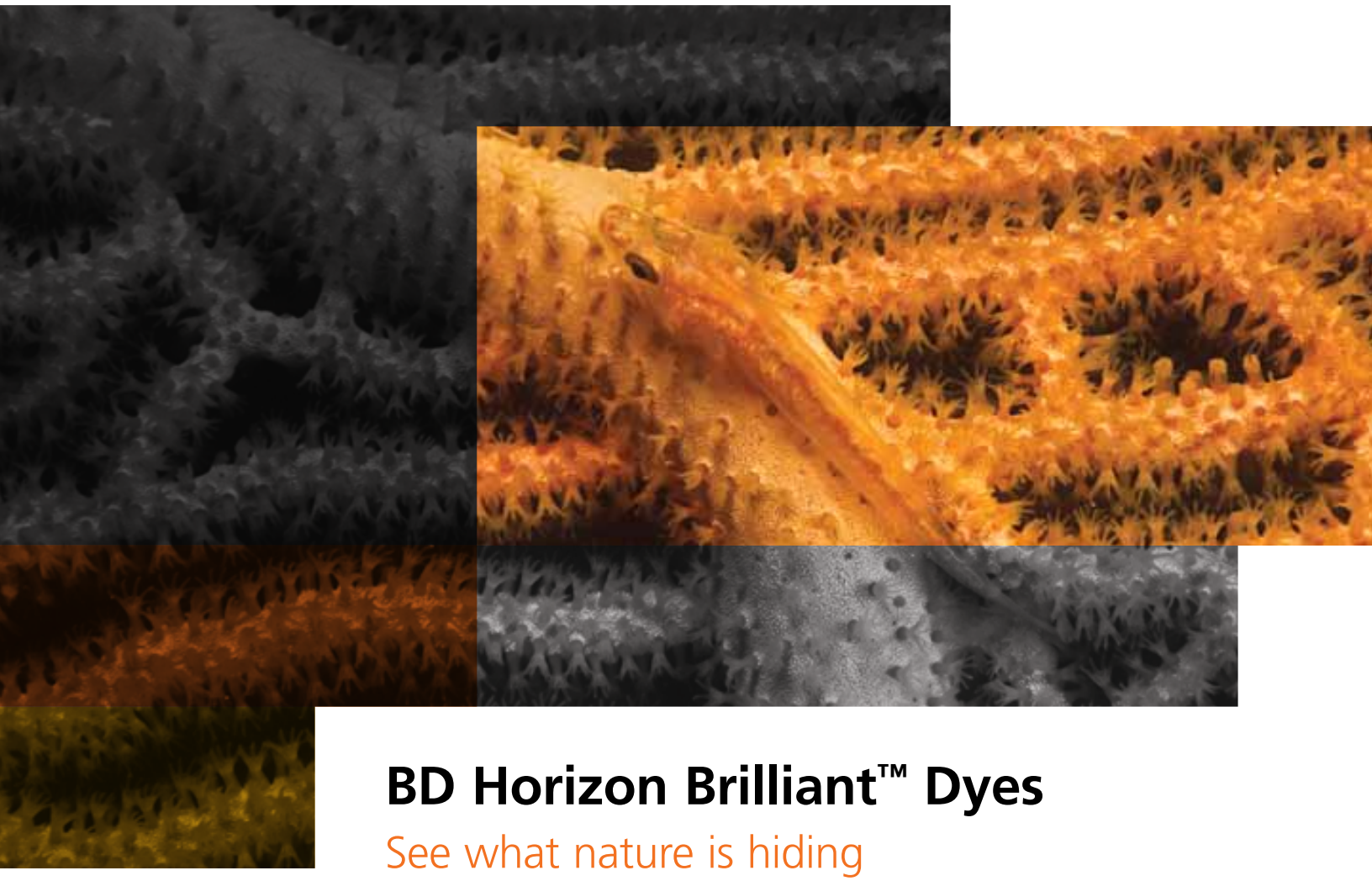
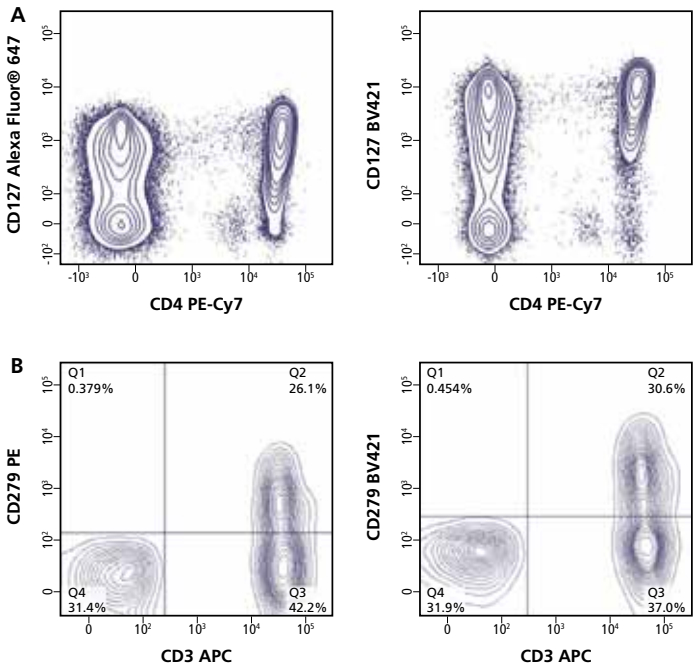


BD Horizon Brilliant™ Dyes

See what nature is hiding

Welcome to a more colorful world[SM]

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-Cy™7 and CD127 Alexa Fluor® 647 or BV421.

B. Cells stained with Hu CD3 APC and CD279 PE or BV421.

BD Horizon Brilliant™ Violet Dyes

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

BD Horizon Brilliant™ 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 Brilliant™ Violet 510 (BV510)
(Ex Max 405 nm/ Em Max 510 nm) is a polymer-based dye that is brighter than BD Horizon™ V500.

BD Horizon Brilliant™ 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 Brilliant™ 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 Brilliant™ 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 Brilliant™ 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

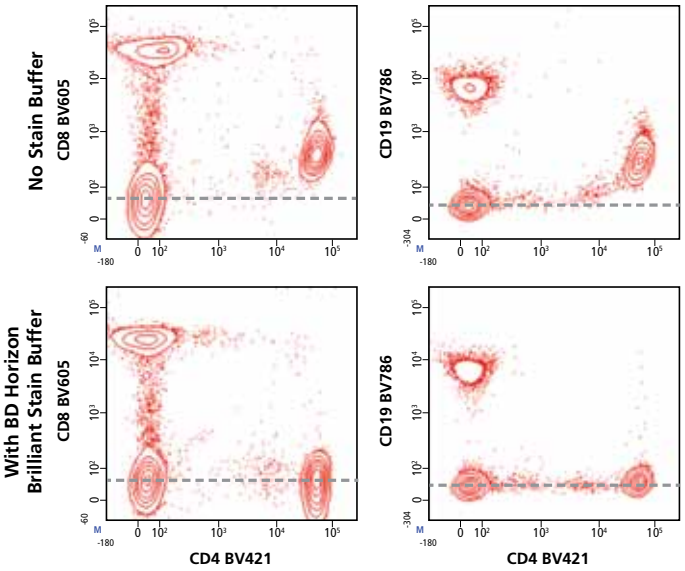
BD Horizon Brilliant™ Blue 515 (BB515) (Ex Max 490 nm/ Em Max 515 nm) is significantly brighter than FITC and has less spillover into neighboring channels.

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 FACSVerse™, 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.

BD Horizon Brilliant™ Violet 421

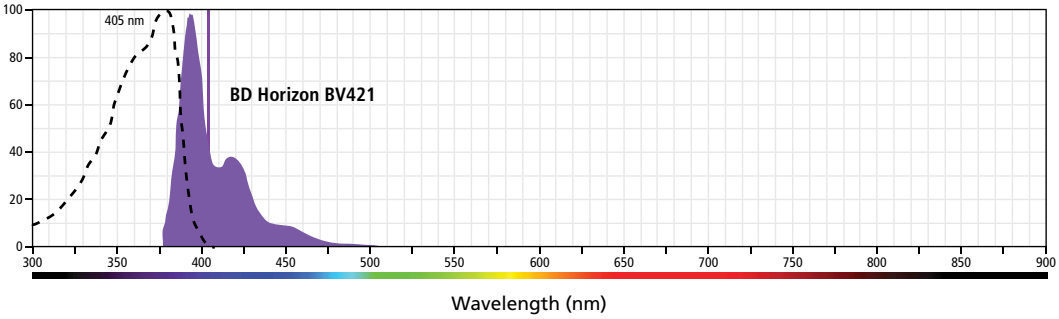


Figure 1. Excitation and emission profile of BV421.

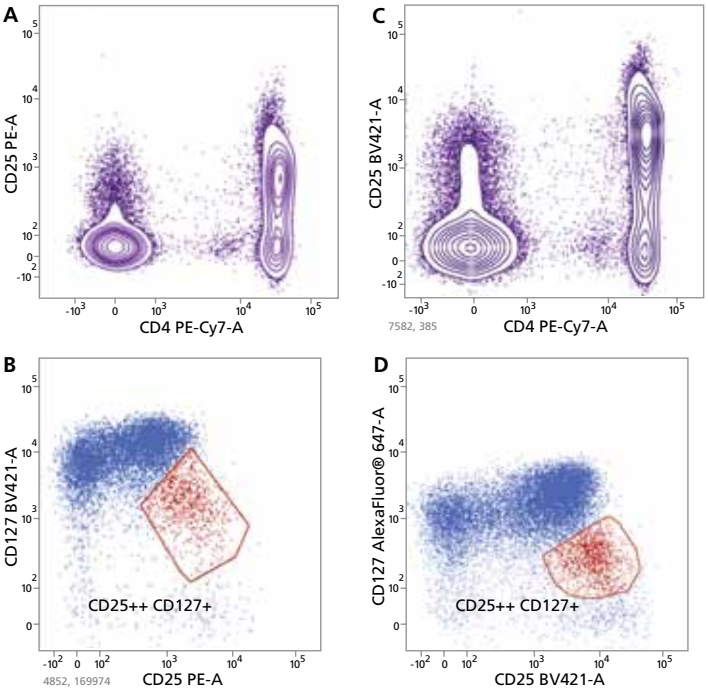


Figure 2. A, B. Lysed whole blood stained with CD3 V500, CD4 PE-Cy™7, CD8 PerCP-Cy™5.5, CD45RA APC, HLA-DR APC-H7, CD25 PE, and CD127 BV421. **C, D.** Lysed whole blood stained with CD3 V500, CD4 PE-Cy7, CD8 PerCP-Cy5.5, CD45RA PE, HLA-DR APC-H7, CD127 Alexa Fluor® 647, and CD25 BV421. The events in 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 FACSVerse flow cytometer.

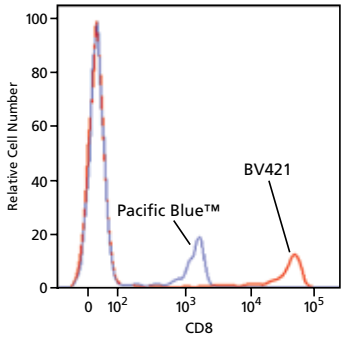


Figure 3. Lysed whole blood stained with CD8 BV421 or Pacific Blue™.

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	SP34-2	Mouse IgG_1, λ	FCM	RUO	BD Horizon BV421	50 Tests	**562877**
	Hu	SK7	Mouse IgG_1, κ	FCM	RUO	BD Horizon BV421	25 Tests	**563797**
				FCM	RUO	BD Horizon BV421	100 Tests	**563798**
		UCHT1	Mouse IgG_1, κ	FCM	RUO	BD Horizon BV421	25 Tests	**562427**
				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	MφP9	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_3, 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	TÜ145	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**
		YB5.B8	Mouse IgG_1, κ	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**

BD Horizon Brilliant™ Violet 421

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**
Fcμ 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_{2b}, 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, k	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**

BD Horizon Brilliant™ Violet 421

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	281-2	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_{2b}, 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_{2b}, 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_{2b}, 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 (Treml2)	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**

BD Horizon Brilliant™ Violet 421

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, λ1	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, λ1	G235-1	Ar Ham IgM, λ1	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 FACSAria platform, BD Influx cell sorter
Alternative fluorochromes	BD Horizon V500, Pacific Orange™, AmCyan, Krome Orange™, VioGreen™

	Stain Index	
Marker	**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.

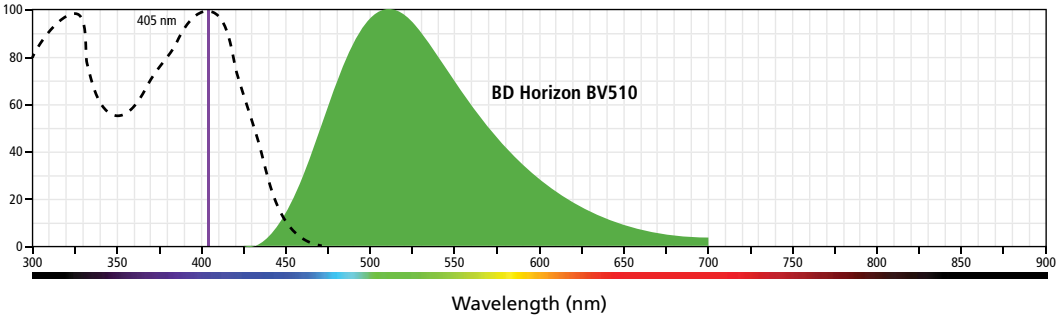


Figure 1. Excitation and emission profile of BV510.

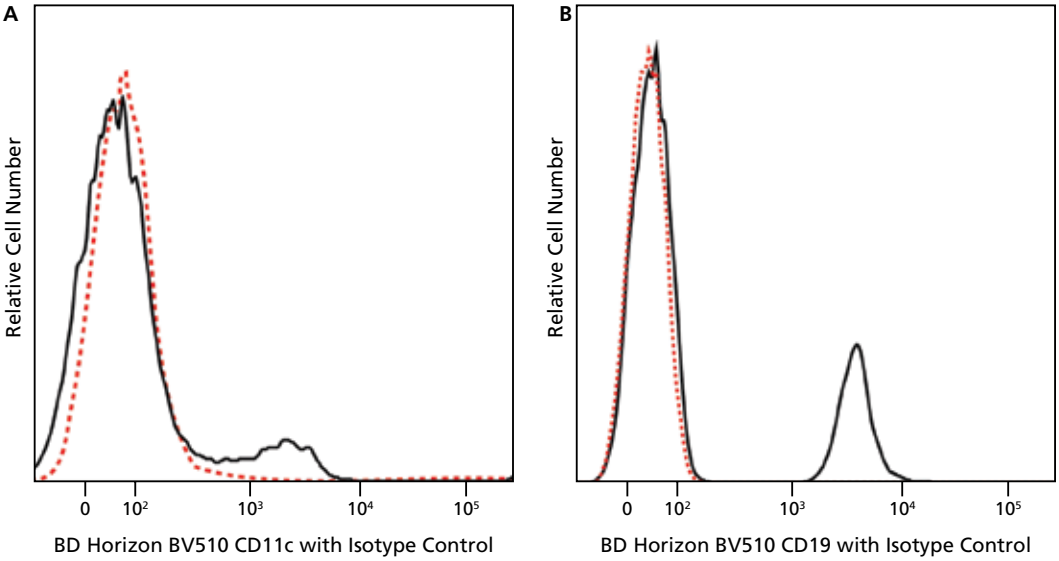


Figure 2. Panel A shows BALB/c mouse splenocytes stained with mouse CD11c BD Horizon BV510 (black line) or an isotype control (red dashed line). Panel B shows lysed whole blood stained with human CD19 BD Horizon BV510. Data shown was gated on lymphocytes and was overlaid with the isotype control.

BD Horizon Brilliant™ Violet 510

Human and Non Human Primate (NHP)

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	MφP-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_3, 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, k	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**
IFNγ	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	281-2	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	JES5-16E3	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 ß 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.

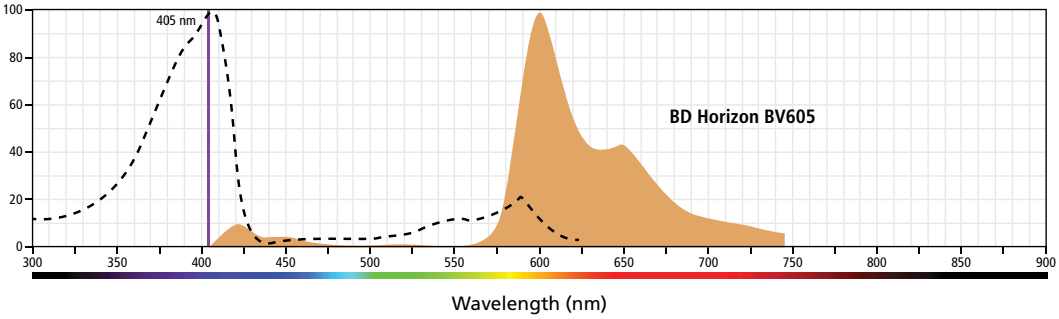


Figure 1. Excitation and emission profile of BV605.

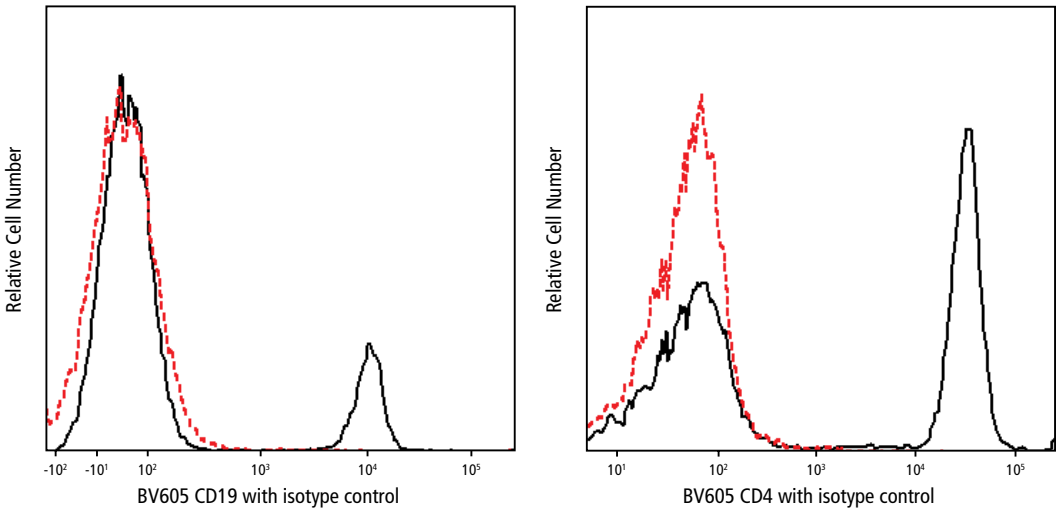


Figure 2. Lysed whole blood stained with human CD19 or CD4 BV605. Data shown was gated on lymphocytes and was overlaid with the isotype control.

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**

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**
IFNγ	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**

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	281-2	Rat IgG_{2a}, κ	FCM	RUO	BD Horizon BV605	50 µg	**563147**
CD279 (PD-1)	Ms	J43	Rat IgG_2, 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	JES6-5H4	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_2, 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_2, 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

	Stain Index	
Specificity	**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.

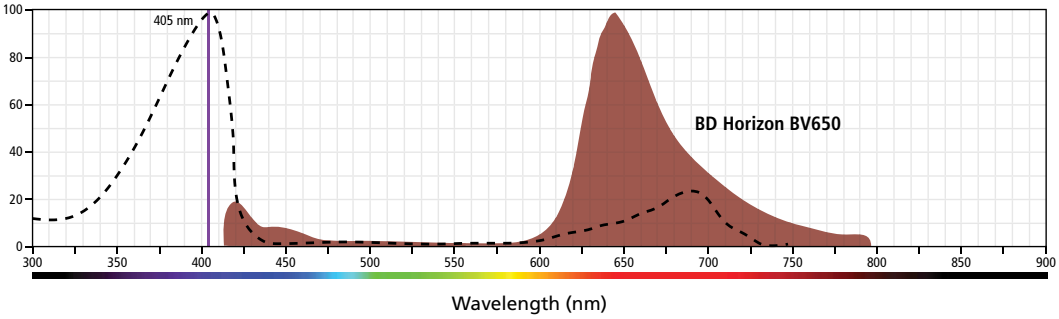


Figure 1. Excitation and emission profile of BV650.

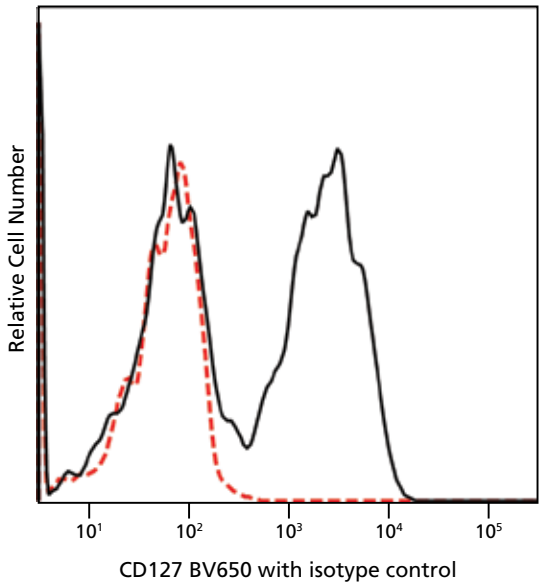


Figure 2. Lysed whole blood stained with human CD127 BV650. Data shown was gated on lymphocytes and overlaid with the isotype control.

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**

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_{2a}	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**
IFNγ	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**
RORγt	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**

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_{2b}, 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_{2b}, 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_{2b}, 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_{2b}, 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_{2b}, 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**
IFNγ	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**
RORγt	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_2, κ	FCM	RUO	BD Horizon BV650	50 µg	**563993**

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

	Stain Index	
Specificity	**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.

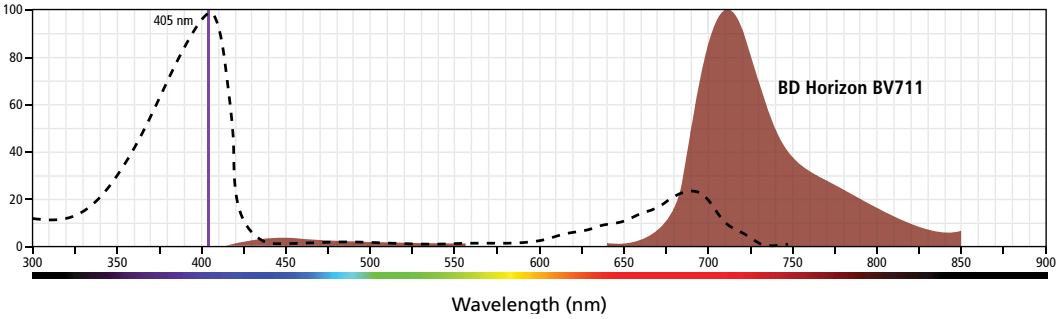


Figure 1. Excitation and emission profile of BV711.

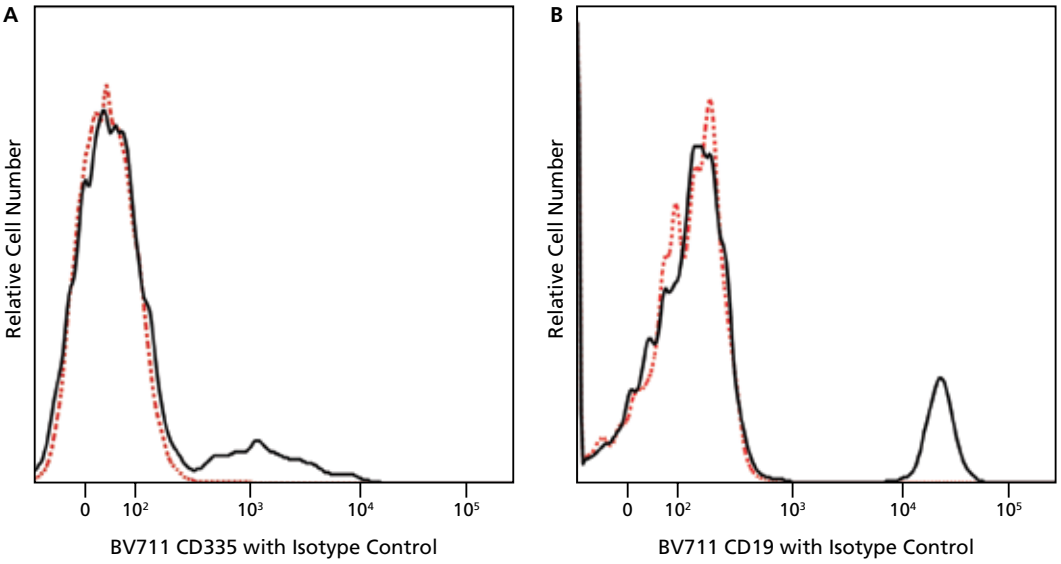


Figure 2. Lysed whole blood stained with human CD335 (NKp46) BV711 **(A)** or CD19 BV711 **(B)**. Data shown was gated on lymphocytes and overlaid with the isotype control.

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	MφP9	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**

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 ug	**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,	27-35	Mouse IgG_{2b}, κ	FCM, ICtrl	RUO	BD Horizon BV711	50 µg	**563125**
Mouse IgM, κ,	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

	Stain Index	
Specificity	**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.

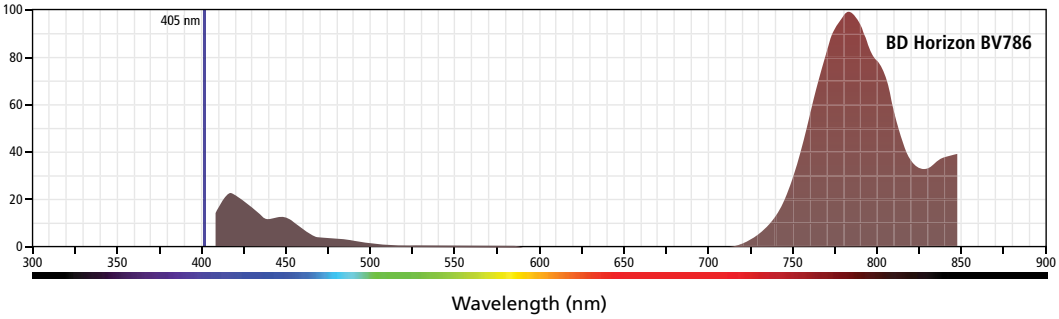


Figure 1. Excitation and emission profile of BV786.

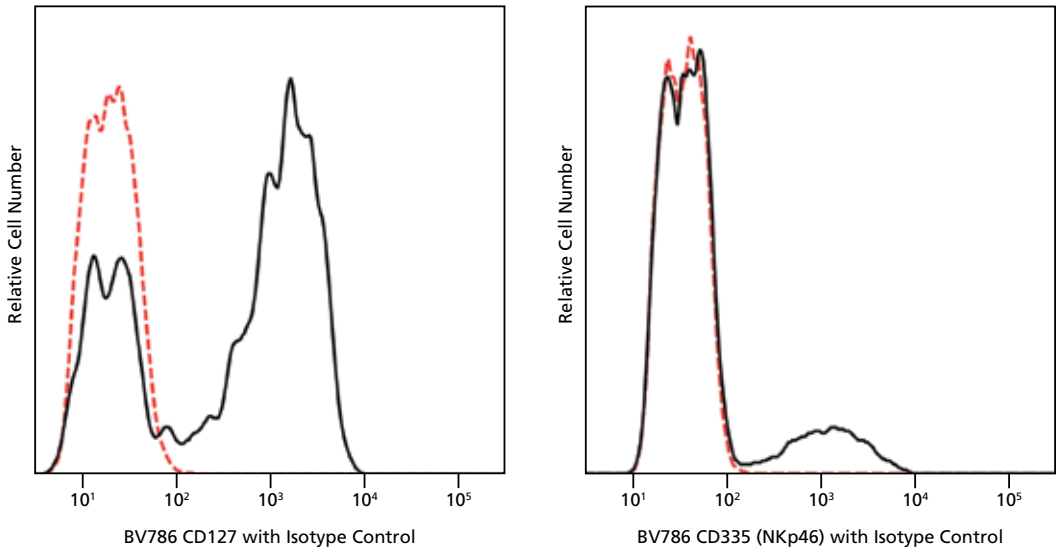


Figure 2. Lysed whole blood stained with human CD127 or CD335 (NKp46) BV786.
Data shown was gated on lymphocytes and overlaid with the isotype control.

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**
	Hu	SK3	Mouse IgG_1, κ	FCM	RUO	BD Horizon BV786	25 Tests	**563881**
				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**
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**
IFNγ	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**
IFNγ	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**
RORγt	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

	Stain Index	
Specificity	**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

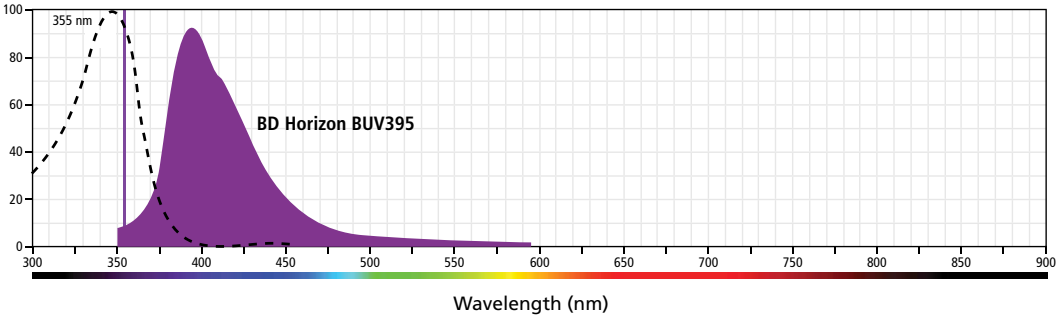


Figure 1. Excitation and emission profile of BUV395.

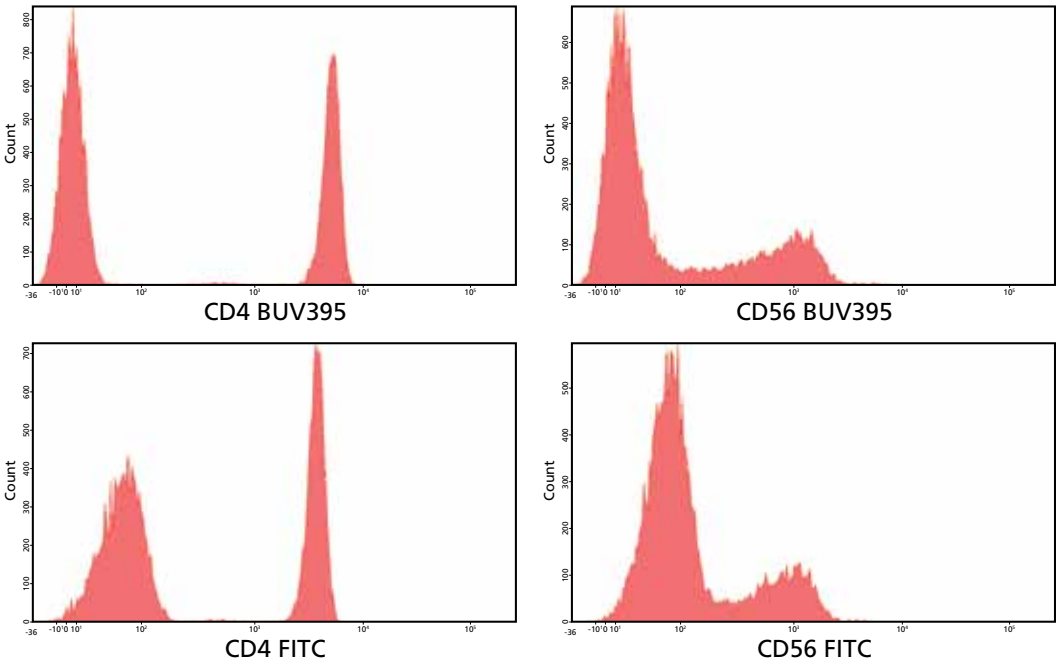


Figure 2. Lysed whole blood stained with CD4 or CD56 in BUV395 or FITC formats.
Data shown was gated on lymphocytes. BUV395 was excited by a 355-nm laser and FITC was excited by a 488-nm laser.

Laser		BUV395 %spillover into other channels					
Ultraviolet		BUV395	BUV496	BUV661	BUV737	BUV805	
	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. BUV395 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.

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**
		UCHT1	Mouse IgG_1, κ	FCM	RUO	BD Horizon BUV395	25 Tests	**563548**
	Bab, Cyno, Rhe	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**
	Hu	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	MφP9	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**

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_3, 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_{2b}, 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

	Stain Index	
Specificity	**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

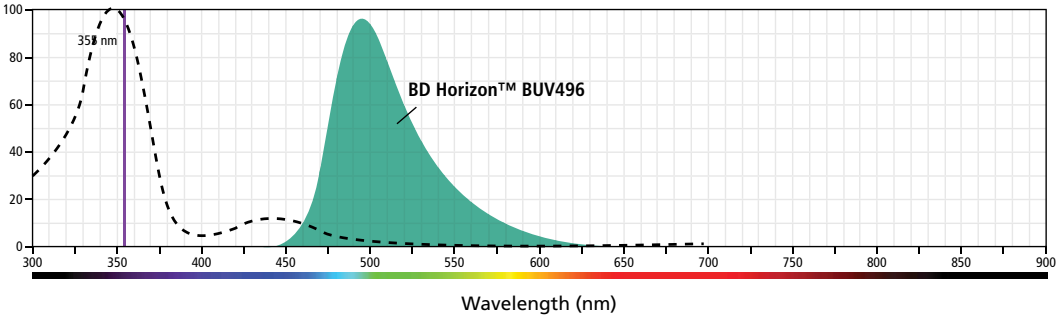


Figure 1. Excitation and emission profile of BUV496.

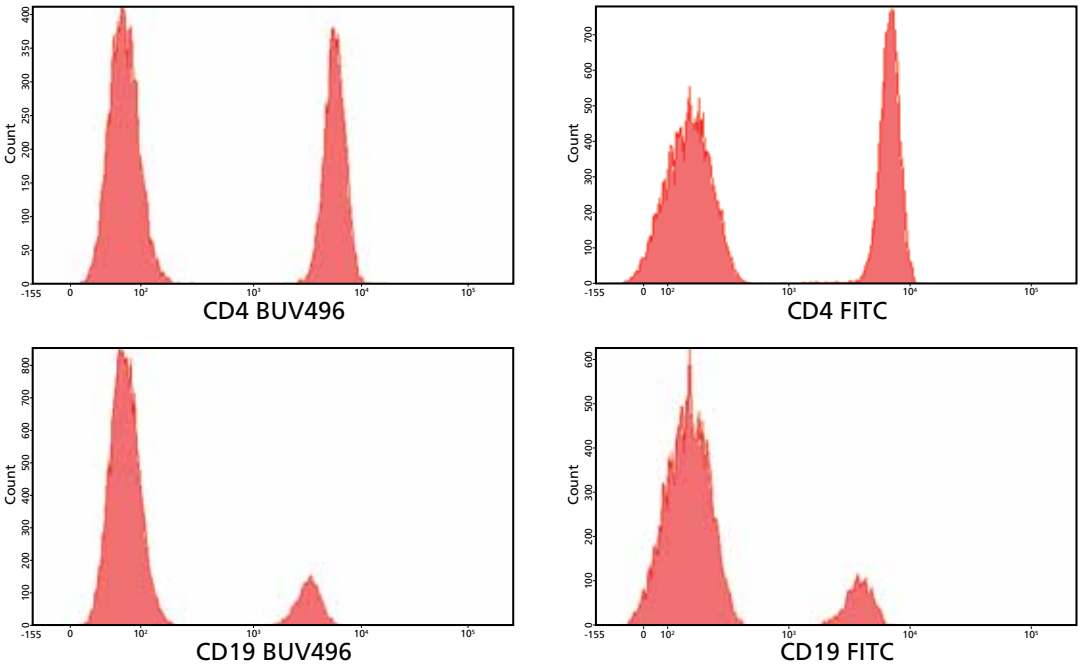


Figure 2. Lysed whole blood stained with CD4 or CD19 in BUV496 or FITC formats.
Data shown was gated on lymphocytes. BUV496 was excited by a 355-nm laser and FITC was excited by a 488-nm laser.

Laser		BUV496 % Spillover into other channels					
Ultraviolet		BUV395	BUV496	BUV661	BUV737	BUV805	
	BUV496	4%		5%	1%	0%	
Violet		BV421	BV510	BV605	BV650	BV711	BV786
	BUV496	1%	27%	5%	1%	0%	0%
Blue		FITC	PE	PE-CF594	PE-Cy™5	PerCP-Cy™5.5	PE-Cy™7
	BUV496	4%	1%	0%	0%	0%	0%
Red					APC	Alexa Fluor® 700	APC-Cy7
	BUV496				0%	0%	0%

Table 2. BUV496 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

	Stain Index	
Specificity	**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.

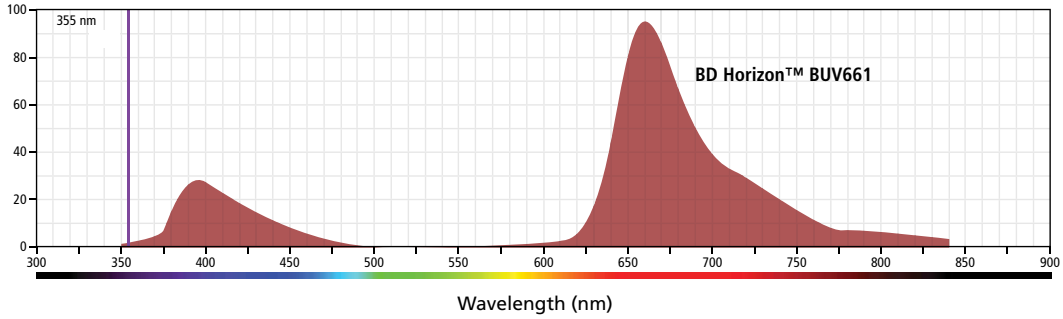


Figure 1. Excitation and emission profile of BUV661.

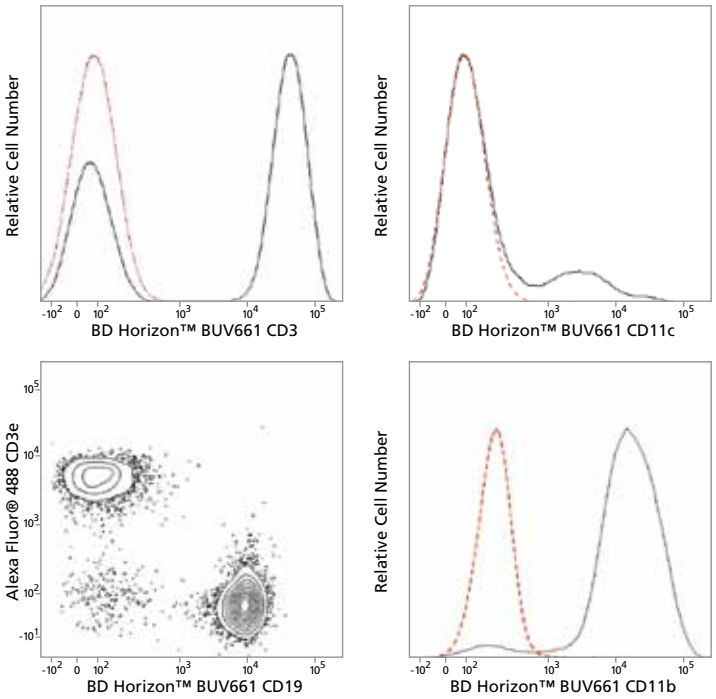


Figure 2. Cells stained with BUV661 reagents
Top Row: Lysed whole blood stained with Hu CD3 or Hu CD11c BUV661 and appropriate isotype control. Data shown on lymphocytes.
Bottom Row. Mouse splenocytes stained with Ms CD3e Alexa Fluor® 488 and Ms CD19 BUV661. Mouse bone-marrow cells stained with Ms CD11b BUV661.

Laser		BUV661 %Spillover into other channels					
Ultraviolet		BUV395	BUV496	BUV661	BUV737	BUV805	
	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. BUV661 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**

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

	Stain Index	
Specificity	**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.

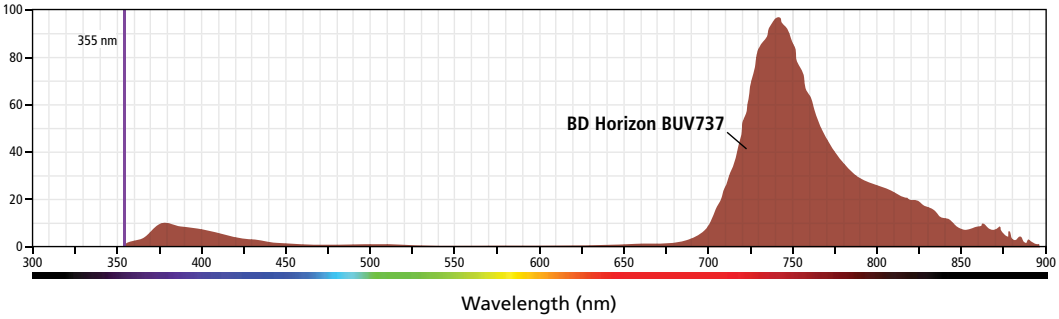


Figure 1. Excitation and emission profile of BUV737.

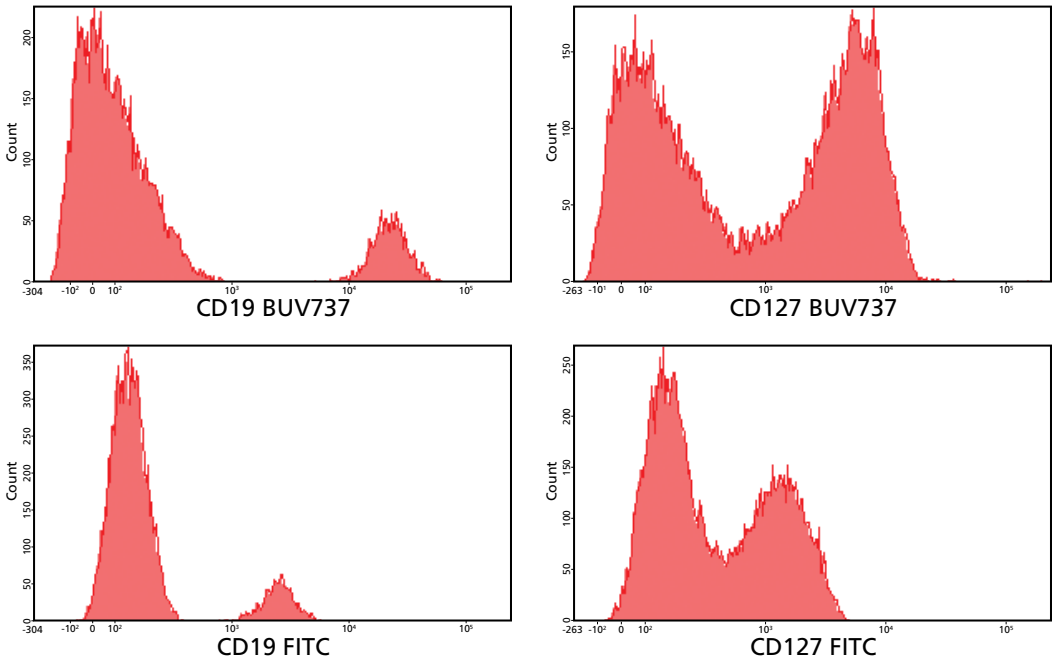


Figure 2. Lysed whole blood stained with CD19 or CD127 in BUV737 or FITC formats.
Data shown was gated on lymphocytes. BUV737 was excited by a 355-nm laser and FITC was excited by a 488-nm laser.

Laser		BUV737 %Spillover into other channels					
Ultraviolet		BUV395	BUV496	BUV661	BUV737	BUV805	
	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. BUV737 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.

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

	Stain Index	
Specificity	**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.

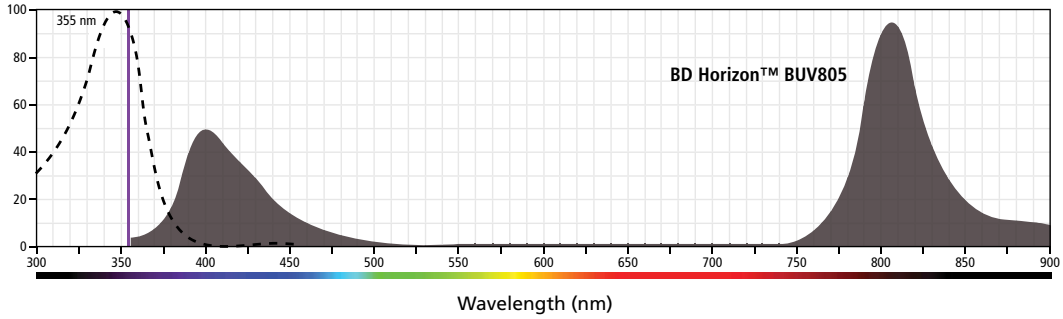


Figure 1. Excitation and Emission profile of BUV805.

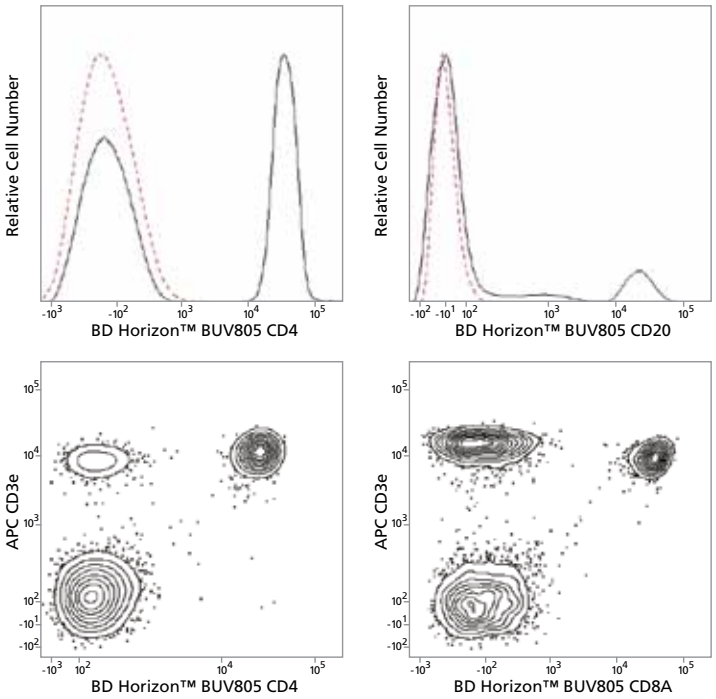


Figure 2. Top Row: Lysed whole blood stained with CD4 or CD20 BUV805 and appropriate isotype control. Data shown on lymphocytes. Bottom Row: Mouse splenocytes stained with CD3e APC and CD4 or CD8a BUV805.

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

Table 2. BUV805 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**

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

	Stain Index		
Specificity	**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

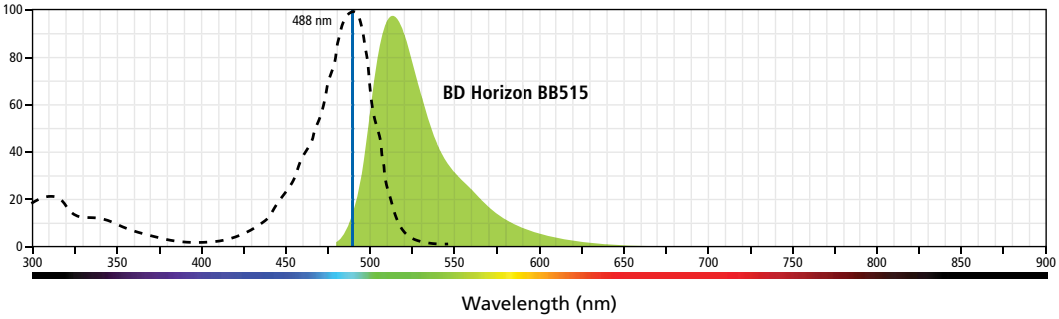


Figure 1. Absorption and emission spectra.
Ex Max: 490, Em Max: 515

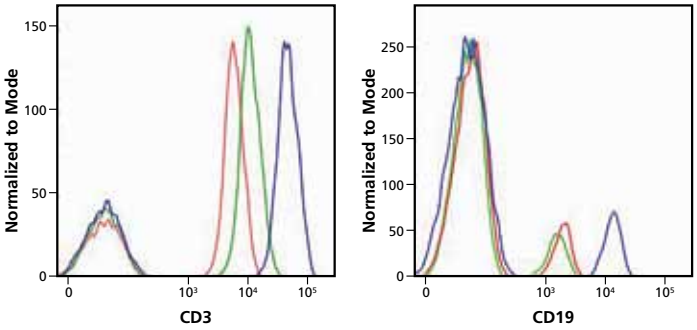


Figure 2. Lysed whole blood stained with Hu CD3 or CD19 FITC (red), BB515 (blue), or Alexa Fluor® 488 (green).
Data shown was gated on lymphocytes.

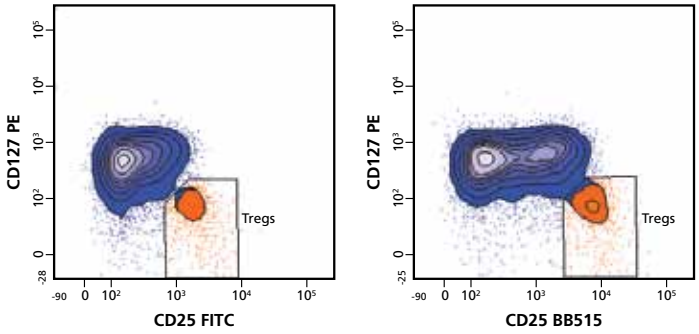


Figure 3. Whole blood was stained with Hu CD4 APC, CD127 PE, CD3 PerCP-Cy5.5, and CD25 FITC or CD25 BB515, and analyzed on a BD FACSVerse flow cytometer.
Data shown was gated on $CD4^+CD3^+$ lymphocytes.

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**

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**

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	BV421	0.00%
PE-CF594		0.00%
APC		0.00%
BUV395		0.00%
BV421	FITC	**0.02%**
PE-CF594		0.00%
APC		**0.04%**
BUV395		0.00%
BV421	PE-CF594	0.00%
FITC		**0.29%**
APC		**1.39%**
BUV395		0.00%
BV421	APC	0.00%
FITC		0.00%
PE-CF594		**0.03%**
BUV395		0.00%
BV421	BUV395	**1.57%**
FITC		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

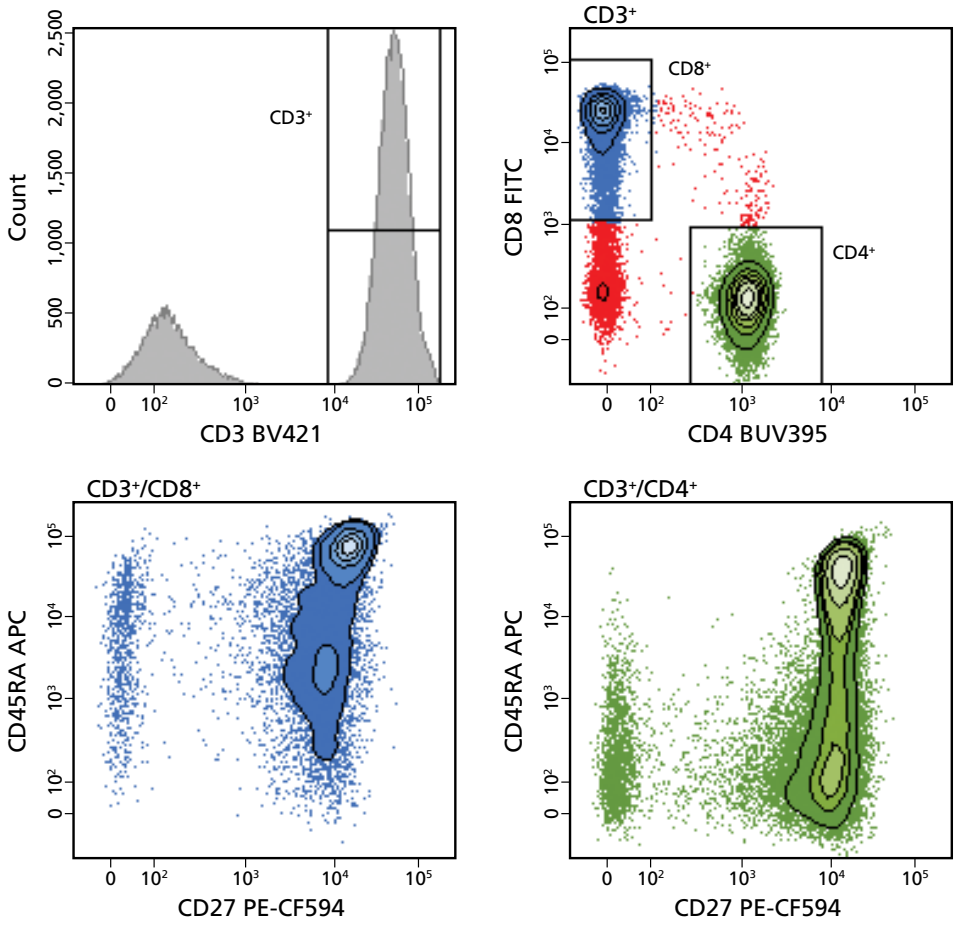


Figure 1. Analysis of Human Naïve, Effector, and Memory T Cells.

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.

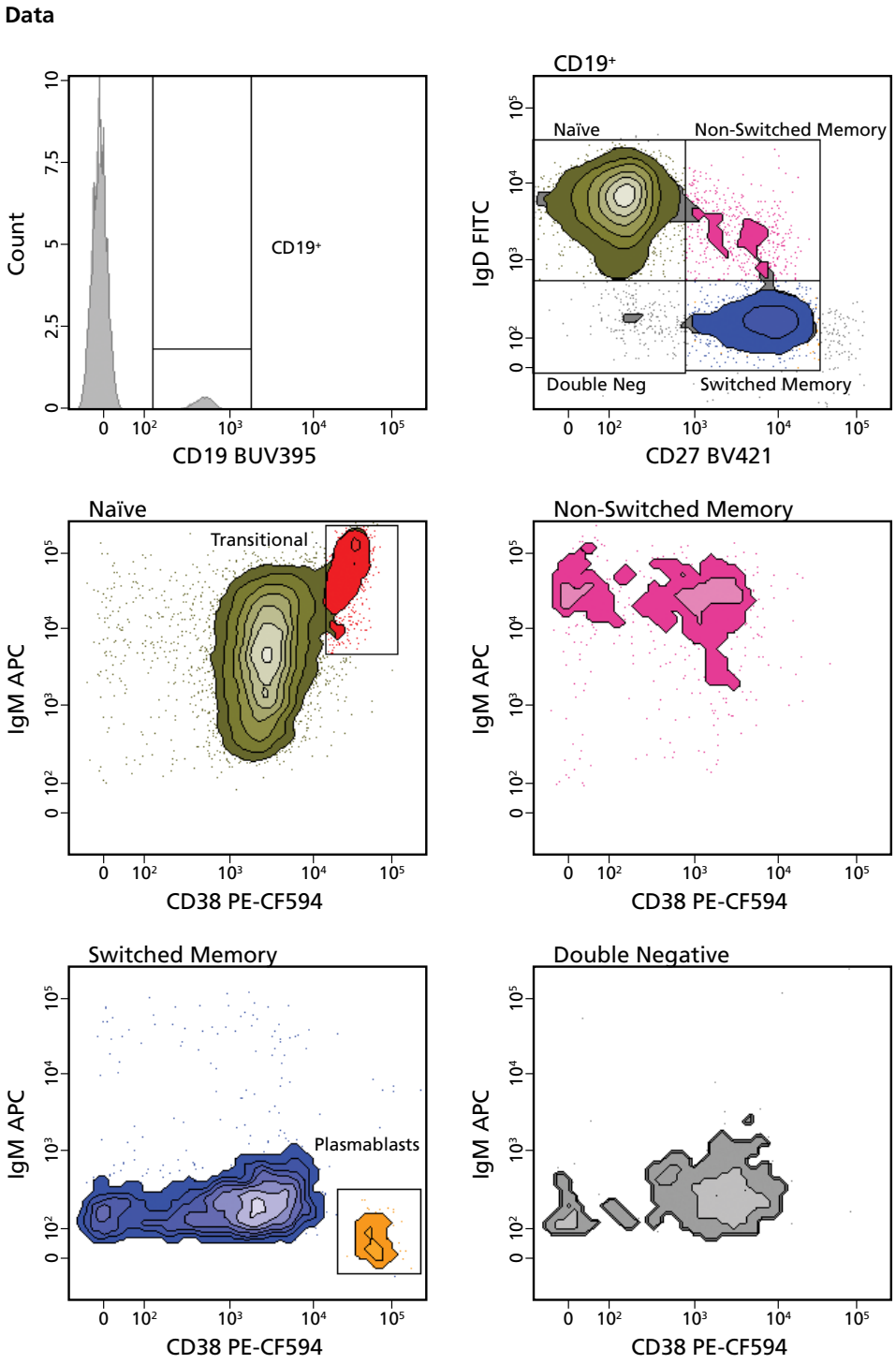


Figure 2. Analysis of Human B-Cell Subsets.

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 $IgM^{-}CD38^{++}$.

Data

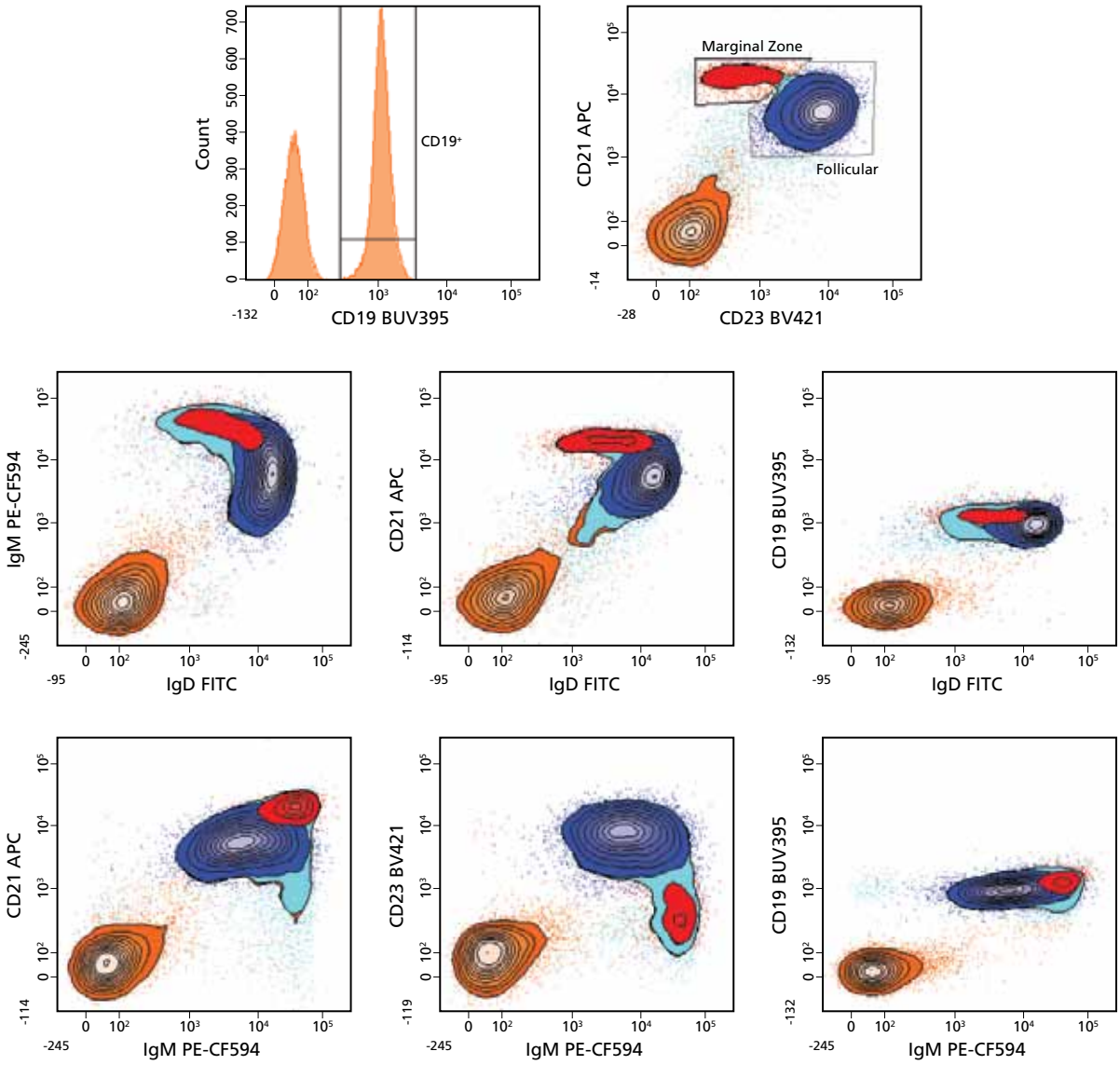


Figure 3. Analysis of Mouse Marginal Zone and Follicular B Cells.

C57BL6 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 400*g* 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 x 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	SJ25C1	563325
Ultraviolet 355 nm	379/28	BD Horizon BUV395	CD4	SK3	563550

BD LSRFortessa™ X-20

Fifteen-Color Immunophenotyping

Data

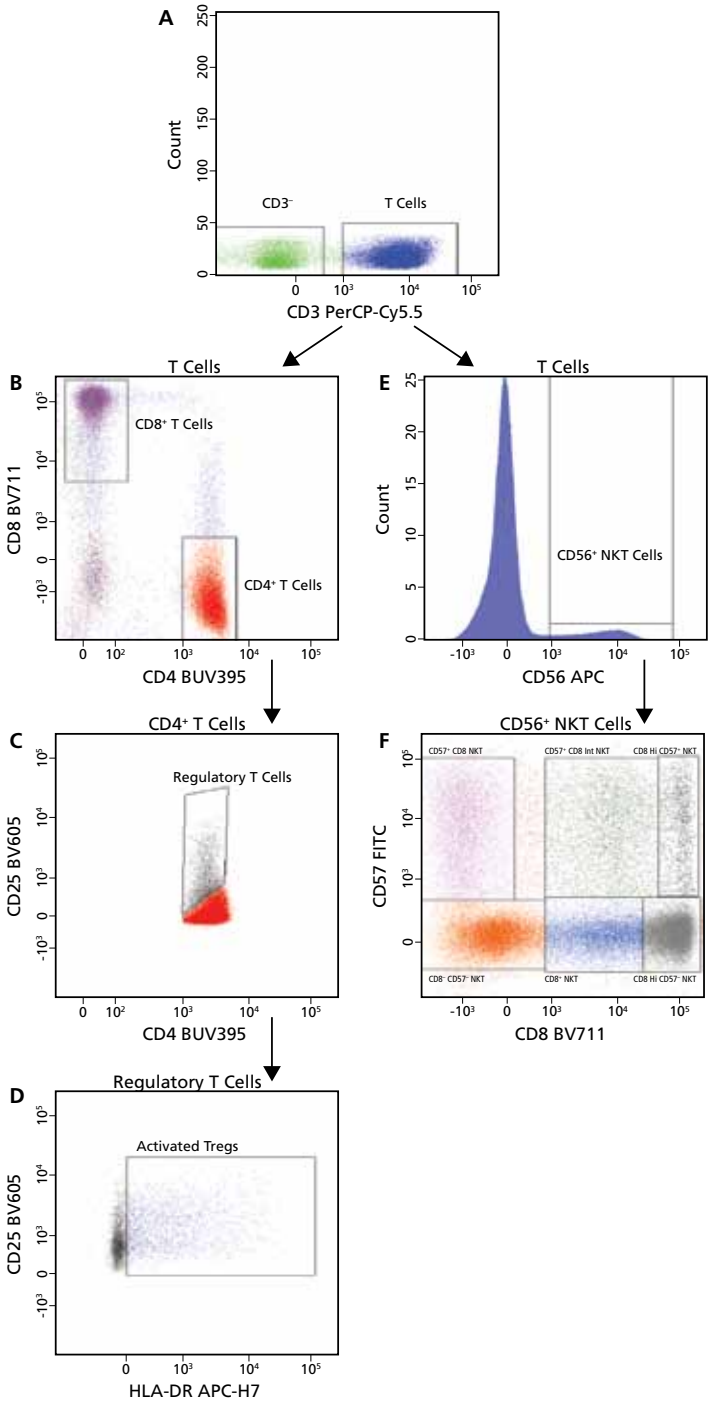


Figure 1. Distinguishing helper and cytotoxic T cells, Tregs, and NK-T cells.

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)**.

Data

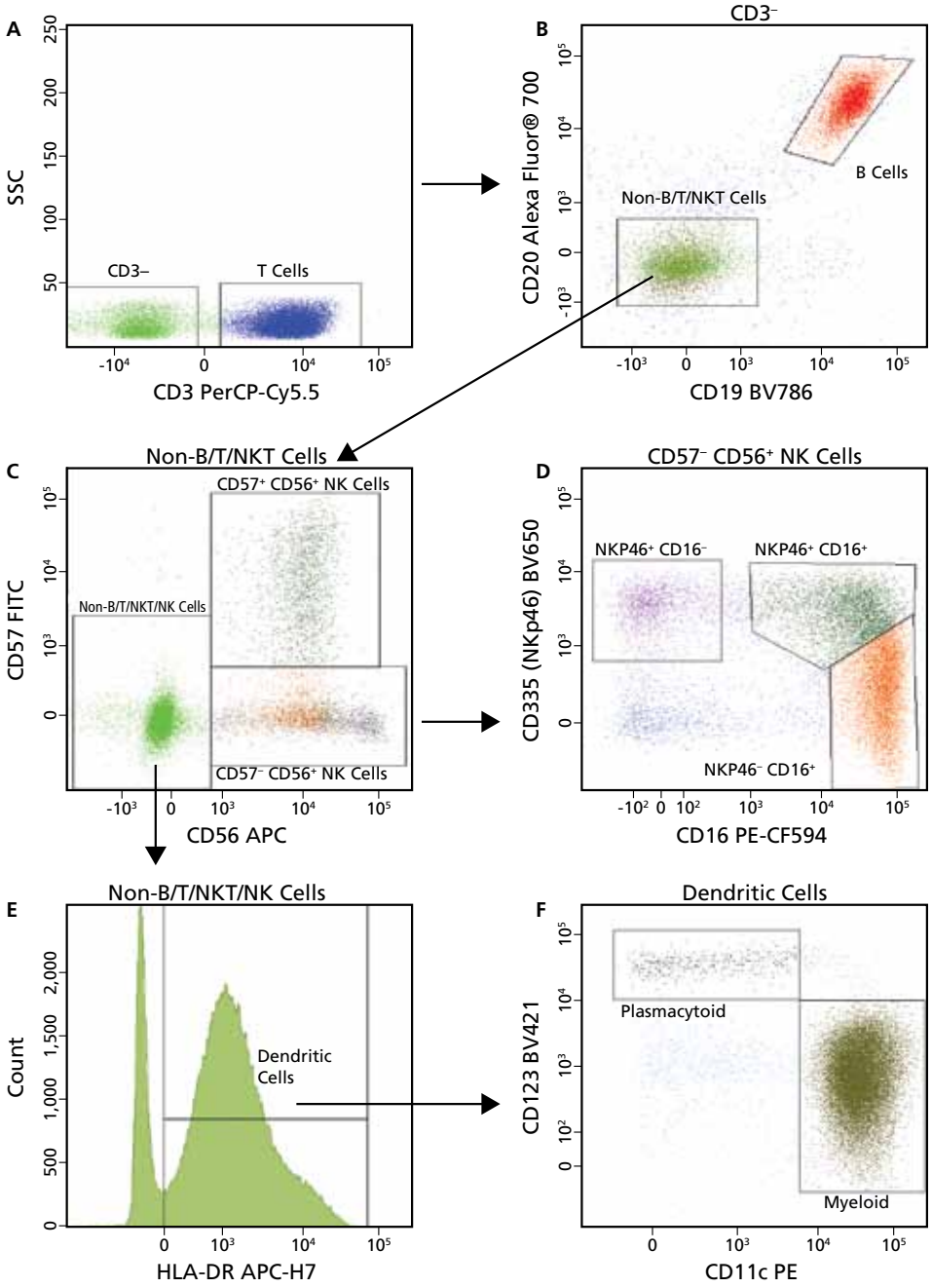


Figure 2. Distinguishing B cells, NK cells, and DC subsets.

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)**.

Data

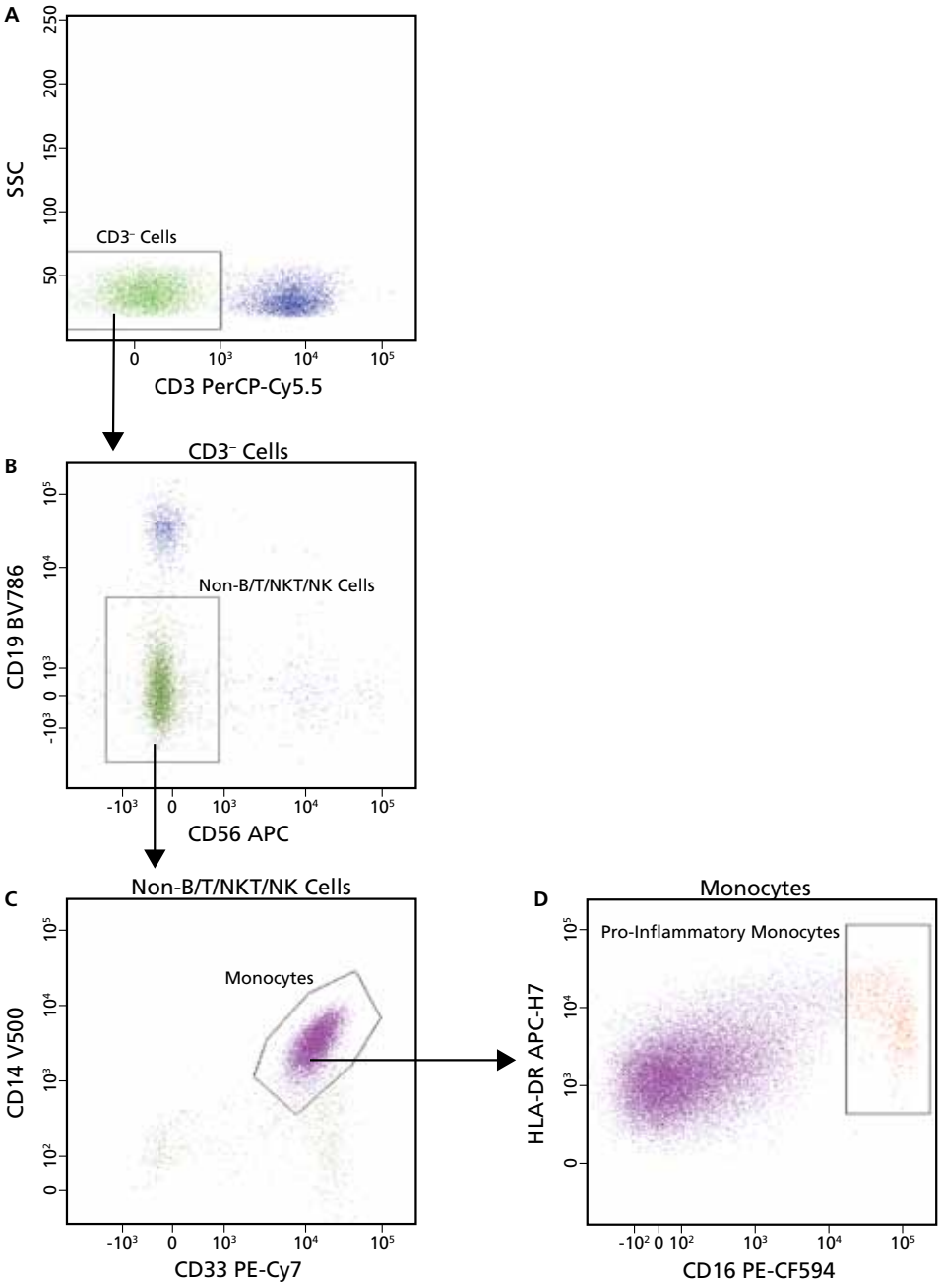


Figure 3. Identification of pro-inflammatory monocytes.
Monocyte gates based on light scatter can be further refined by gating out T, B, and NK cells based on CD3, CD19, and CD56 respectively **(A, B)**. Monocytes are clearly identified based on CD14 and CD33 expression **(C)**. Pro-inflammatory monocytes are identified as $CD16^{hi}HLA\text{-}DR^{hi}$ 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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