BD Horizon Brilliant™ Ultraviolet Reagents

Features

- UV (355-nm)–excitable dyes
- Provide great population resolution
- Low spillover into other detectors
- More choice and flexibility for multicolor panel design

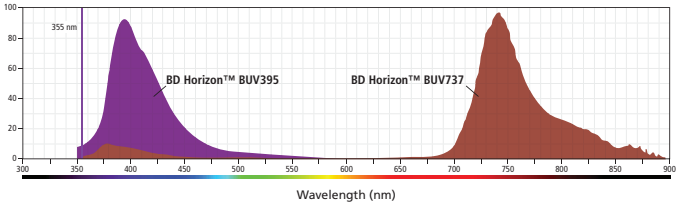

Figure 1. Excitation and emission profiles of BUV395 and BUV737.
Recommended filter for BUV395: 379/28, for BUV737: 740/35.

	Stain Index	
Specificity	**BUV395**	**FITC**
Human CD4	144	57
Human CD56	21	10

Specificity	**BUV737**	**FITC**
Human CD4	249	57
Human CD19	127	61
Human CD127	13	5

Table 1. Stain index comparison of CD4, CD19, CD56, or CD127 stained with BUV395, BUV737, or FITC reagents.
Relative stain index values are dependent on instrument configuration, including lasers, filters, and laser power.

The BD Horizon Brilliant™ Ultraviolet polymer dyes are UV excitable dyes that have been developed exclusively by BD Biosciences to expand the multicolor capabilities of flow cytometers equipped with a 355-nm laser. Currently available UV-excitable fluorochromes are so dim that they are not practical for immunophenotyping applications. However, the BD Horizon™ BUV dyes provide great population resolution, even for dim markers. Additionally, these dyes allow markers to be spread over more lasers, reducing the compensation requirements of the panel.

BD Horizon™ BUV395

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 an additional color to be added to a panel without increasing the complexity of compensation requirements.

BUV395 clearly resolves both dim and abundant populations. In many cases, BUV395 reagents will have brightness similar to or greater than FITC reagents (Table 1). With an excitation max of 348 nm and an emission max 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.

BD Horizon™ BUV737

BUV737 is a tandem dye that combines BUV395 and an acceptor dye with an emission max at 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 adds an additional dye that can be excited by the 355-nm laser, increasing flexibility in multicolor panel design. 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, the 712/20-nm filter) (Table 2).

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BD Horizon Brilliant Ultraviolet Reagents

More choice and flexibility for multicolor panel design
BUV395 and BUV737 provide more choice for multicolor flow cytometry, making multicolor panel design easier and more accessible. Using these dyes with other fluorochromes offered by BD Biosciences enables detection of up to 17 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 alleviates one of the most difficult elements of multicolor panel design.

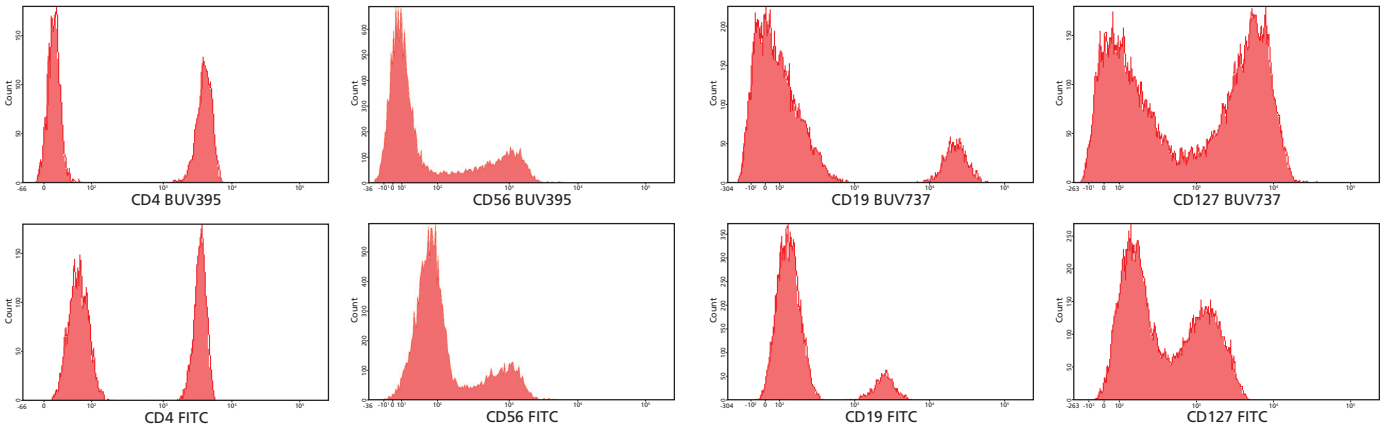

Figure 2. Lysed whole blood stained with CD4, CD19, CD56, or CD127 in BUV395, BUV737, or FITC formats.
Data shown was gated on lymphocytes. BUV395 and BUV737 were excited by a 355-nm laser and FITC was excited by a 488-nm laser.

Laser		Spillover into other channels					
UV		BUV395	BUV737				
	BUV395		0%				
	BUV737	2%					
Violet		BV421	BV510	BV605	BV650	BV711	BV786
	BUV395	0%	0%	0%	0%	0%	0%
	BUV737	0%	0%	0%	0%	4%	3%
Blue		FITC	PE	PE-CF594	PE-Cy™5	PerCP-Cy™5.5	PE-Cy™7
	BUV395	0%	0%	0%	0%	0%	0%
	BUV737	0%	0%	0%	0%	2%	9%
Red					APC	Alexa Fluor® 700	APC-Cy7
	BUV395				0%	0%	0%
	BUV737				1%	45%	11%

Table 2. BUV395 and BUV737 spillover into other channels.

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