



CYTEK
TRANSCEND THE CONVENTIONAL

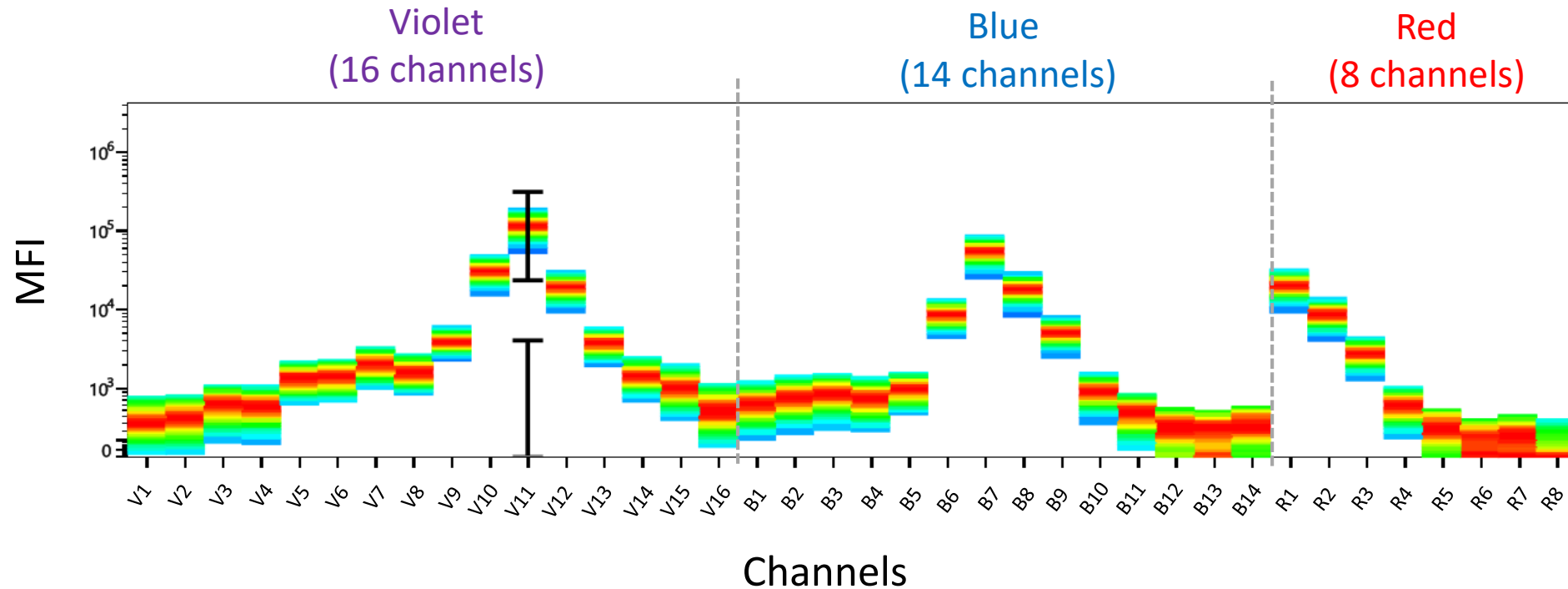
Cytek® Aurora Fluorochrome Selection Guidelines 3 Laser 16V-14B-8R

Fluorochrome Signatures

Dyes can be used in combination if they have unique spectrum signatures.

Look for dyes with unique spectra and consider spread introduced by the dyes when designing multicolor panels (see slide 23).

How to Read Full Spectrum Fluorochrome Signatures

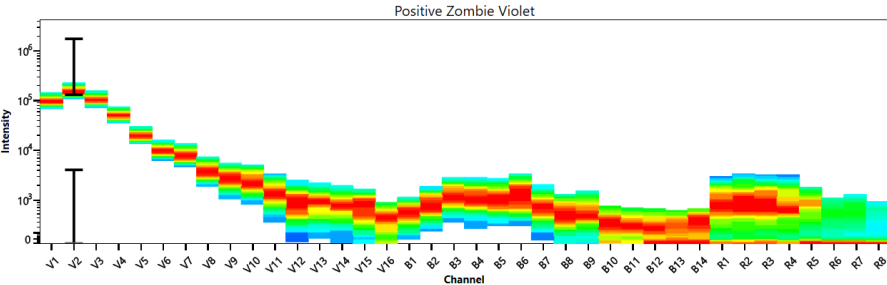
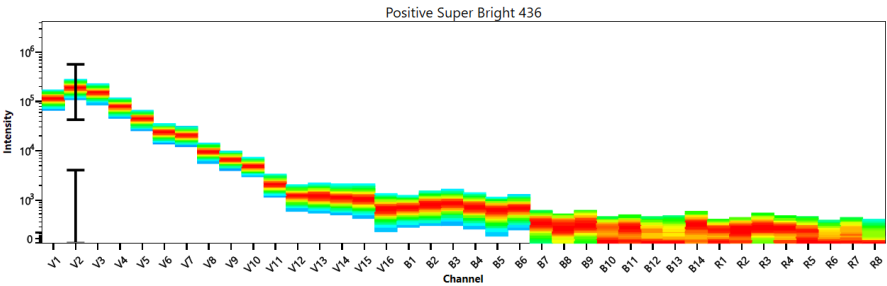


This dye is excited by all 3 lasers. The peak channel (indicated by the black bar) is in channel V11, and it has secondary emission in channels B7 and R1. Based on this information, expect this dye to introduce spread into dyes emitting at similar wavelengths.

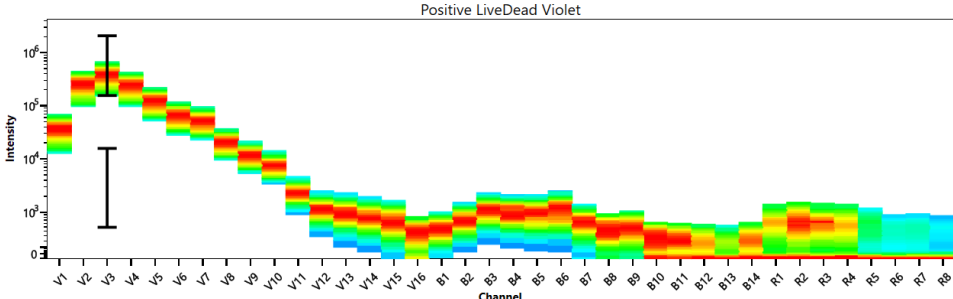
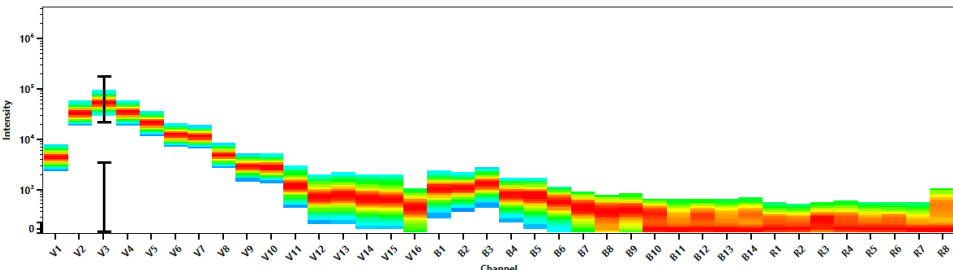
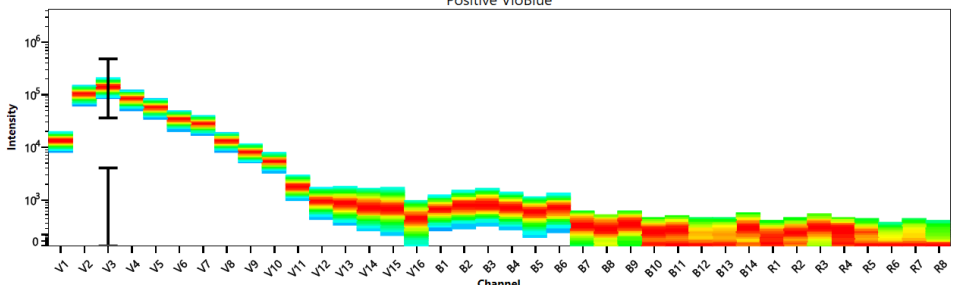
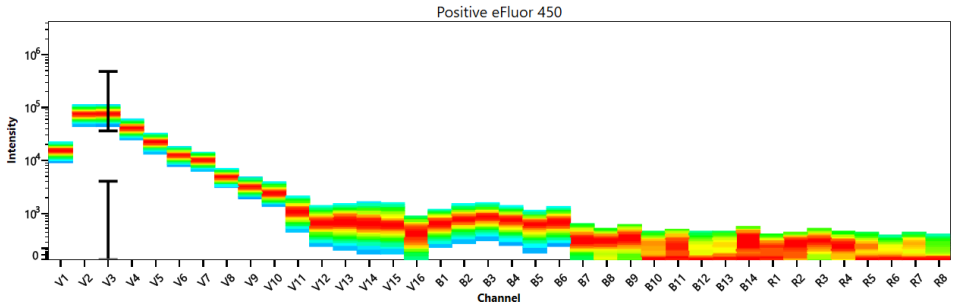
Dyes Primarily Excited by the Violet Laser

Violet Laser Excitable Dyes with Similar Signatures (1 of 3)

Super Bright 436 and Zombie Violet

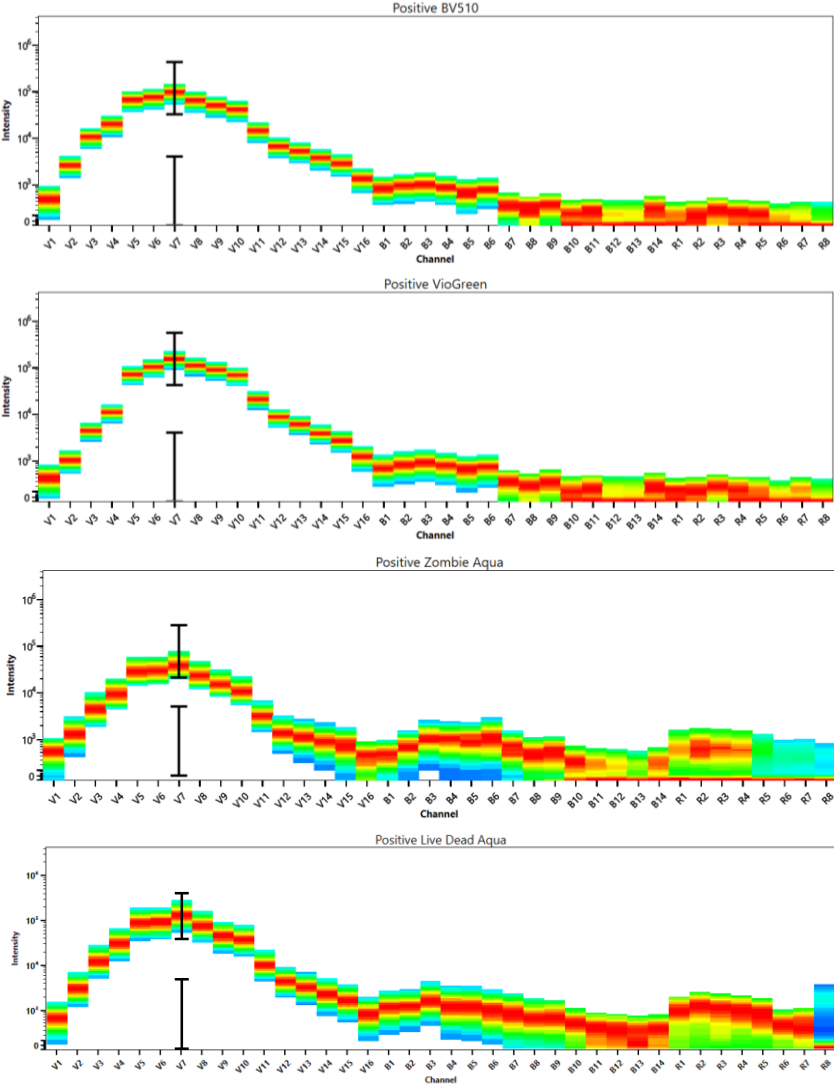


eFluor450, vioBlue, Pacific Blue, and Live/Dead Violet

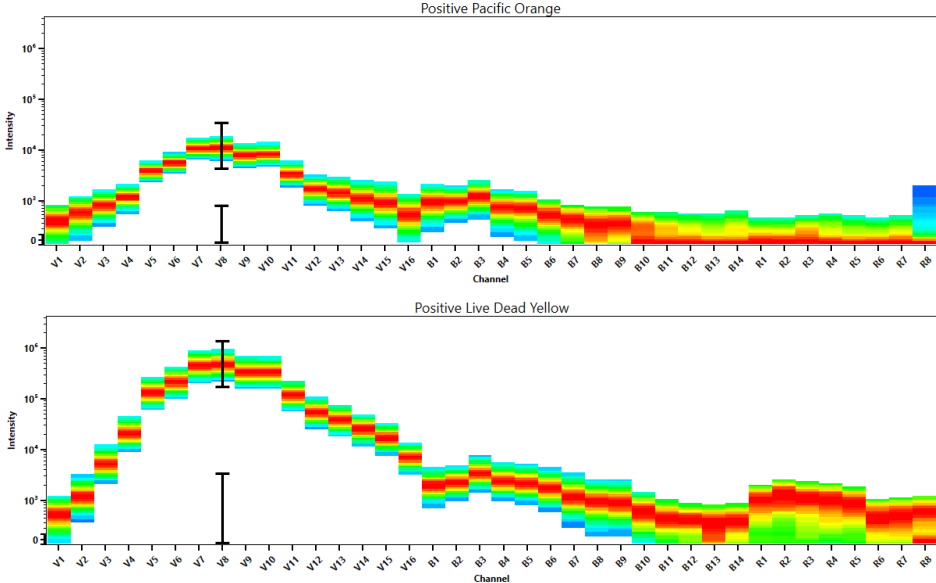


Violet Laser Excitable Dyes with Similar Signatures (2 of 3)

BV510, VioGreen, Zombie Aqua and Live/Dead Aqua

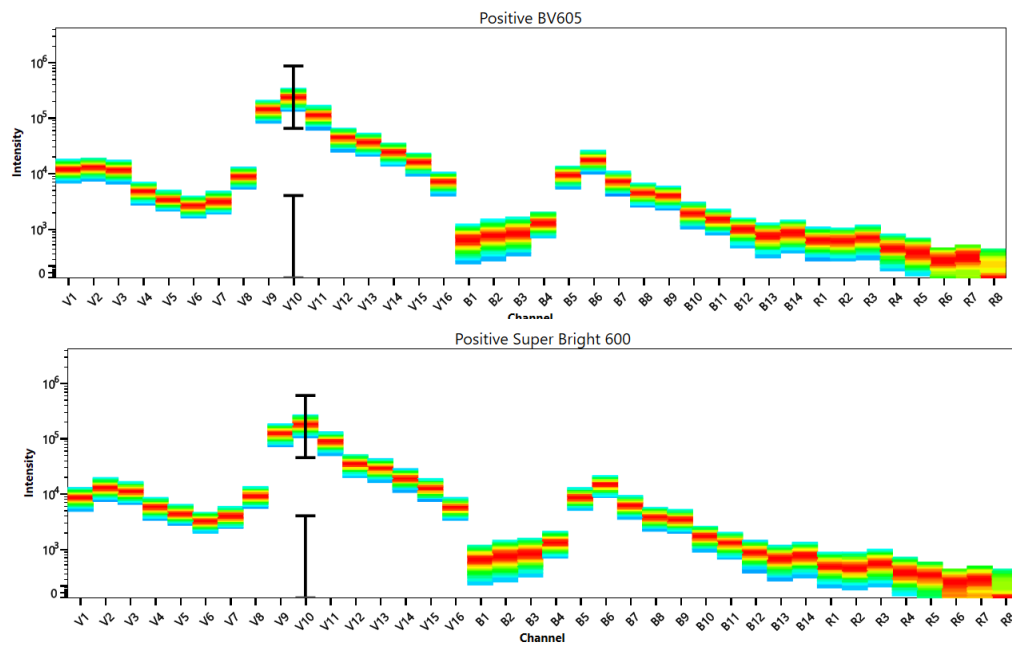


Pacific Orange and Live/Dead Yellow

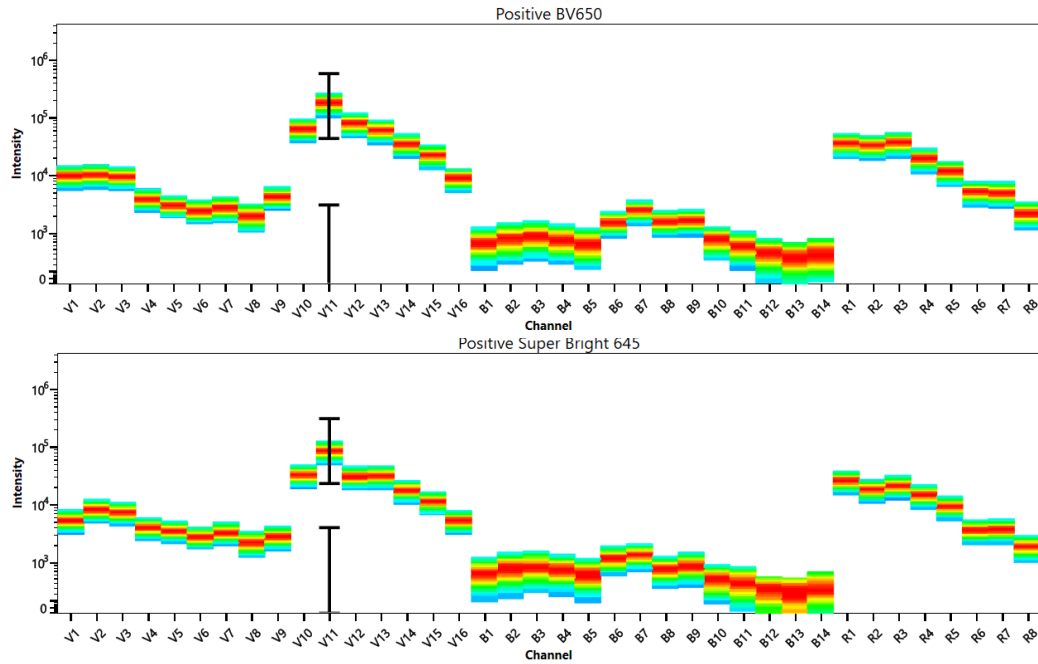


Violet Laser Excitable Dyes with Similar Signatures (3 of 3)

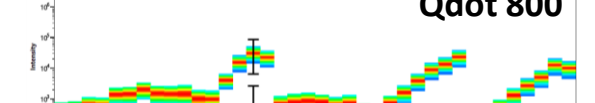
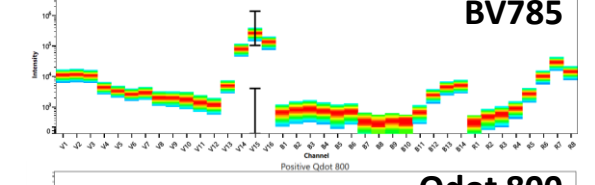
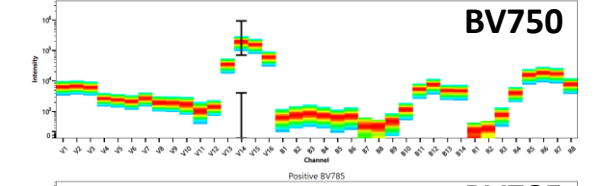
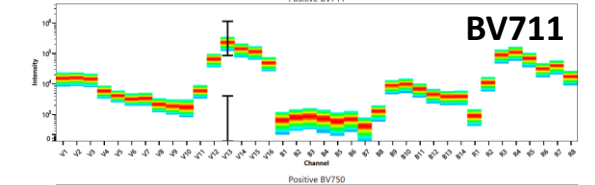
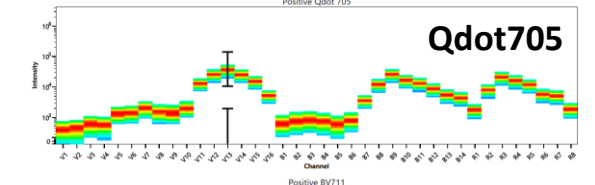
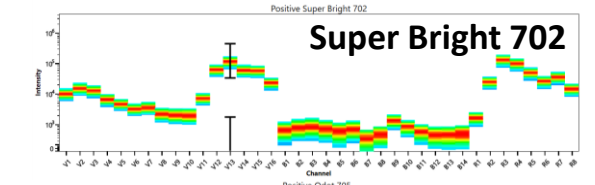
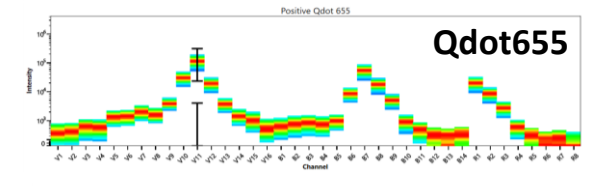
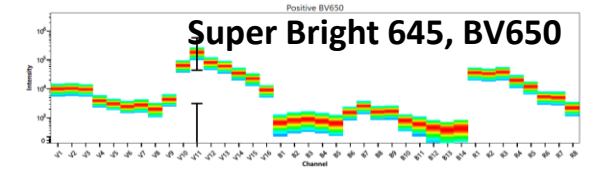
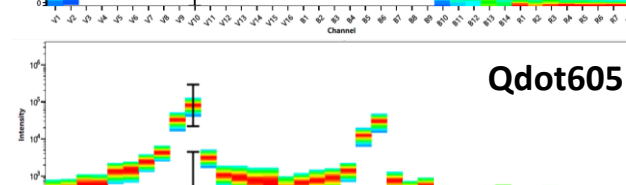
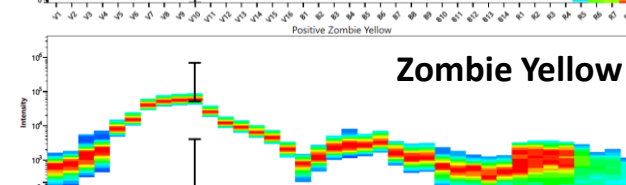
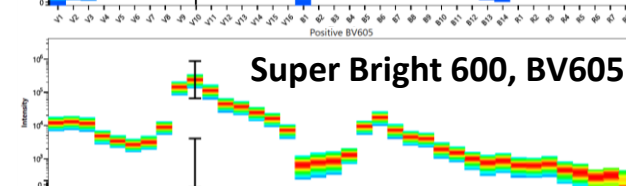
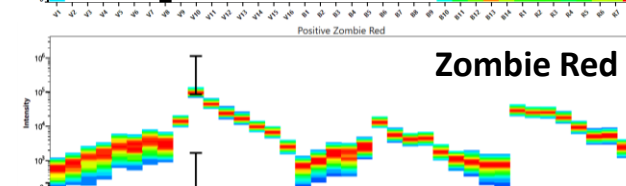
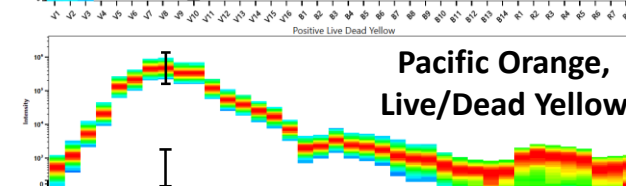
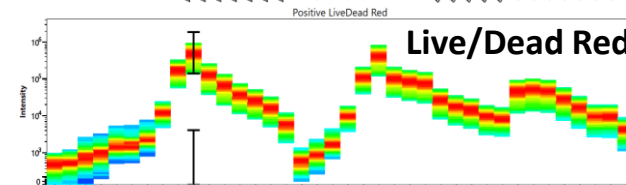
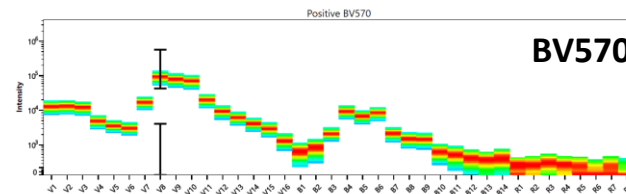
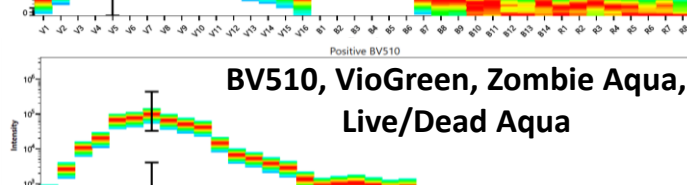
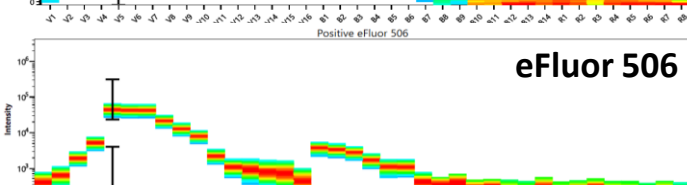
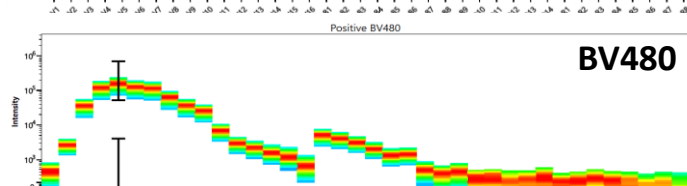
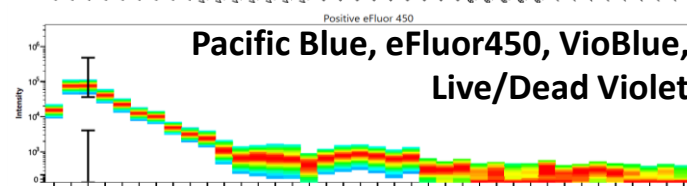
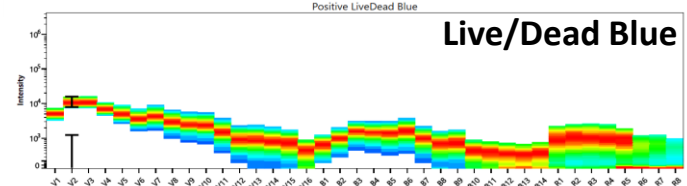
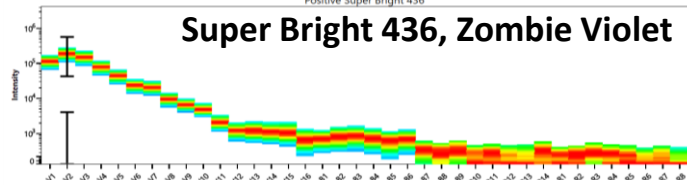
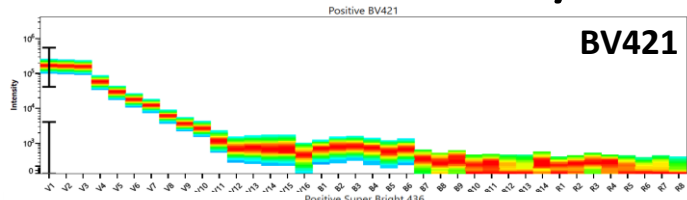
Super Bright 600 and BV605



Super Bright 645 and BV650



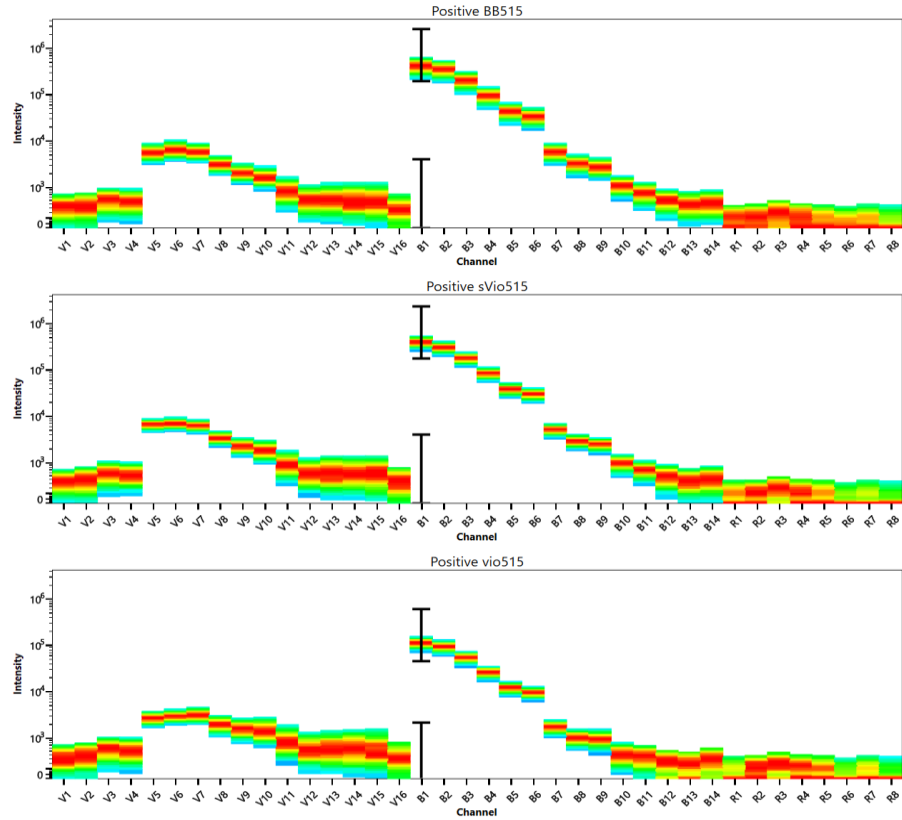
Violet Laser Excitable Dyes with Unique Signatures



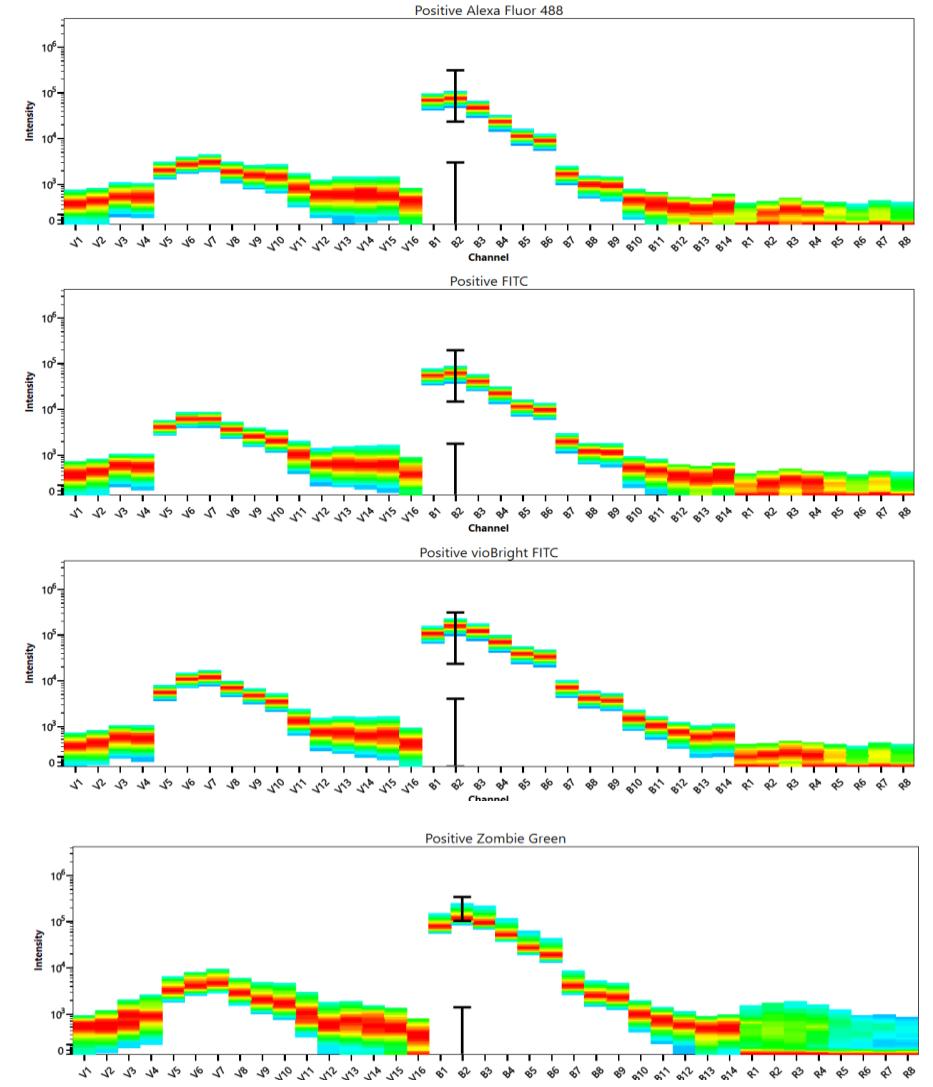
Dyes Primarily Excited by the **Blue Laser**

Blue Laser Excitable Dyes with Similar Signatures (1 of 2)

BB515, sVio515, and Vio515

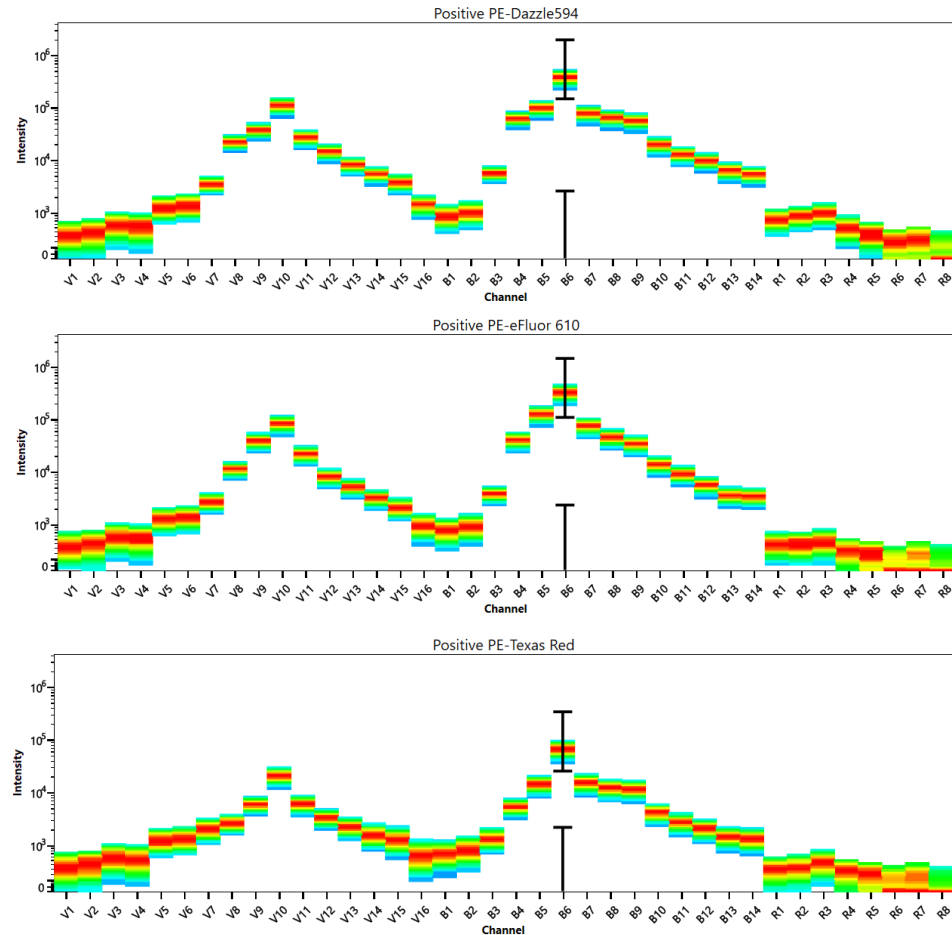


Alexa Fluor 488, FITC, vioBright FITC, Zombie Green

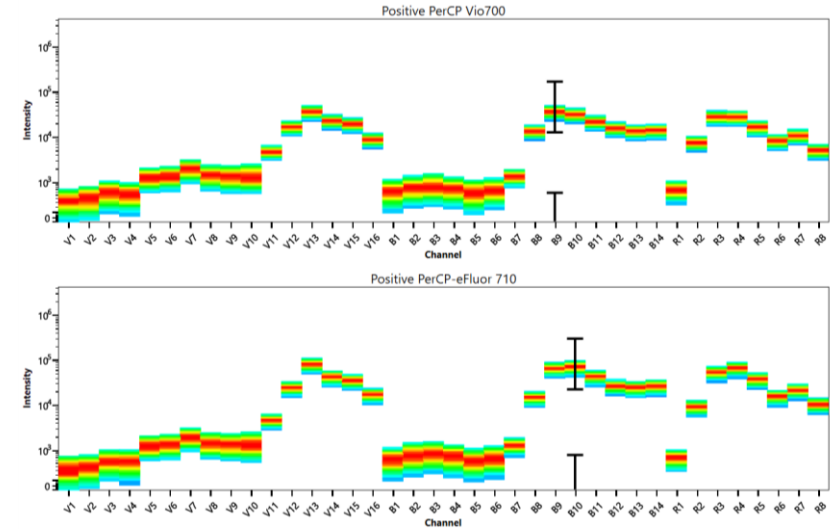


Blue Laser Excitable Dyes with Similar Signatures (2 of 2)

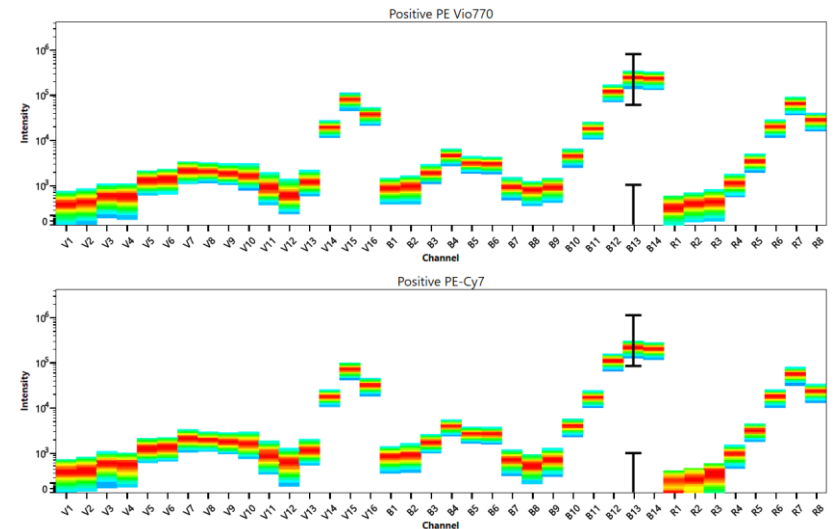
PE/Dazzle594, PE-eFluor 610 and PE-Texas Red



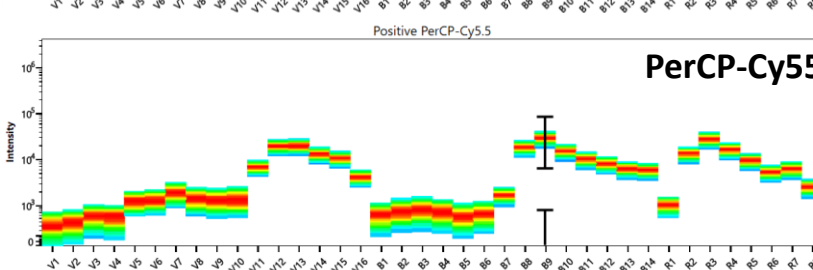
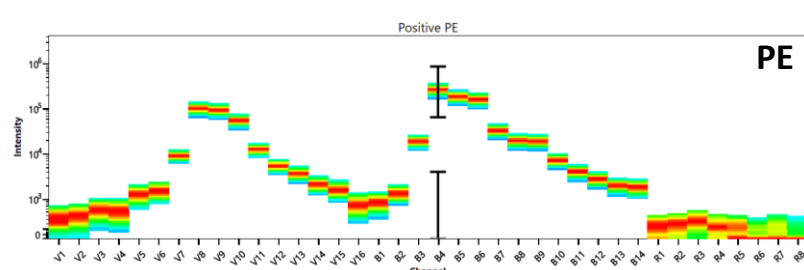
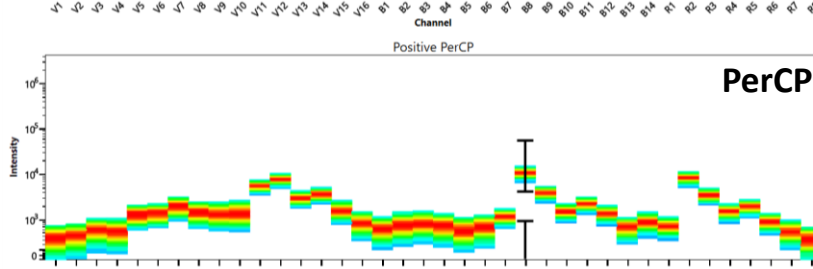
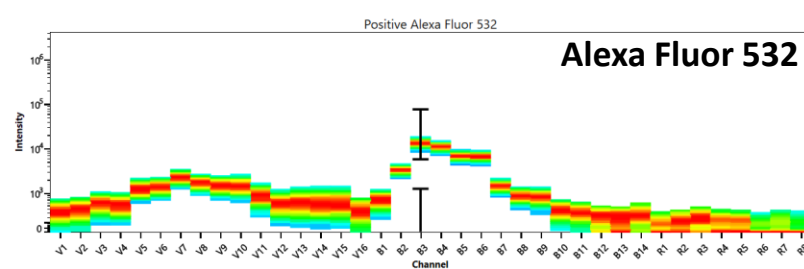
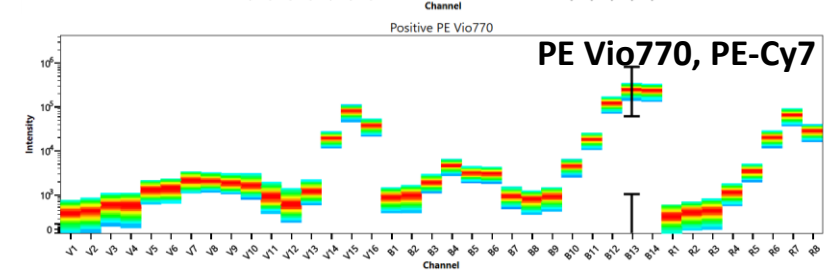
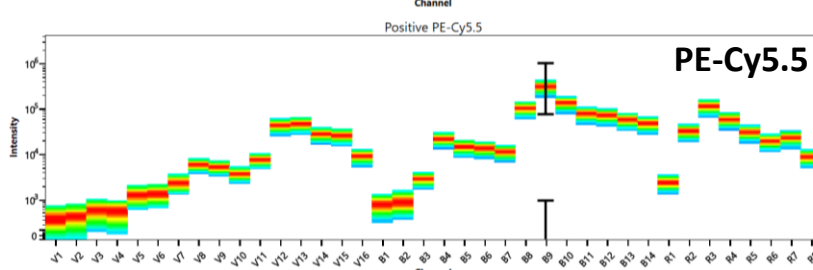
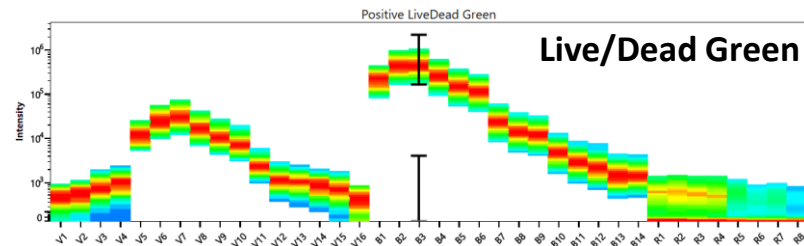
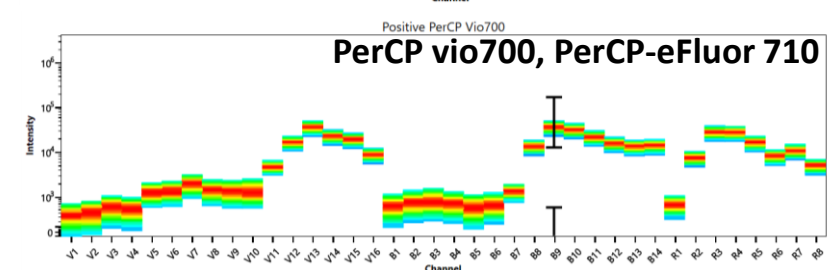
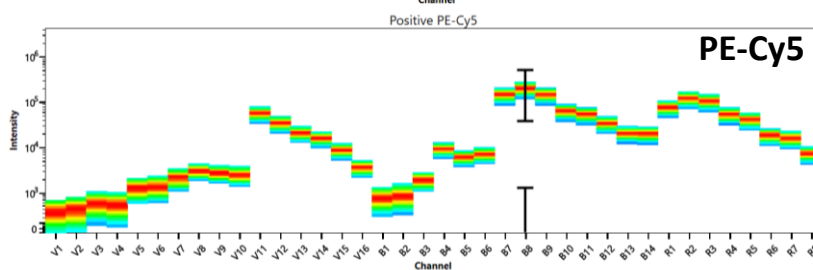
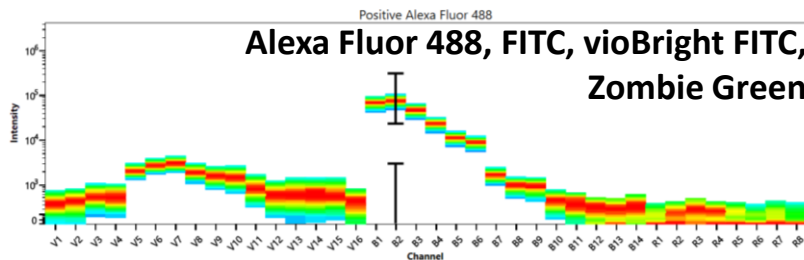
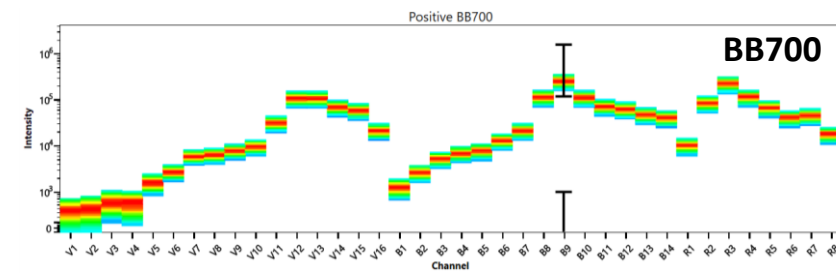
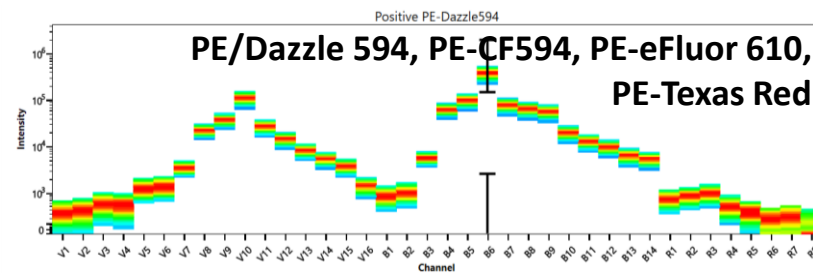
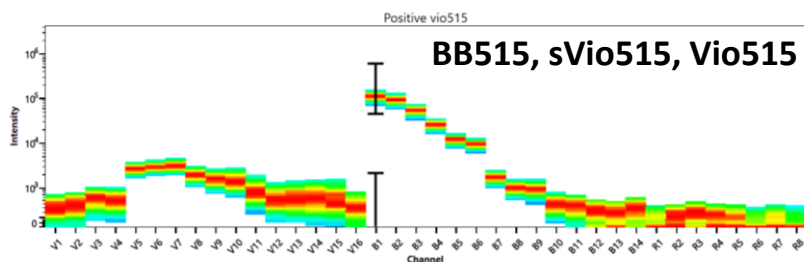
PerCP vio700 and PerCP-eFluor 710



PE Vio770 and PE-Cy7



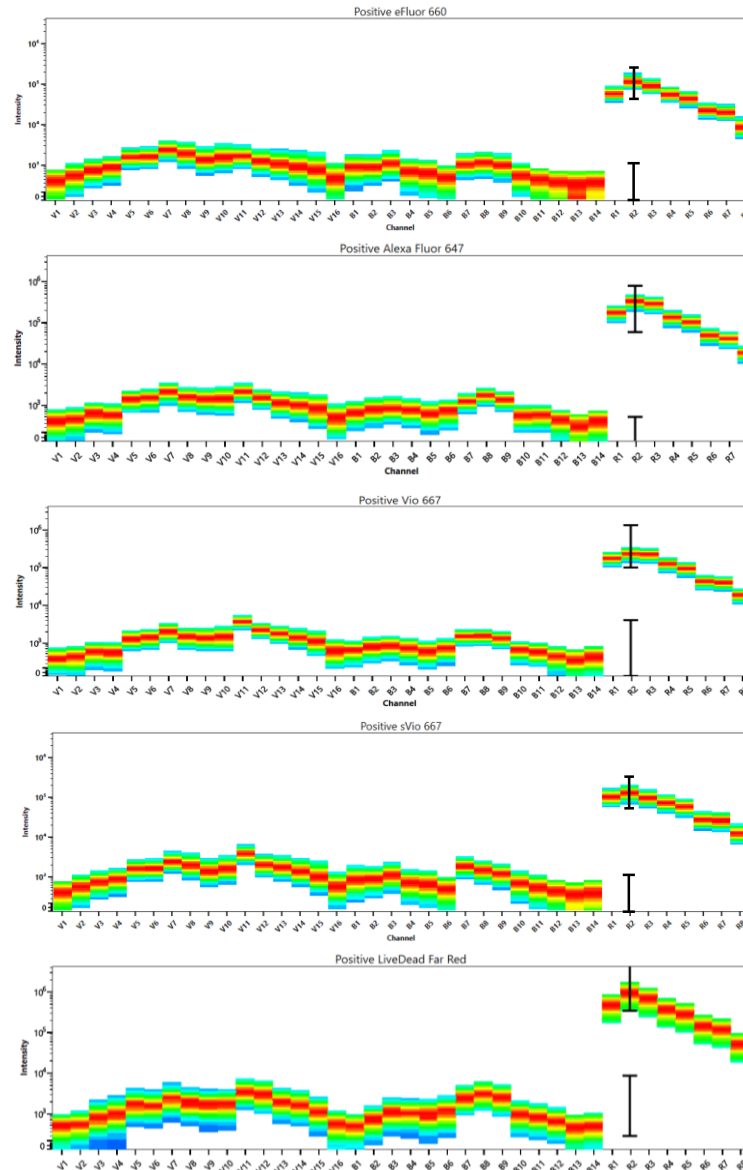
Blue Laser Excitable Dyes with Unique Signatures



Dyes Primarily Excited by the **Red Laser**

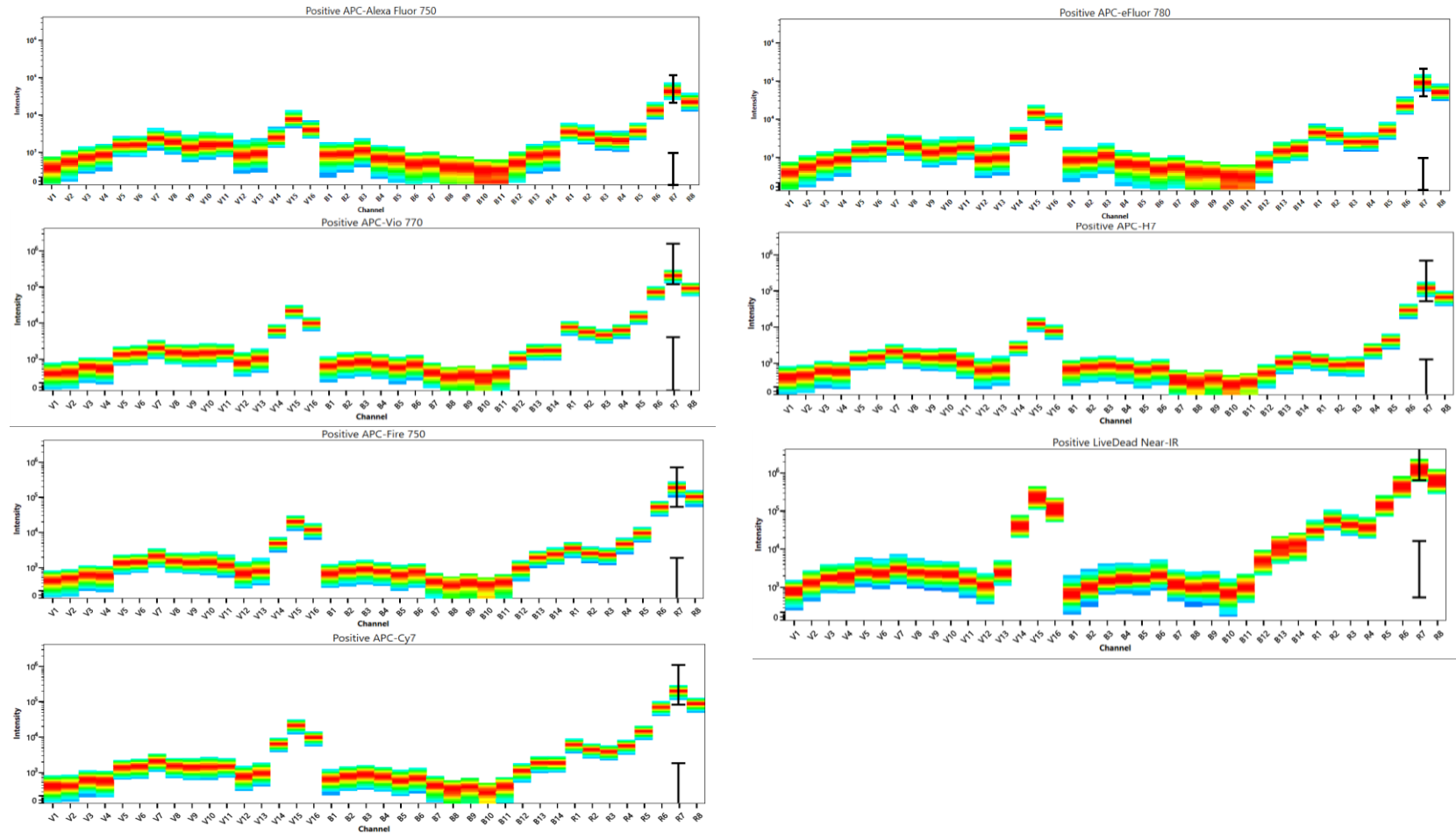
Red Laser Excitable Dyes with Similar Signatures

eFluor 660, Alexa Fluor 647, Vio 667, sVio 667 and Live/Dead Far Red

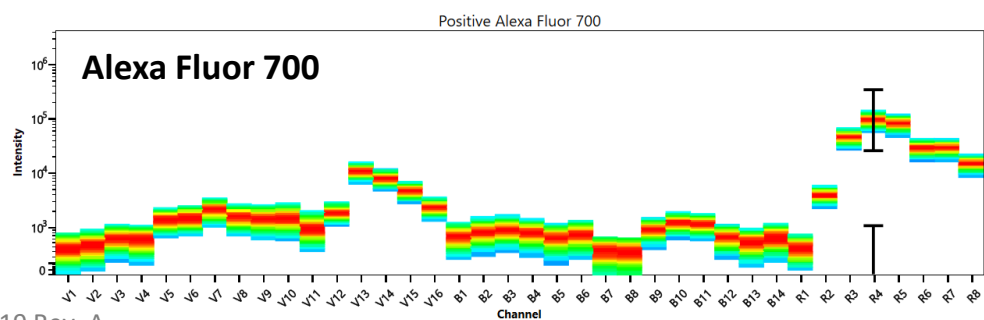
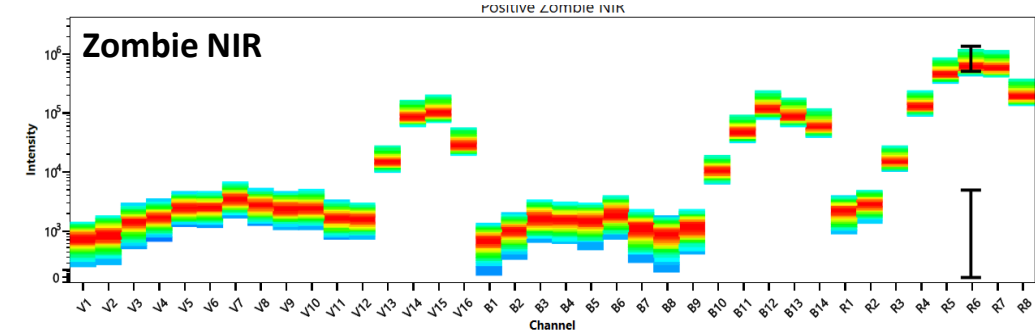
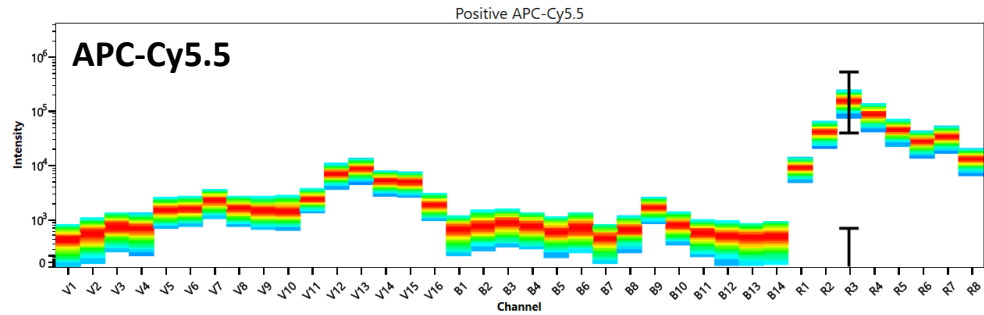
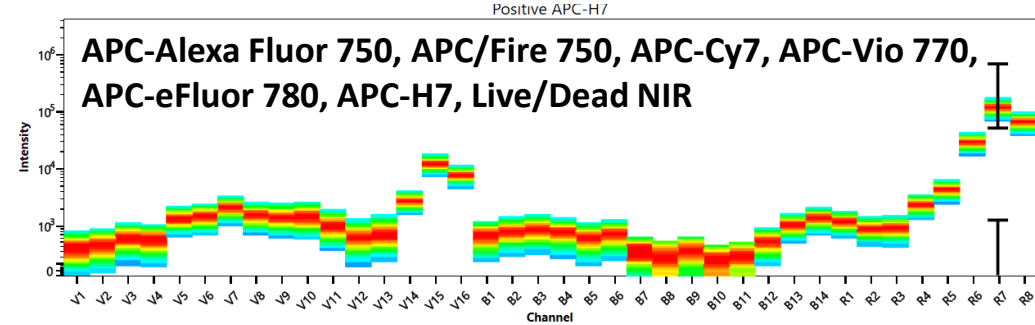
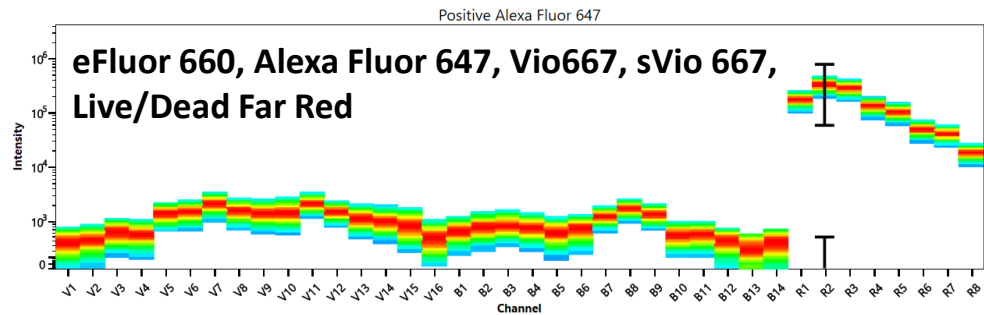
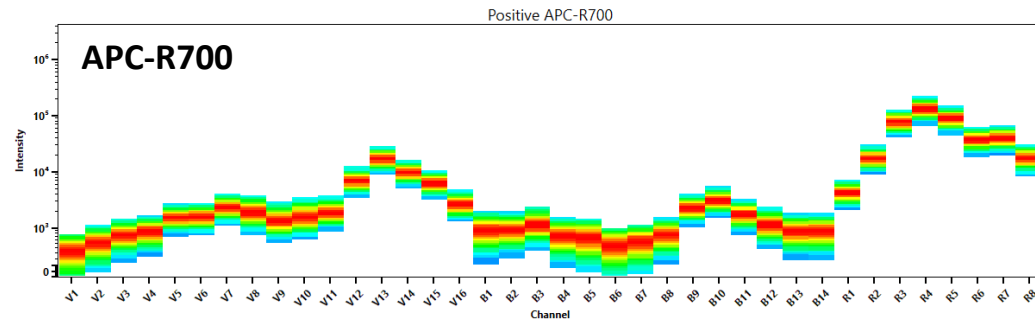
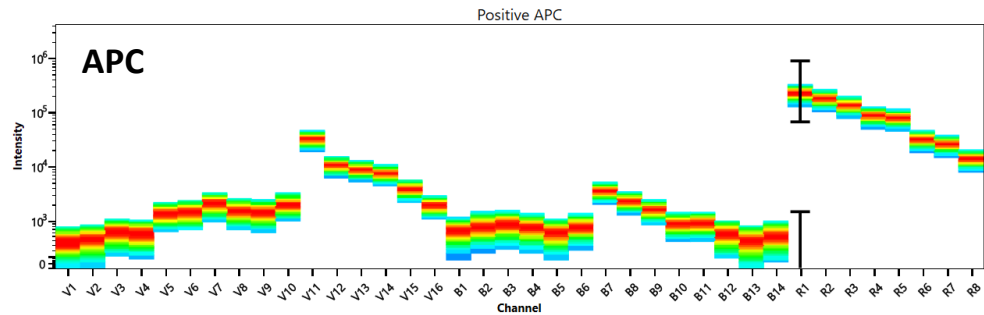


Red Laser Excitable Dyes with Similar Signatures

APC-Alexa 750, APC-Vio 770, APC/Fire 750, APC-Cy7, APC-eFluor 780, APC-H7, and Live/Dead NIR



Red Laser Excitable Dyes with Unique Signatures



Peak Channels & Possible Combination of Dyes

Fluorochrome Peak Channels

Violet Excited Fluors		Peak Channel	Blue Excited Fluors		Peak Channel	Red Excited Fluors		Peak Channel
BV421	V1	BB515, sVio515, Vio515	B1	APC	R1			
Alexa Fluor 405, Super Bright 436, Zombie Violet, Live/Dead Blue	V2	Alexa Fluor 488, FITC, VioBright FITC, Zombie Green	B2	Alexa Fluor 647, Vio 667, sVio 667, Live/Dead Far Red, eFluor 660	R2			
eFluor 450, VioBlue, Pacific Blue, Live/Dead Violet	V3	Alexa Fluor 532, Live/Dead Green	B3	APC-Cy5.5	R3			
BV480	V4	PE	B4	Alexa Fluor 700, APC-R700	R4			
eFluor 506	V5	PE/Dazzle 594, PE-CF594, PE-eFluor 610, PE-Texas Red	B6	APC-Alexa 750, APC/Fire 750, APC-Cy7, APC-Vio 770, APC-eFluor 780, APC-H7, Live/Dead NIR	R7			
BV510, VioGreen, Zombie Aqua, Live/Dead Aqua	V7	PE-Cy5, PerCP	B8					
BV570, Pacific Orange, Live/Dead Yellow	V8	PE-Cy5.5, PerCP-Cy5.5, BB700	B9					
BV605, Super Bright 600, Qdot 605, Live/Dead Red, Zombie Yellow	V10	PerCP Vio700, PerCP-eFluor 710	B10					
BV650, Super Bright 645, Qdot 655	V11	PE Vio770, PE-Cy7	B13					
BV711, Super Bright 702, Qdot 705	V13							
BV750	V14							
BV785, BV786, Qdot 800	V15							

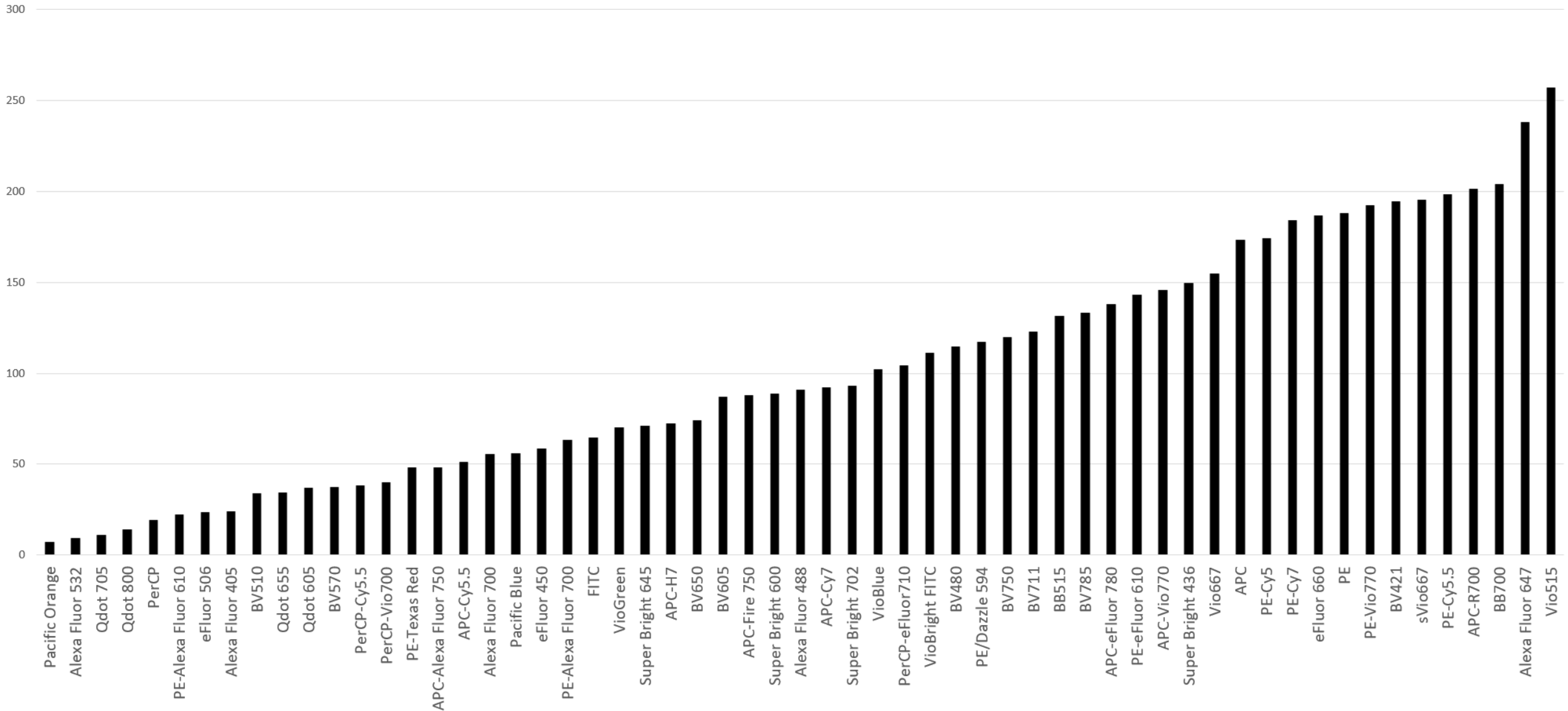
Example of 24 Dyes that Can Be Used in Combination (CAREFUL PANEL DESIGN IS NEEDED)

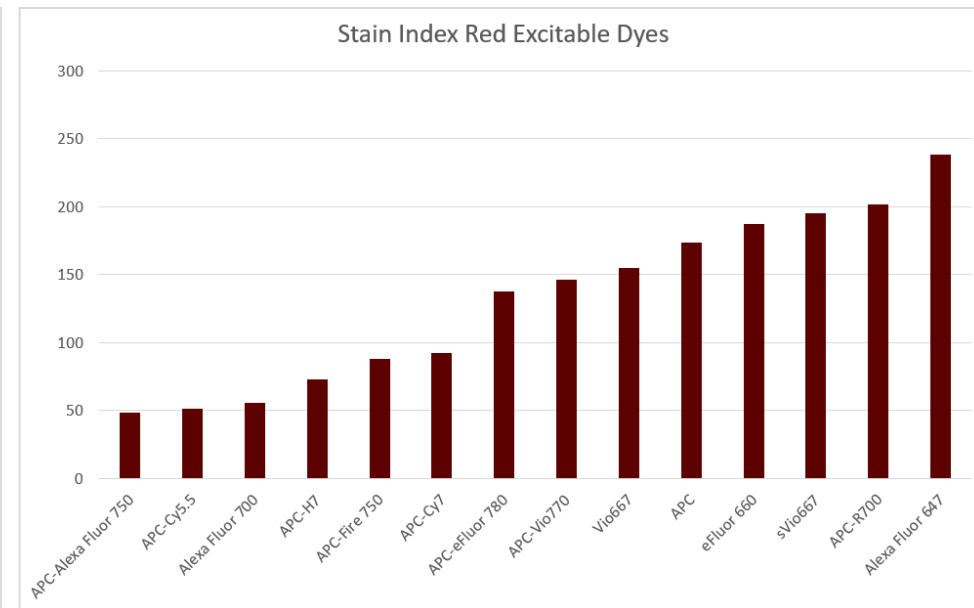
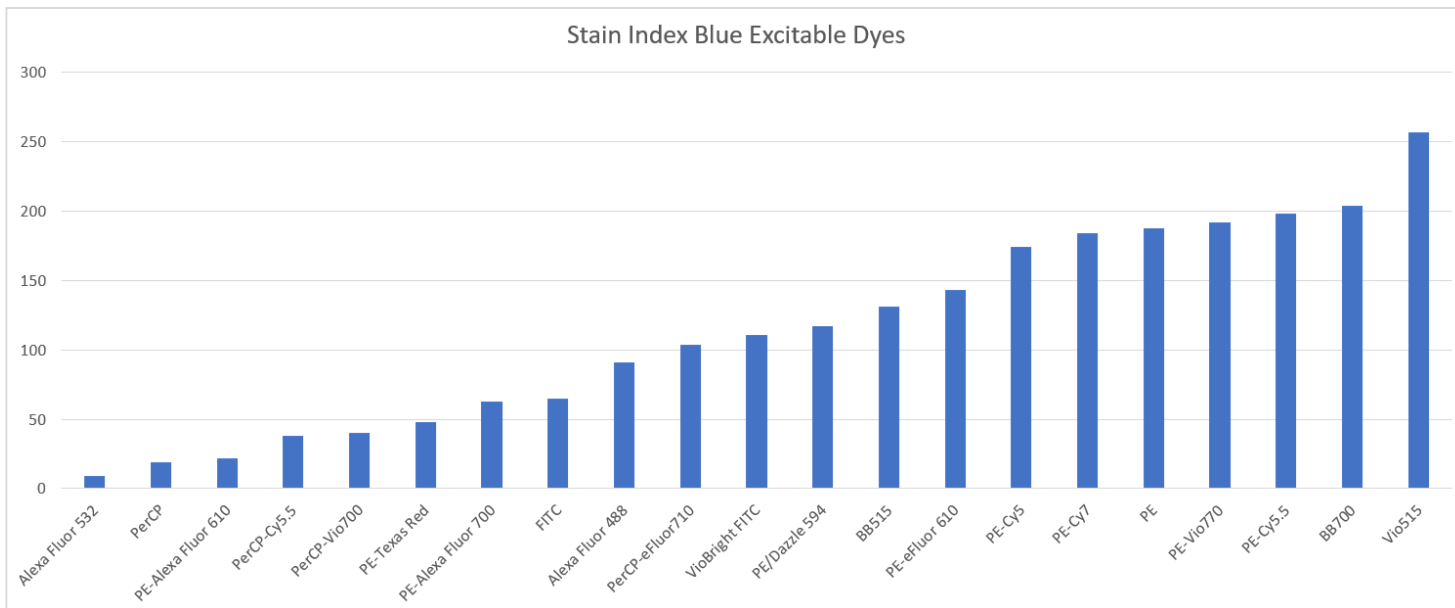
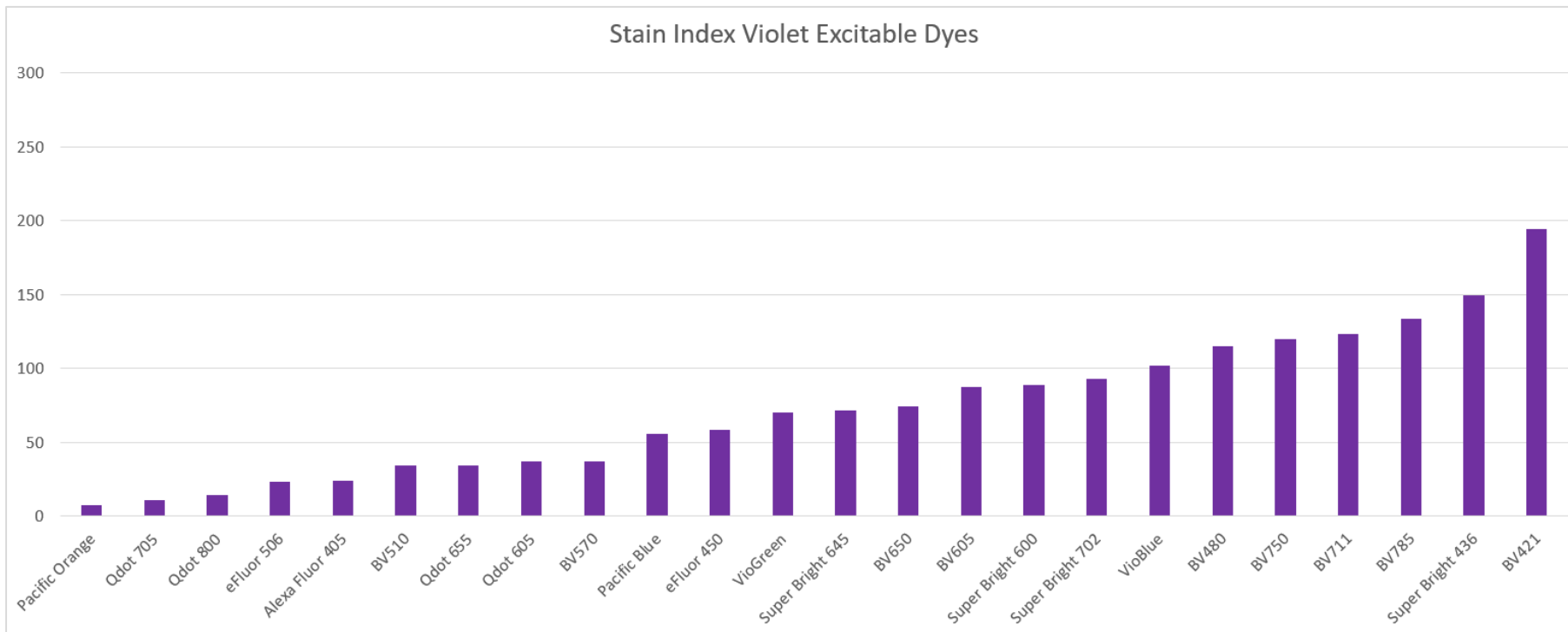
Fluorophore	Fluorophore	Fluorophore
BB515	APC	BV421
Alexa Fluor 488 or FITC	Alexa Fluor 647	Super Bright 436
Alexa Fluor 532	APC-R700 or AF700	eFluor 450 or equivalent
PE	APC/Fire 750 or equivalent	BV480
PE/Dazzle 594 or equivalent		BV510
PE-Cy5		BV570
PerCP-Cy5.5		BV605
PerCP-eFluor710		BV650
PE-Cy7		BV711
		BV750
		BV785

Stain Indexes

Data generated using CD4 staining in human PBMCs

Stain Index Ranking - 59 Dyes





Cross-Stain Index Matrix

Dyes used in combination need to have unique spectra AND need to be assessed in terms of spread that they introduce to other dyes.

For example PerCP-Cy5.5 and PE-Cy5.5 have distinct signatures, but since both dyes emit in the same wavelength range and significant spread is introduced by PE-Cy5.5, careful panel design is needed when used in combination.

Spread Matrix for 24 Fluors that can be Used in Combination

	BV421	Super Bright 436 eFluor 450	BV480	BV510	BV570	BV605	BV650	BV711	BV750	BV785	BB515	Alexa Fluor 488	Alexa Fluor 532	PerCP-Cy5.5	PerCP-eFluor 710	PE	PE-Dazzle594	PE-Cy5	PE-Cy7	APC	Alexa Fluor 647	Alexa Fluor 700	APC-Fire 750
BV421	Black	Red																					
Super Bright 436	Red	Black																					
eFluor 450		Red	Black																				
BV480			Black																				
BV510				Black																			
BV570					Black																		
BV605						Black																	
BV650							Black																
BV711								Black	Red	Red												Red	
BV750									Black	Red													
BV785										Black													
BB515											Black	Red	Red				Red						
Alexa Fluor 488											Red	Black	Red										
Alexa Fluor 532												Black											
PerCP-Cy5.5													Black										
PerCP-eFluor 710								Red	Red					Black								Red	
PE						Red									Black		Red						
PE-Dazzle594																Black							
PE-Cy5							Red						Red	Red			Black				Red		
PE-Cy7										Red								Black					
APC								Red											Black		Red	Red	
Alexa Fluor 647																				Black	Red	Red	
Alexa Fluor 700																						Black	
APC-Fire 750																							Black

To read this table: fluor in the row impacts the one in the column. Red means the fluor in that row has significant spread into the dye in the column (for example PE into BV570). Areas in bright pink and red is where more attention to panel design is needed.

Document Revision History

Effective Date	Description of Change	Revision	EC No.
10/21/2019	Initial Release	A	EC-00265