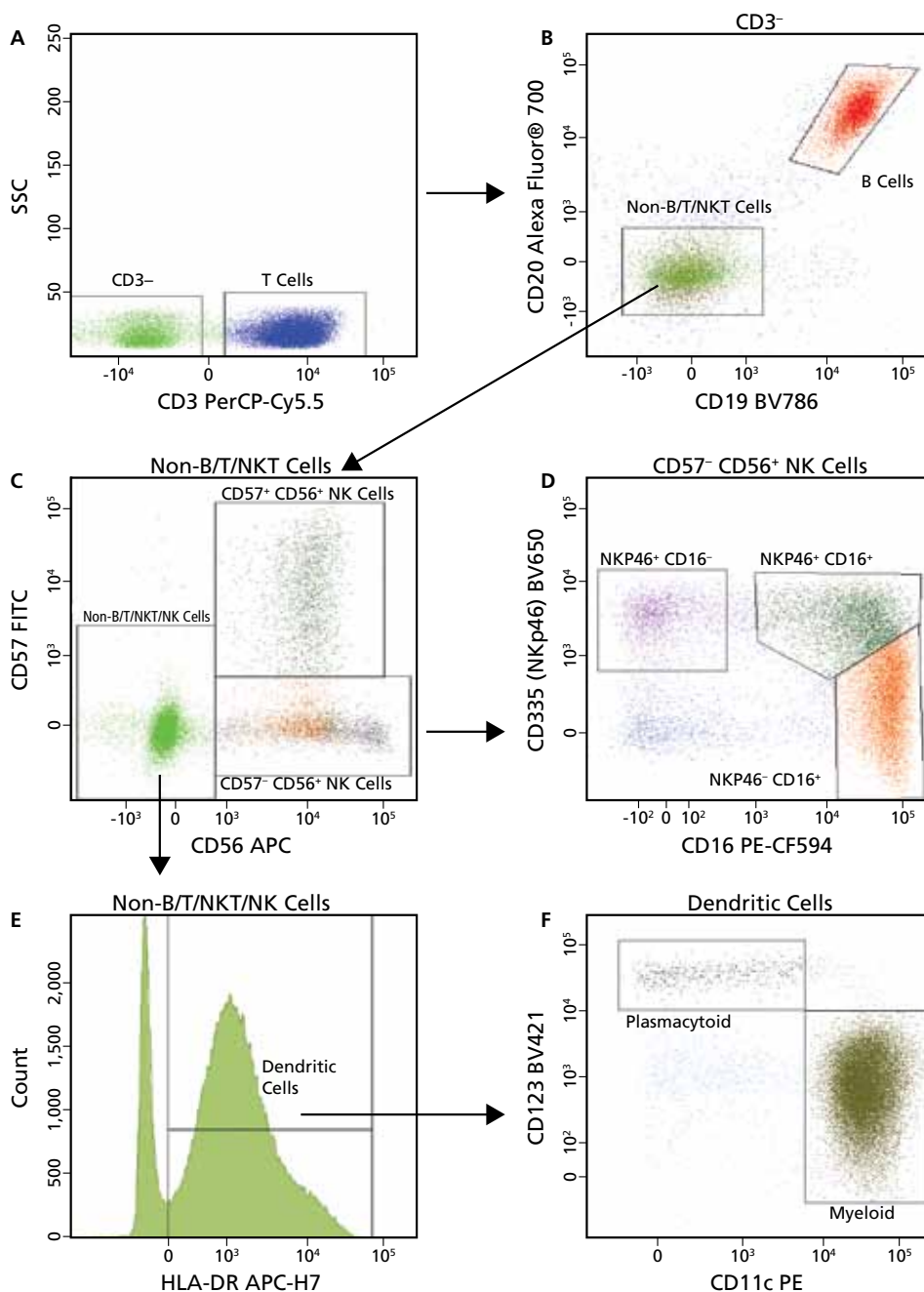


Figure 2. Distinguishing B cells, NK cells, and DC subsets.

Gating CD3⁻ negative cells (**A**) allows for identification of B cells, NK cells, and DCs. CD19 and CD20 identify the B-cell population, while cells negative for CD19/CD20/CD3 (**B**) include NK cells and DCs (**C**). CD56 and CD57 identify functionally distinct mature NK cell populations from other subsets of NK cells based on CD16 and CD335 expression (**D**). Remaining PBMCs contain dendritic cells that can be identified as CD123^{hi}CD11c⁻ plasmacytoid and CD123⁻CD11c^{hi} myeloid subsets (**E**, **F**).

BD LSRFortessa™ X-20

Fifteen-Color Immunophenotyping

Data

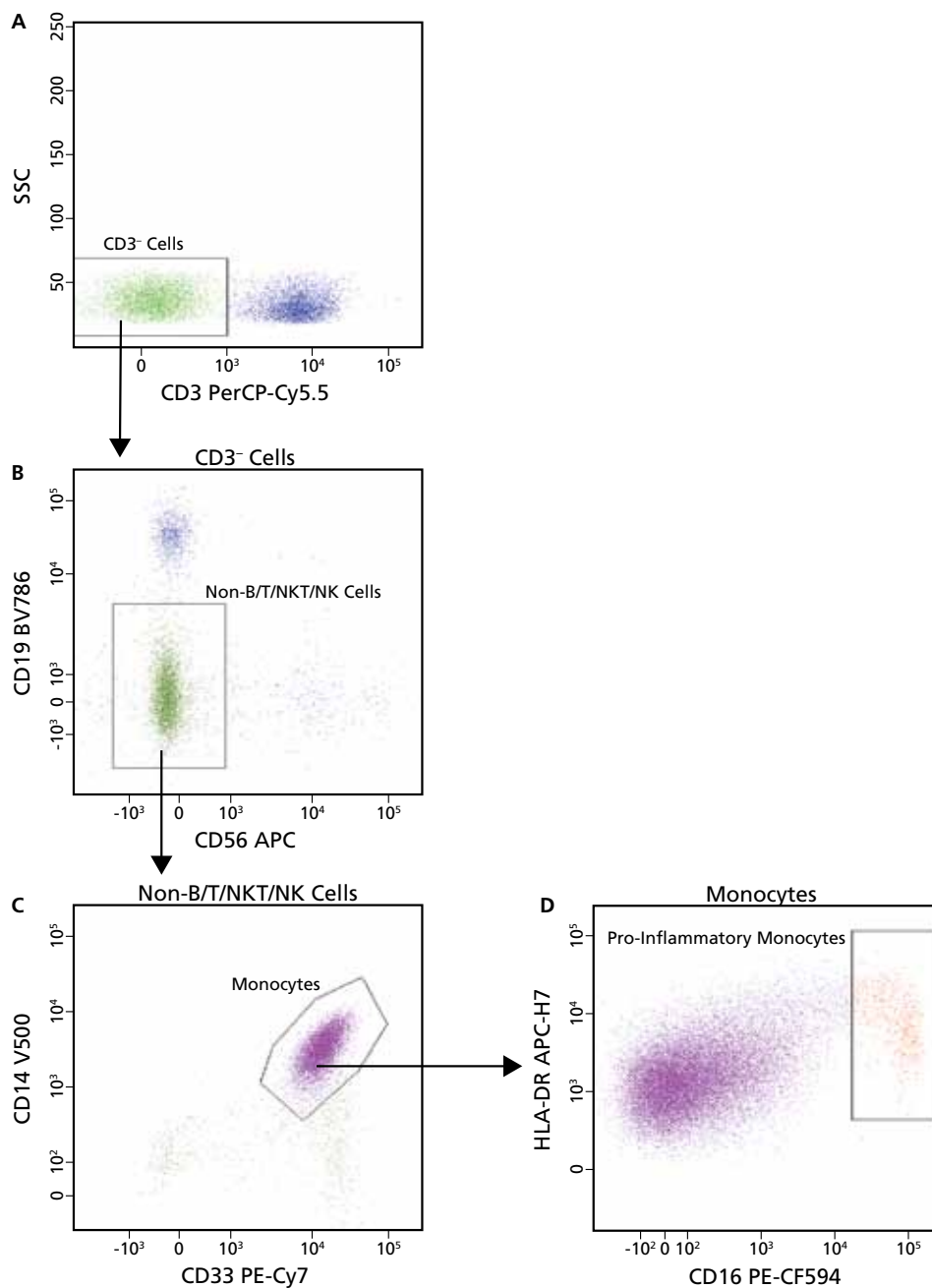


Figure 3. Identification of pro-inflammatory monocytes.

Monocyte gates based on light scatter can be further refined by gating out T, B, and NK cells based on CD3, CD19, and CD56 respectively (A, B). Monocytes are clearly identified based on CD14 and CD33 expression (C). Pro-inflammatory monocytes are identified as CD16^{hi}HLA-DR^{hi} cells (D).

Conclusion

A five-laser BD LSRFortessa X-20 system and BD flow cytometry reagents enable high-order multiplexing of results. In this 15-color example, we were able to subset PBMCs into 7 unique populations.

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