

BD

雷射激發專一性螢光抗體

BD Horizon™ Real Fluorochromes Antibody

降低 Cross-laser Spillover，提升 Panel 解析度！



新一代螢光抗體，帶來更好的分析體驗

更低 Spillover

專一性雷射激發，減少漏光與降低背景值

胞內染色穩定

相容各種常見的固定液和打洞試劑

卓越解析度

多種亮度選擇，低抗原表達獲得最佳解析度

批次穩定 / 光穩定性高

確保實驗結果準確且具重現性



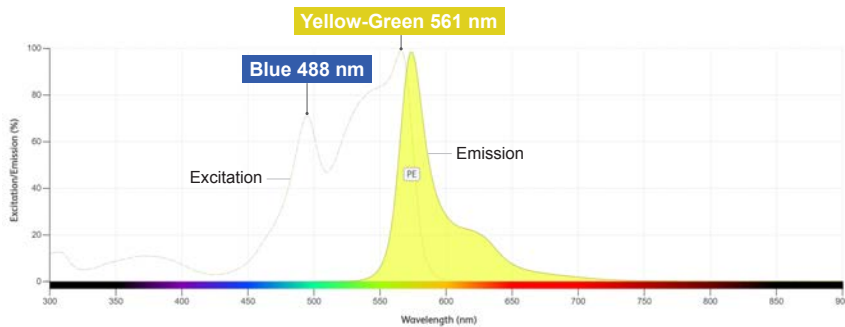
騰達行

☎ 0800-211-819

為什麼需要 BD Horizon™ Real Fluorochromes ?

降低 Cross-laser Spillover，讓每一道雷射只激發應有的螢光

Traditional PE Fluorochromes



- ⚠ PE 可被 Blue 和 Yellow-Green 雷射激發
- ⚠ 造成高背景 & 訊號擴散

什麼是 Cross-laser Spillover ?

受到非特异性雷射激發，在非預期的通道中產生不需要的螢光訊號

⚠ Cross-laser Spillover 的影響

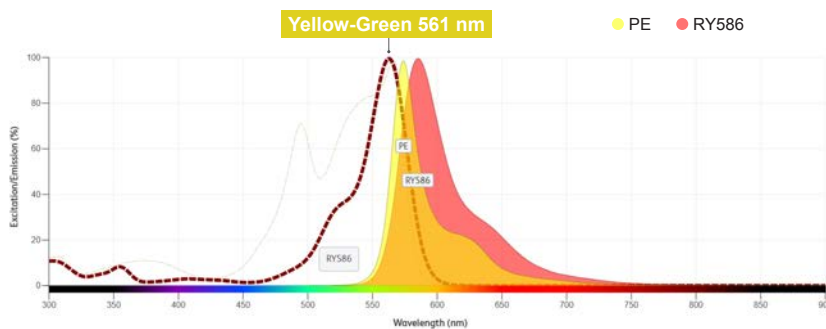
增加螢光補償
Compensation ↑

降低解析度
Resolution ↓

增加背景雜訊
Background ↑

弱 marker
難以區分

勝 BD Horizon™ Real Fluorochromes



- ✓ RY586 被 Yellow-Green 雷射專一性激發
- ✓ 更乾淨的訊號 & 解析度提升
- ✓ 沒有明顯的溢光干擾

BD Horizon™ Real Fluorochromes 優勢

Better Flow panel
Performance !



特异性
雷射激發



降低跨
雷射溢光



提升
解析度



更乾淨
的訊號



胞內
染色穩定

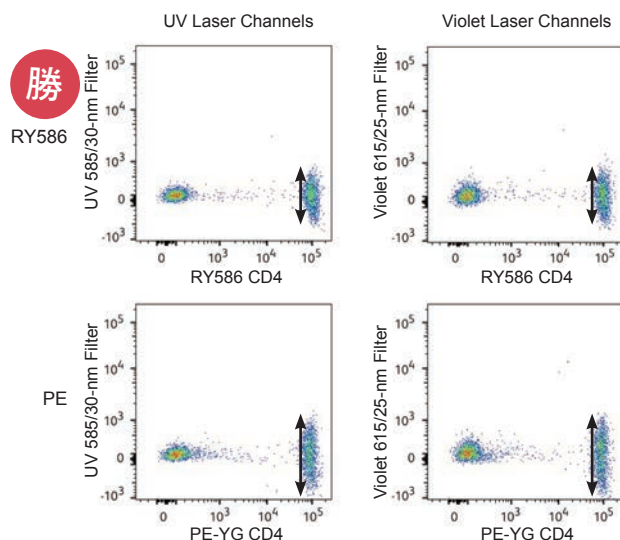


批次
穩定



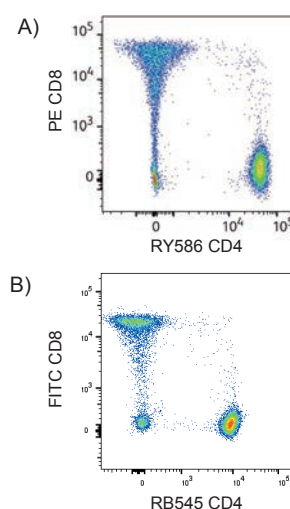
解析度提升

RY586 和 PE 相比，比較不會漏光到 Violet, UV laser 通道

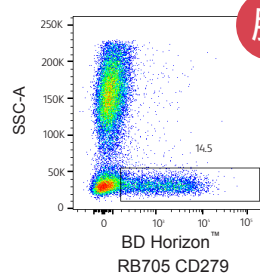
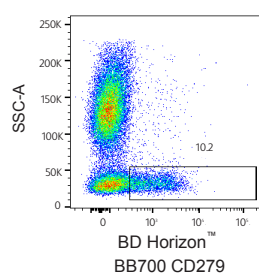
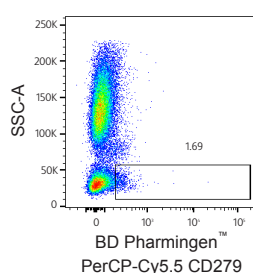


擴展螢光配色數

在光譜型流式細胞儀，A) PE 和 RY586, 或 B) FITC 和 RB545 可以同時使用



螢光亮度提升

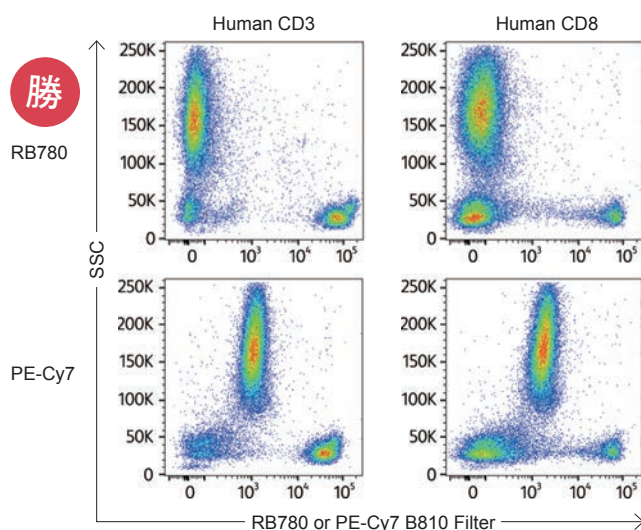


勝

高亮度的 RB705 可以解決低抗原表達問題

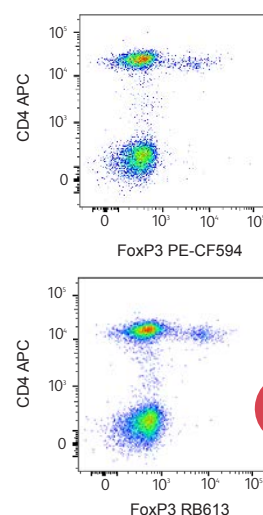
降低背景值

全血染色中，和 PE-Cy7 相比，RB780 可以顯著降低背景值



相容各種常見的試劑

RB613 在胞內染色 (FoxP3) 比 PE-CF594 提供更清晰的分群與螢光訊號



BD Horizon™ Real Fluorochromes list

提供各螢光染料亮度、Spillover 等級及建議替代染料，協助 Panel 設計更有效率

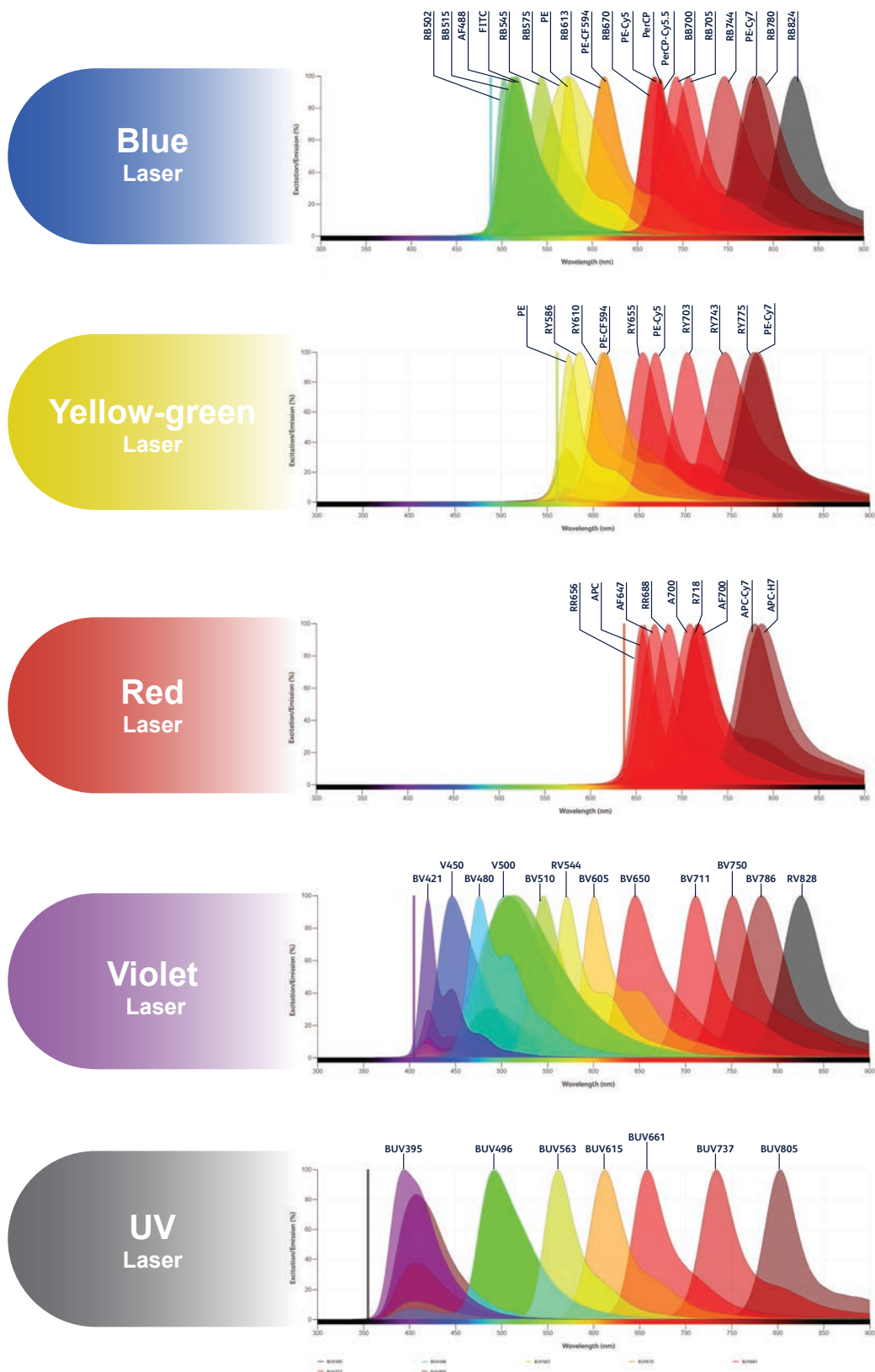
流式細胞儀種類					
Format	Spectral	Conventional	Resolution	Spillover (1 = low, 4 = high)	Alternative to
Violet Laser					
 RV544	✓		●●○○	2	cFluor™ V547
RV828	✓		●●○○	1	Qdot™ 800
Blue Laser					
RB502 (coming soon)	✓	✓	●●●○	1	FITC, Alexa Fluor™ 488, BB515, cFluor™ B515
RB545	✓		●●○○	1	cFluor™ B548
 RB575	✓	✓	●●○○	1	PE, StarBright™ Blue 580
RB613	✓	✓	●●●●	2	PE-CF594, PE-Dazzle™ 594, BB630-P2, StarBright™ Blue 615
RB670	✓	✓	●●●●	2	PE-Cy5, BB660-P2, cFluor™ B675, StarBright™ Blue 675
RB705	✓	✓	●●●●	2	PerCP-Cy5.5, PE/Fire™ 700, BB700, cFluor™ B690, StarBright™ Blue 700
RB744	✓	✓	●●●●	1	PE/Fire™ 744, BB755-P, cFluor™ BYG750
RB780	✓	✓	●●●●	1	PE-Cy7, PerCP/Fire™ 780, BB790-P, cFluor™ BYG781
RB824	✓	✓	●●●○	1	PE/Fire™ 810, PerCP/Fire™ 806, StarBright™ Blue 810
Yellow-green Laser					
RY586	✓	✓	●●●●	1	PE, cFluor™ YG584
RY610	✓	✓	●●●○	1	PE-CF594, PE-Dazzle™ 594, cFluor™ BYG610
RY655	✓	✓	●●●●	3	PE-Cy5, PE/Fire™ 640, cFluor™ BYG667, StarBright™ Yellow 665
RY703	✓	✓	●●●●	2	PE-Cy5.5, PE/Fire™ 700, cFluor™ BYG710, StarBright™ Yellow 720
RY743	✓	✓	●●●●	2	PE/Fire™ 744, cFluor™ BYG750
RY775	✓	✓	●●●●	2	PE-Cy7, cFluor™ BYG781, StarBright™ Yellow 800
Red Laser					
RR656 (coming soon)	✓	✓	●●●●	2	APC, Alexa Fluor™ 647, cFluor™ R659, StarBright™ Red 670
RR688	✓		●●●●	1	Alexa Fluor™ 660, cFluor™ R685

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

- PE 與 PE tandem dyes 可同時由 Blue Laser 及 Yellow-Green Laser 激發
- 可依據名稱判斷 Emission Max 大約位置 (e.g. RB780 Emission Max ~ 780 nm)
- 本表為代表性參考資料，Filter 因為各廠牌、積寬的流式細胞儀的設計略有不同，此表僅供參考
- Spillover：數值越小，代表螢光溢漏程度越低，有助於降低訊號干擾
- Resolution：數值越高，代表螢光解析能力越佳，有助於提升不同抗原族群的辨識度



BD Fluorochrome and Laser Reference



355 nm
UV

405 nm
Violet

488 nm
Blue

561 nm
Yellow-Green

640 nm
Red

高參數 24-color panel & data

Fluorochrome marker assignment for a 24-color spectral flow cytometry human T cell activation panel acquired on the BD FACSDiscover™ A8 Cell Analyzer

24-color panel

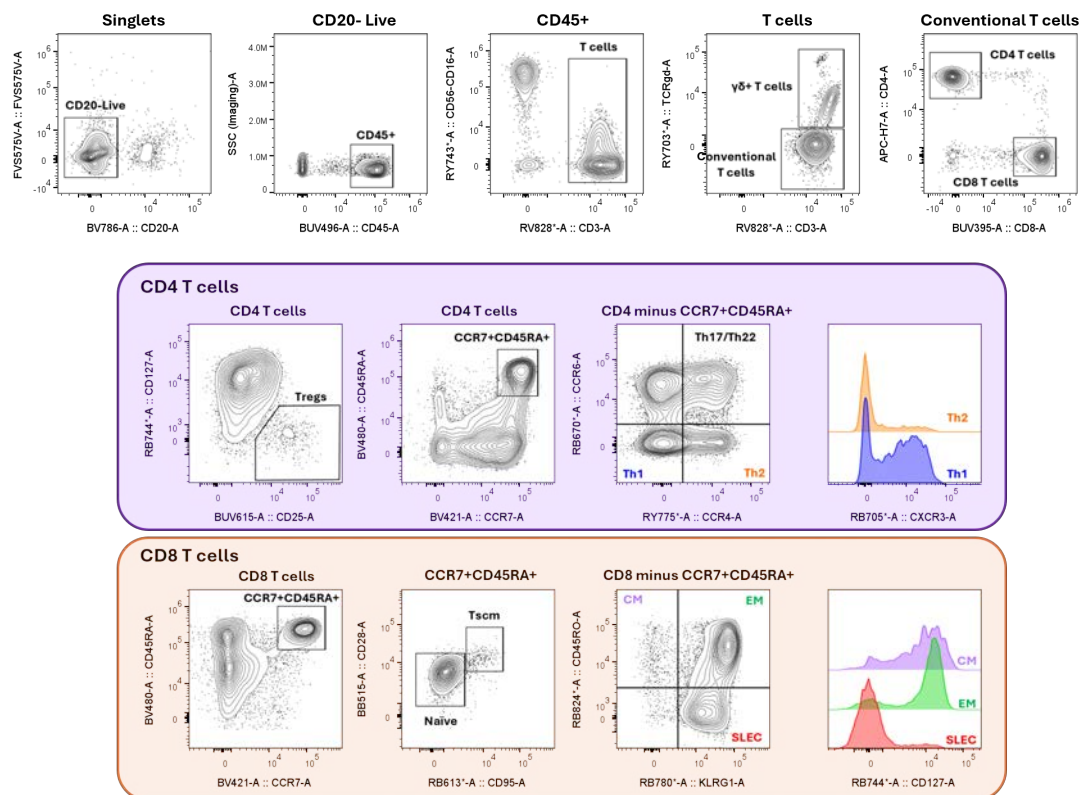
	Specificity	Clone	Fluorochrome
UV 349 nm	CD8	RPA-T8	BUV395
	CD45	HI30	BUV496
	CD25	2A3	BUV615
Violet 405 nm	CCR7	2-L1-A	BV421
	CD45RA	HI100	BV480
	Viability	N/A	FVS575V
	CD20	2H7	BV786
	CD3	UCHT1	RV828
Blue 488 nm	CD28	CD28.2	BB515
	CD95	DX2	RB613
	CCR6	11A9	RB670
	CXCR3	1C6/CXCR3	RB705
	CD127	HIL-7R-M21	RB744
	KLRG1	Z7-205.rMAb	RB780
	CD45RO	UCHL1	RB824
Yellow-Green 561 nm	TIM-3	7D3	RY586
	CD69	FN50	RY610
	TCR γ δ	11F2	RY703
	CD56	B159	RY743
	CD16	3G8	RY743
	CCR4	1G1	RY775
Red 637 nm	CD19 CAR Detection Reagent	N/A	AF647
	PD-1	EH12.1	RR688
	TIGIT	TgMab-2	R718
	CD4	RPA-T4	APC-H7

Real Dye 系列 突破高參數 Flow Panel 的配色限制



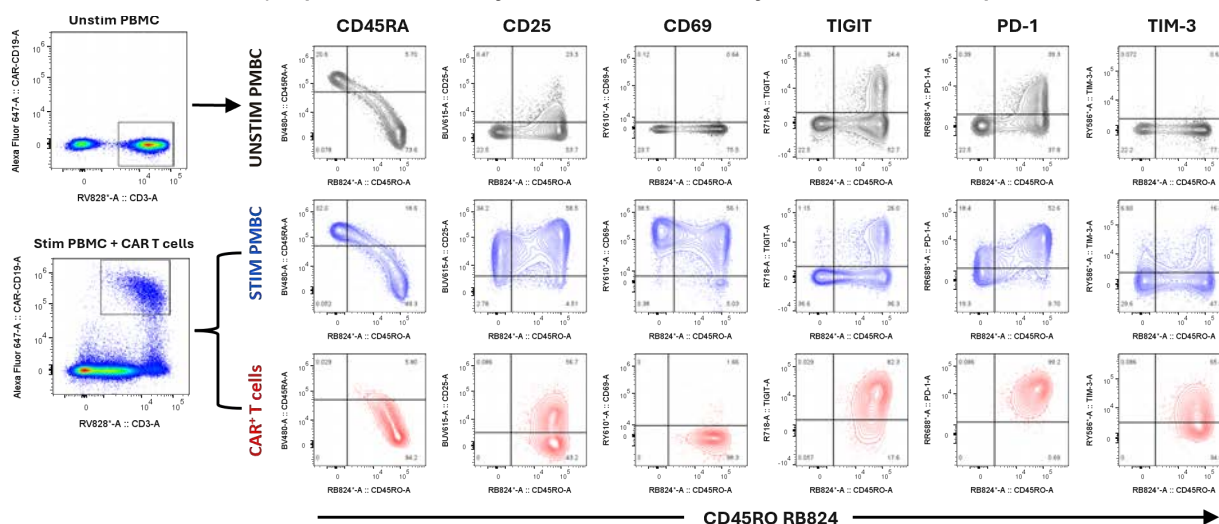
Gating scheme of T cell subsets

A) T Cell Phenotyping of Unstimulated PBMC



A) Gating strategy for T cell phenotyping of unstimulated PBMC.

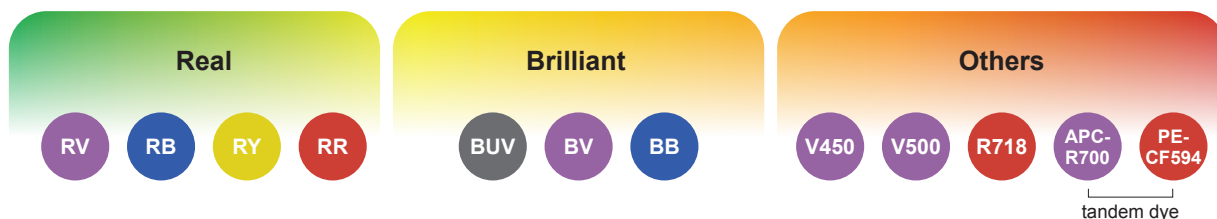
B) Expression of Memory, Activation and Inhibitory Markers Across Samples



B) Pseudocolor plots show detection of CD19 CAR+ T cells in the stimulated PBMC sample mixed with CAR T cells. Contour plots show expression of memory, activation and inhibitory markers in unstimulated PBMC, stimulated PBMC and CD19 CAR+ T cells.

PBMCs were isolated from a healthy donor and divided into two conditions: unstimulated and stimulated with CytoStim™ (Miltenyi Biotec). After 24 hours, both samples were collected and labeled with CD45. CAR T cells were spiked into the stimulated sample. Samples were then stained with the remaining 23 markers of the 24-color T cell activation panel incorporating BD Horizon RealViolet™ 828 (RV828) and RB824, along with a BD CD19 CAR Detection Reagent, and analyzed on the BD FACSDiscover™ A8 Cell Analyzer.

BD Horizon Fluorochromes



BD Horizon Brilliant™ Dye

BD Horizon Brilliant™ 螢光染劑是收購 Sirigen 公司獨創聚合物染劑技術開發而成 (polymer dyes technology)。這項技術提供螢光染劑的**高亮度**及**高穩定**特性，可以**解決低表達抗原染色結果分辨率不佳**的問題，且**螢光品項眾多**，在多色組合設計上更彈性，現已成為不可或缺的一員！

Fluorochrome	Emission Max	Filter*	亮度	特色 **
Horizon Brilliant™ Blue_488 nm (blue) laser line				
BB515	515 nm	530/30	●●●●	1. B515 ：FITC / Alexa Fluor®488 替代方案，減少 PE channel spillover 2. BB700 ：PerCP-Cy5.5 替代方案，降低 Violet channel spillover
BB700	695 nm	695/40	●●●●	
Horizon Brilliant™ Violet_405 nm (Violet) laser line				
BV421	423 nm	450/40	●●●●	1. 品項選擇眾多，是多色 panel 設計的好選擇 2. BV421 、 BV480 、 BV510 為搭載 Violet laser 機型必選螢光 3. BV421 的高亮度特色，甚至比 PE 更亮或一樣亮，是低表達抗原的首選，人氣居高不下
BV480	479 nm	525/40	●●●○	
BV510	512 nm	525/50	●●○○	
BV570	573 nm	575/26	●●○○	
BV605	605 nm	610/20	●●●○	
BV650	649 nm	660/20	●●●●	
BV711	713 nm	710/50	●●●●	
BV750	754 nm	750/30	●●○○	
BV786	786 nm	780/60	●●●○	
Horizon Brilliant™ UV_355 nm (UV) laser line				
BUV395	395 nm	379/28	●●○○	1. 為 BD 研發染劑，特殊的 UV laser 激發，有較少的漏光現象 2. BUV395 具最短 emission wavelength，與其他螢光通道重疊低，是多色 panel 設計的理想選擇！
BUV496	496 nm	515/30	●●○○	
BUV563	564 nm	585/15	●●●○	
BUV615	615 nm	616/23	●●●○	
BUV661	660 nm	670/25	●●●○	
BUV737	735 nm	740/35	●●●○	
BUV805	803 nm	820/60	●○○○	

BD Horizon™ Red Dye

BD 自行開發的小分子有機染料，主要是為了解決紅光雷射在多色 flow panel 中的限制。

Fluorochrome	Emission Max	Filter*	亮度	特色 **
Red laser line				
R718	718 nm	720/40	●●●●	1. 高亮度、低背景，提升弱訊號解析度 2. 可取代 Alexa Fluor® 700 與 APC-R700 3. 非 tandem dye，避免串聯染料降解造成訊號不穩定

* Filter 因為各廠牌、機款的流式細胞儀的設計略有不同，此頁表格僅供參考。

** 請依照螢光配色原則來找到適合的螢光。

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同場加映：螢光染劑升級對照表

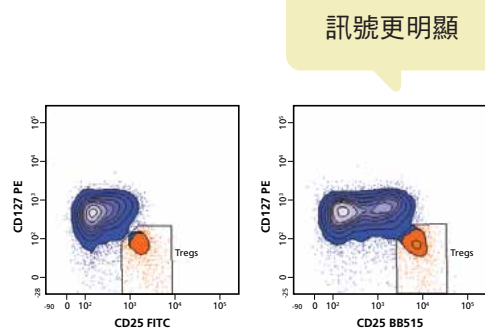
傳統染劑	升級染劑	激發雷射	Panel Performance 關鍵提升優勢
FITC / Alexa Fluor® 488	BB515	● Blue laser	• 亮度高，Stain Index (SI) 優於傳統 FITC • 對 PE 漏光降低
PerCP	RB670	● Blue laser	• 穩定性高 • 專一 Blue laser 激發，降低 Violet laser spillover
PerCP-Cy5.5	RB705	● Blue laser	
Alexa Fluor® 700	R718	● Red laser	• 亮度顯著高於 Alexa Fluor® 700，低表達 marker 分群更清晰 • 細胞內染表現佳
PE	RB575	● Blue laser	• 提升訊號穩定性，保留高亮度，同時降低 spillover
	RY586	● Yellow-green laser	• Yellow-Green 雷射優化染劑 • 專一性雷射激發，解決 Cross-laser Spillover 問題
PE-Cy5	RB670	● Blue laser	• 提升訊號穩定性，保留高亮度，同時降低 spillover
	RY655	● Yellow-green laser	
PE-Cy7	RB780	● Blue laser	• 提升訊號穩定性，保留高亮度，同時降低 spillover
	RY775	● Yellow-green laser	

實驗數據實證

BB515 data

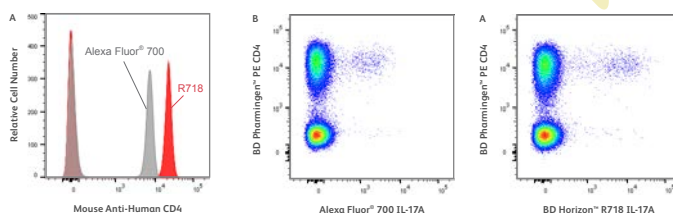
Specificity	Stain Index		
	BB515	FITC	Alexa Fluor® 488
Human CD3	302	43	81
Human CD4	174	47	58
Human CD19	85	16	15
Mouse CD8a	86	24	50
Mouse CD11b	68	15	26

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



R718 data

Specificity	Stain Index	
	R718	Alexa Fluor® 700
Human CD3	373	131
Human CD4	297	89
Human CD19	59	32
Mouse CD4	89	58
Mouse CD8a	106	51



流式細胞術染色診療室

實驗症頭	貨號	品名	Flow 處方箋說明
背景值過高或疑似有非專一性現象出現	564219	Human Fc Block Pure Fc 1.3070 50 ug*	Fc receptor blocking 減少非專一性抗體結合
	553141	Mouse CD16/CD32 Purified 2.4G2 0.1 mg*	
	570003	MonoBlock™ Leukocyte Staining Buffer 100 test	減少非特異性螢光背景 (Cyanine 類的螢光，例如 PE-Cy7, PE-Cy5 等等)，可和 Fc block 同時使用加強效果
	568264	Brilliant Stain Buffer Plus 100 tests*	同時染兩種以上 Horizon Brilliant™ 系列螢光推薦使用，可減少螢光抗體非專一性結合
檢體易有細胞團塊。用 sorter 分選時不知道用什麼 buffer 保存細胞	563503	BD FACS™ Pre-Sort Buffer, 250 tests	可維持單細胞懸浮，減少背景值和細胞結塊，適合用於流式分選或分析
sorter 分選後的幹細胞生長不佳	562822	ROCK Inhibitor (Y-27632)	抑制 Rho/ROCK 訊號，降低單細胞解離誘導的凋亡，提升幹細胞存活與恢復率
細胞數過少無法做單染或單染無顯著陽性訊號，不易做螢光補償	569991	SpectraComp™ Unmixing and Compensation Particles, 100 tests	取代細胞做單色染色，陽性訊號結果可輕鬆做螢光補償，並減少細胞樣本的準備
	552843	Mouse Ig Kappa Comp Bead Set 6.0mL	
	552844	Rat Ig Kappa Comp Bead Set 6.0mL	

* 另外大包裝可供選擇



Fluorochrome Performance Chart — 解析度 & 漏光程度矩陣

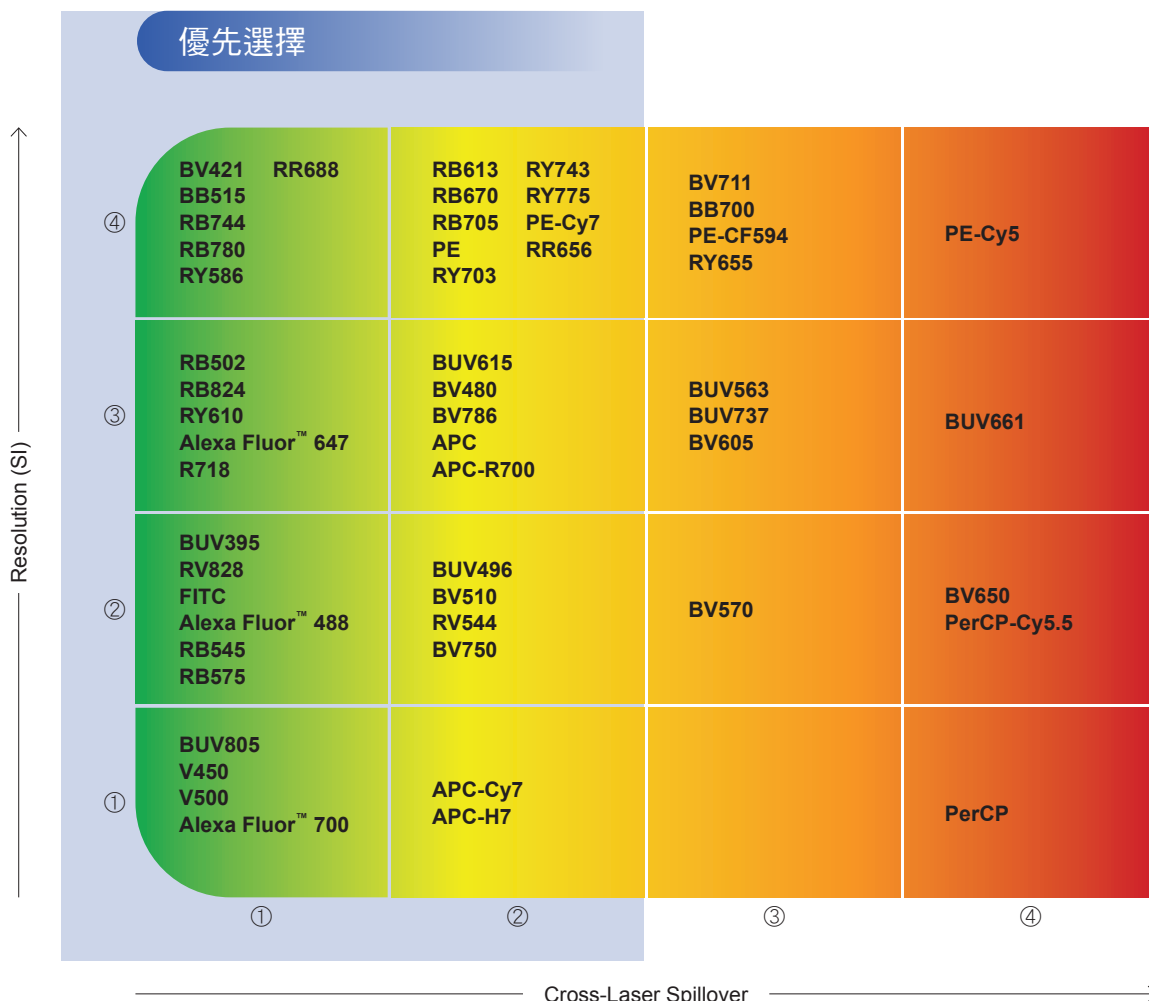


Chart contains representative fluorochromes compatible with a 5-laser spectral flow cytometer. Table may differ based on instrument configuration and settings. Spillover ranking is based on cross-laser excitation and does not take into account spillover into adjacent detectors.

座標軸說明：

- 解析度 (Resolution, SI)：數字越大表示陽性分群越清晰，弱訊號 (Dim marker) 越容易辨識。
- 漏光程度 (Spillover)：數字越大表示對其他通道的背景干擾越強，補償校正越複雜。

新版 BD®
Spectrum Viewer ►



更多
BD 螢光資訊 ►



BD

BD Horizon™
Real Fluorochromes
Antibody

雷射激發專一性螢光抗體