



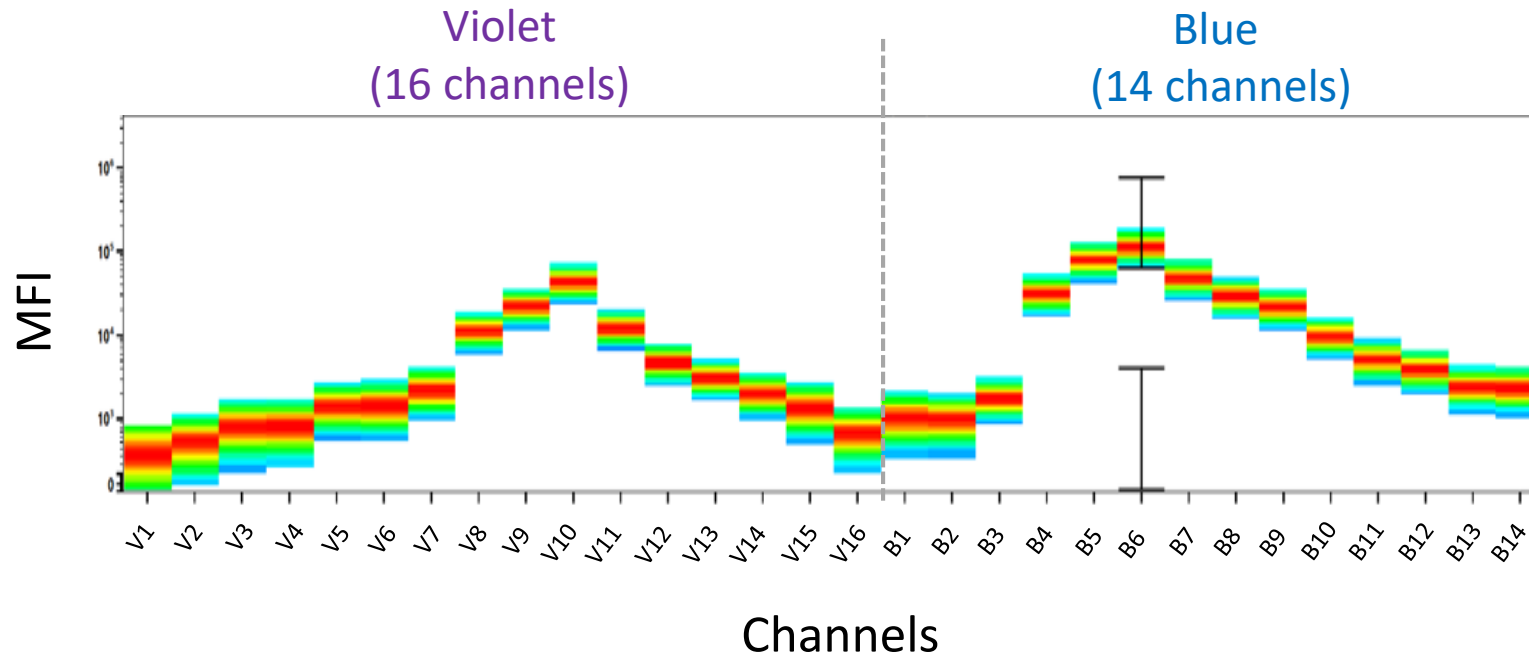
Cytek® Aurora Fluorochrome Selection Guidelines 2 Laser 16V-14B

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 19).

How to Read Full Spectrum Fluorochrome Signatures

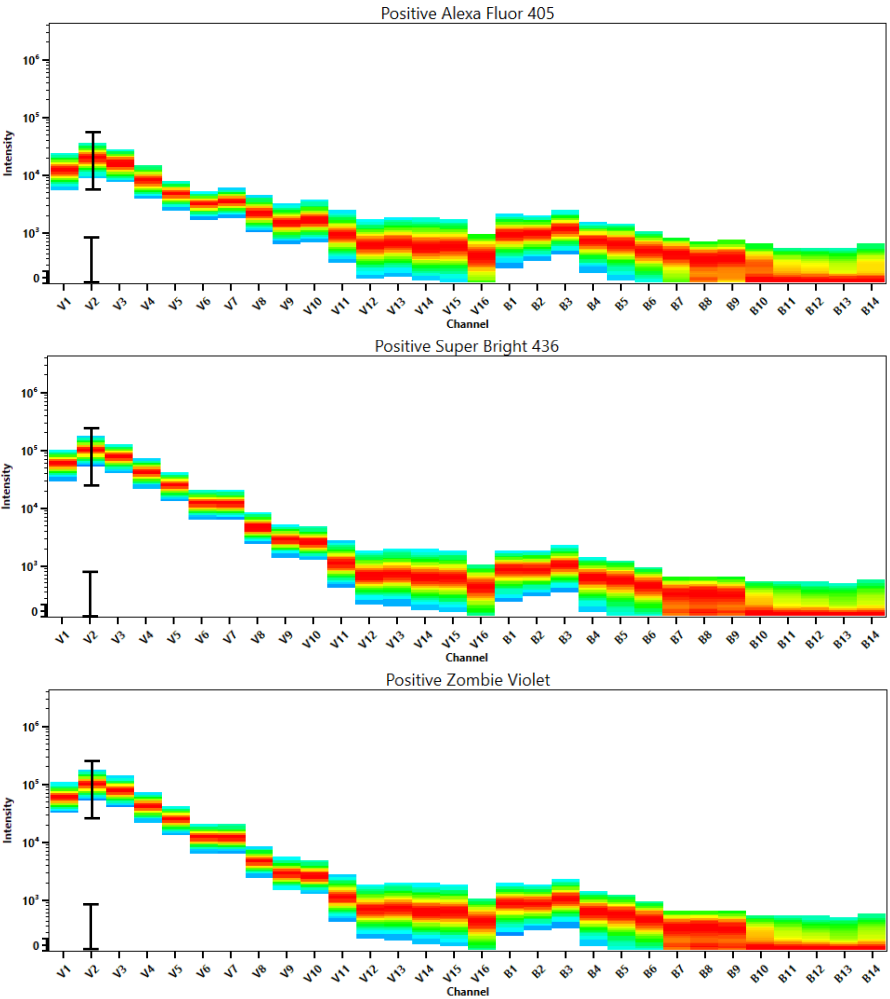


This dye is excited by both lasers. The peak channel (indicated by the black bar) is in channel B6, and it has secondary emission in channel V10. Based on this information, expect this dye to introduce spread into dyes emitting at similar wavelengths.

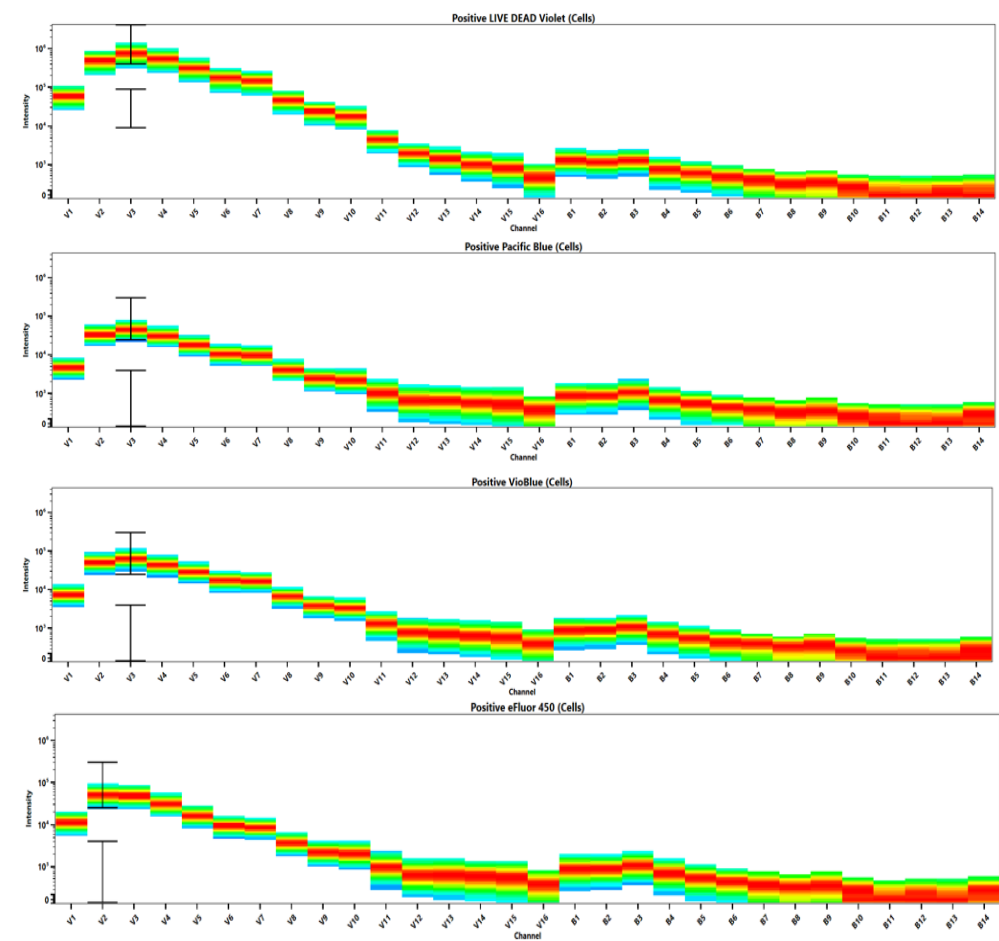
Dyes Primarily Excited by the Violet Laser

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

Alexa Fluor 405, Super Bright 436, and Zombie Violet

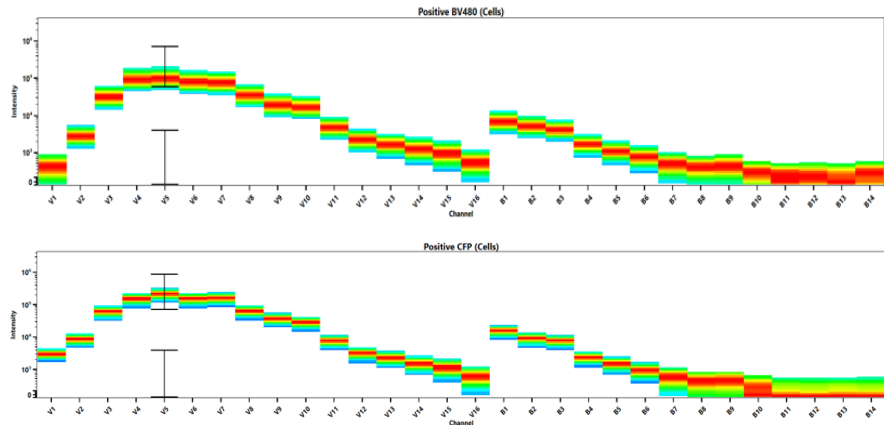


eFluor 450, Pacific Blue, VioBlue, Live/Dead Violet

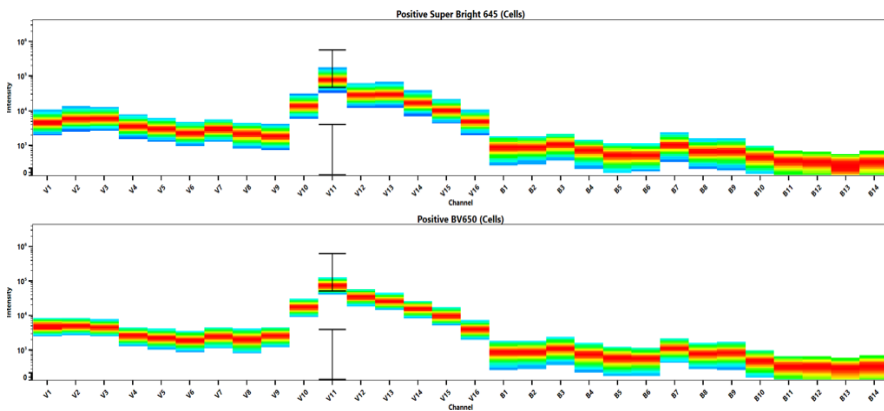


Violet Laser Excitable Dyes with Similar Signatures (2 of 2)

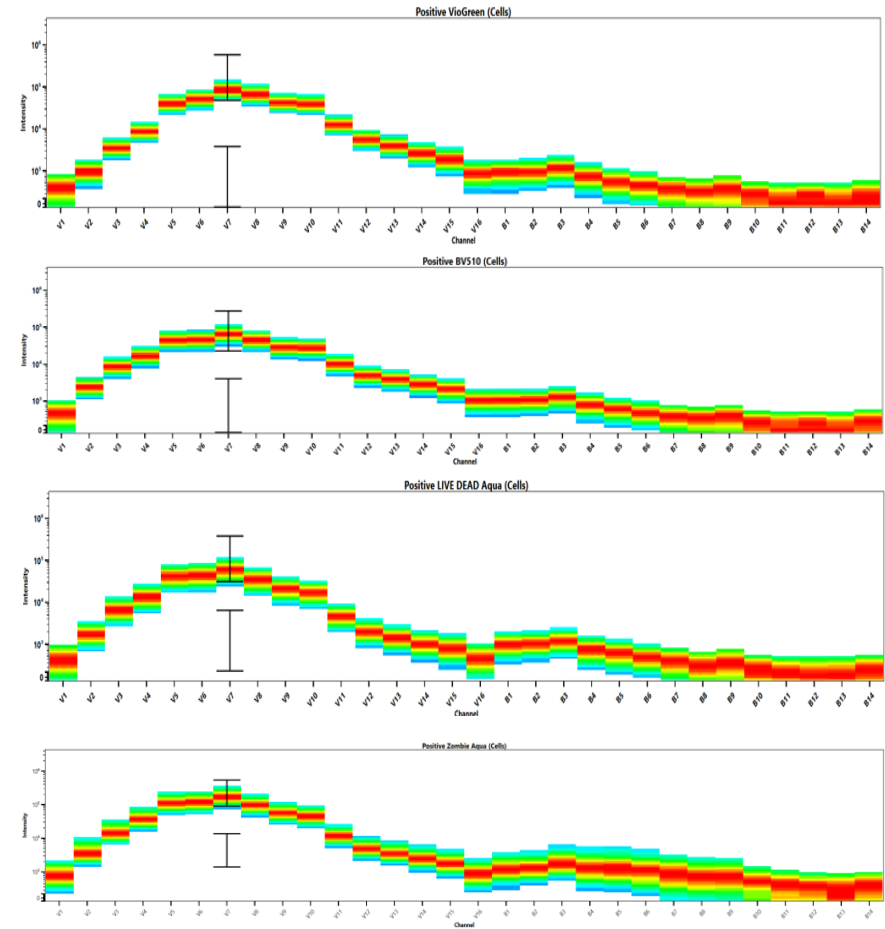
BV480 and CFP



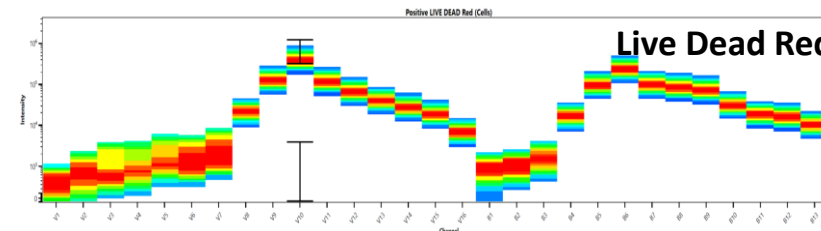
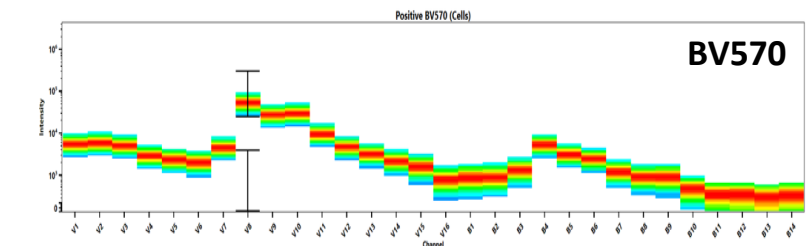
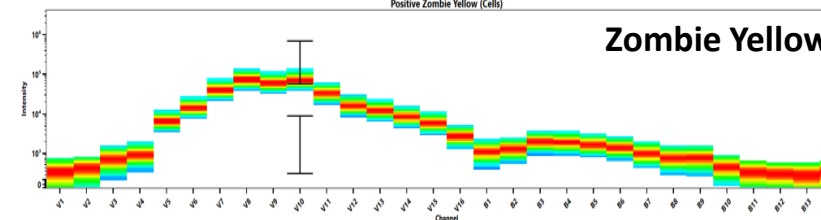
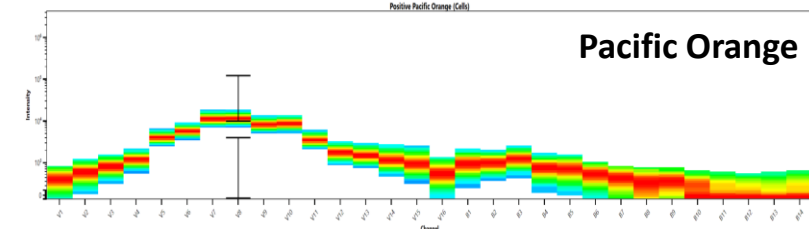
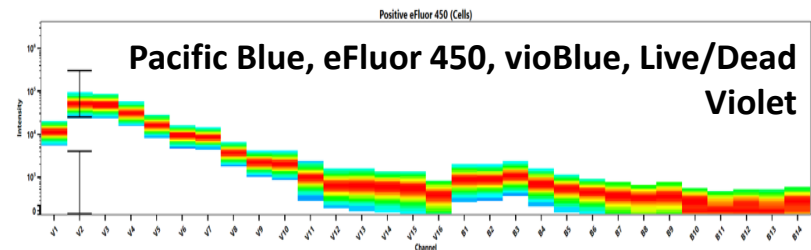
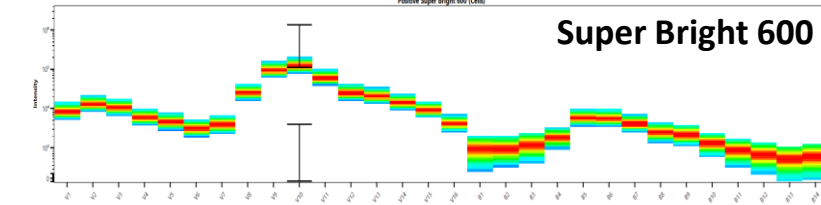
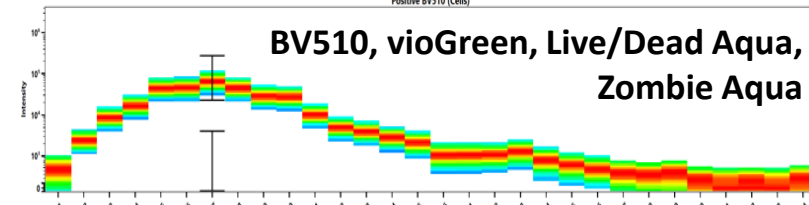
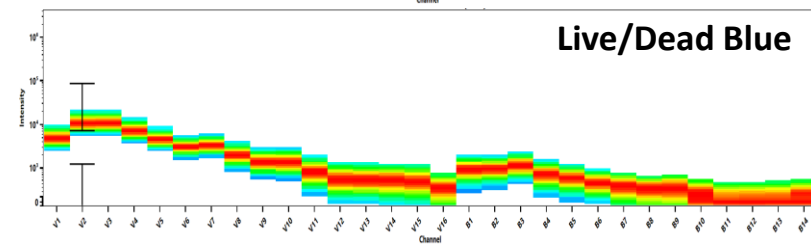
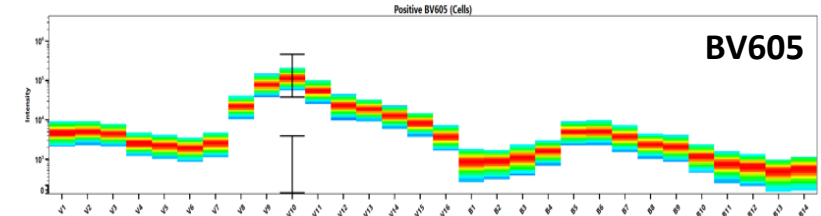
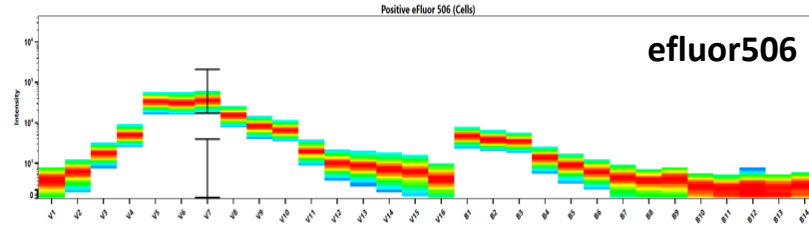
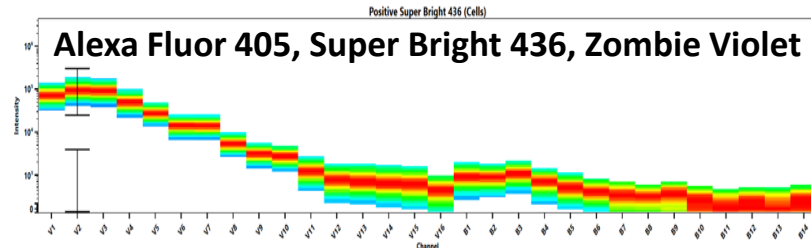
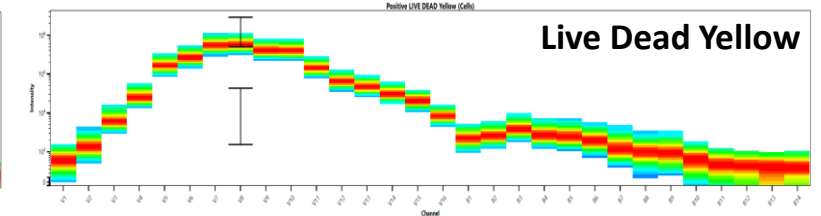
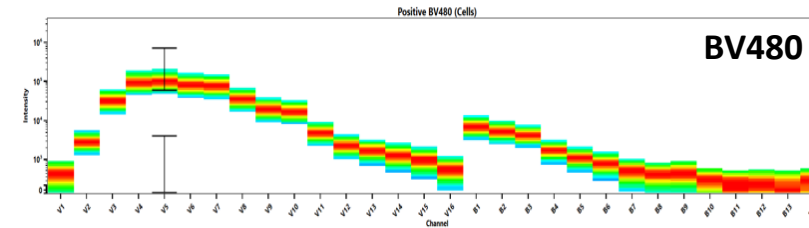
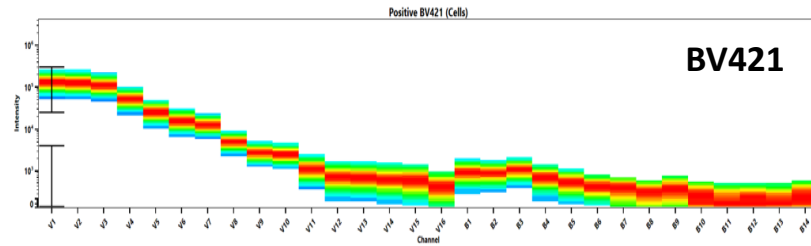
Super Bright 645 and BV650



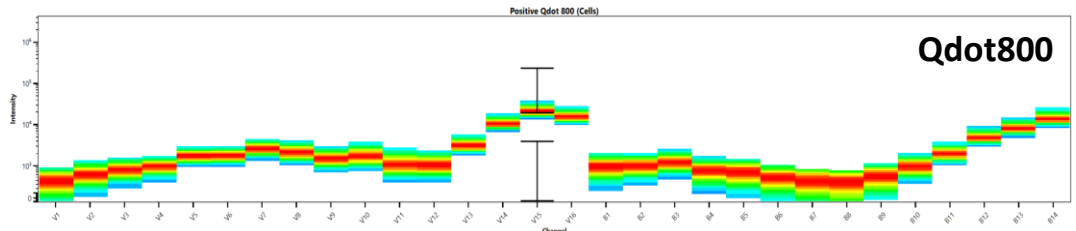
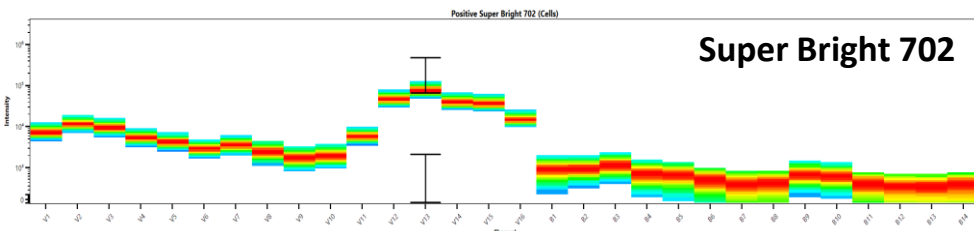
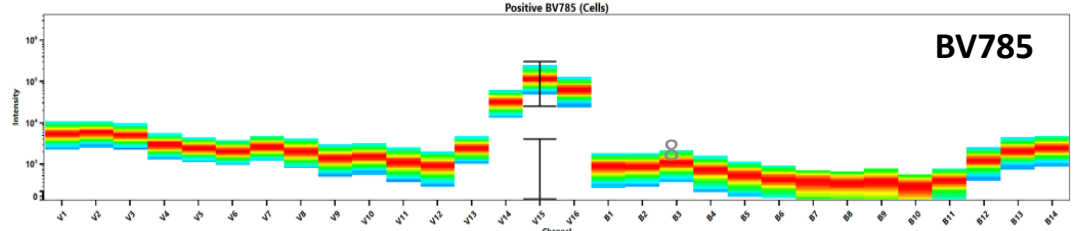
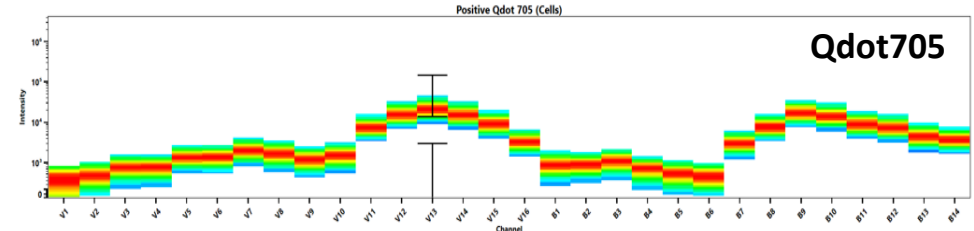
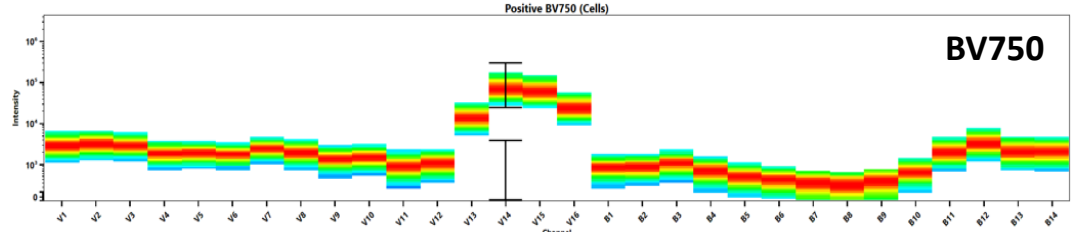
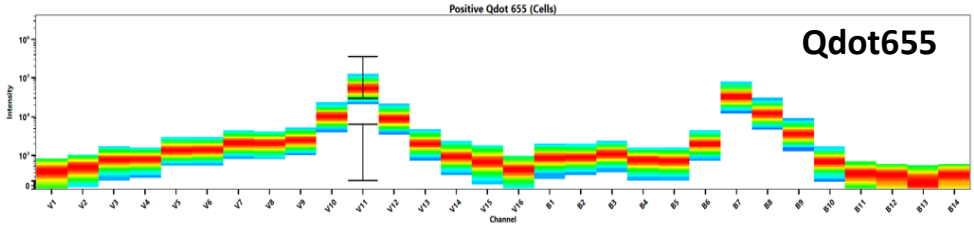
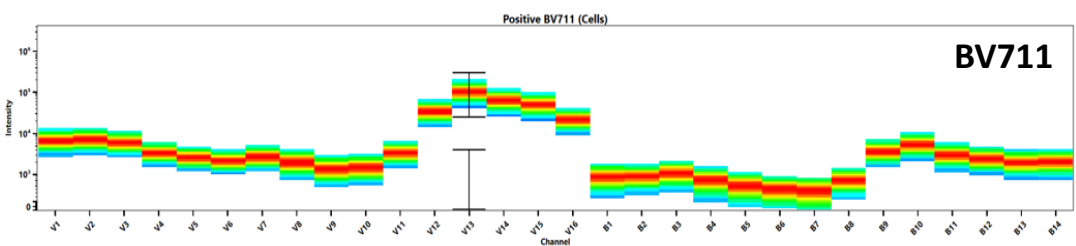
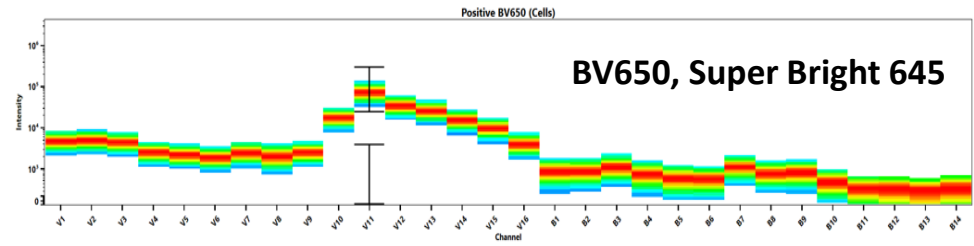
BV510, VioGreen, Live Dead Aqua, Zombie Aqua



Violet Laser Excitable Dyes with Unique Signatures (1 of 2)



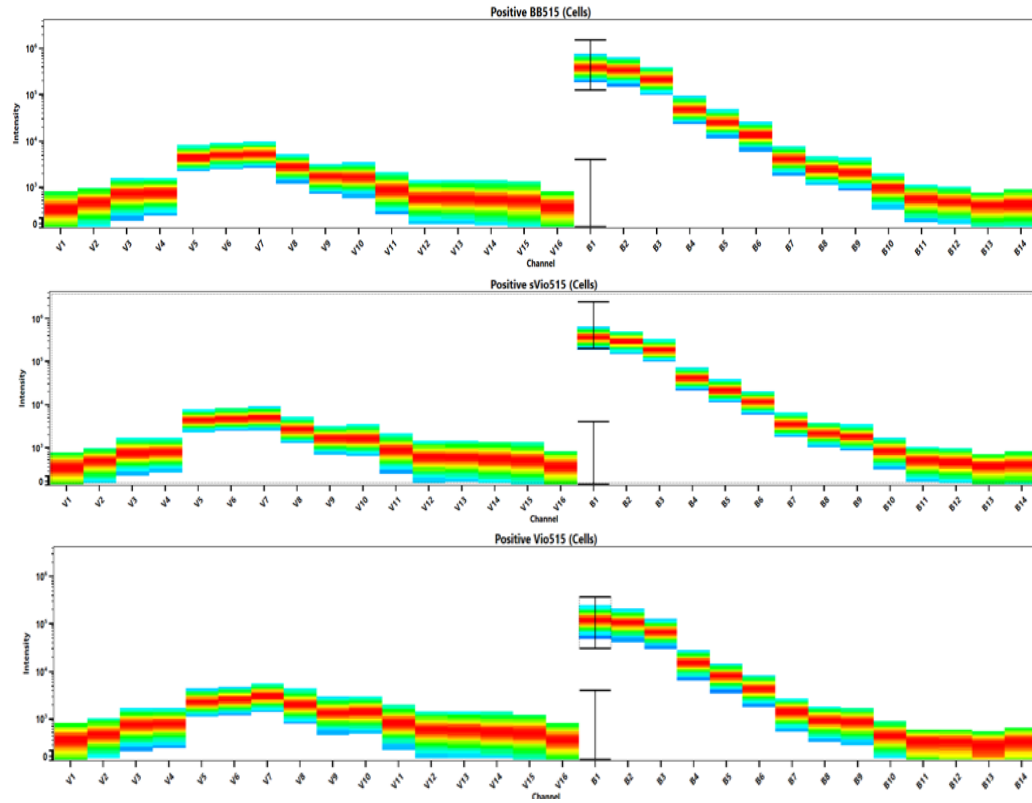
Violet Laser Excitable Dyes with Unique Signatures (2 of 2)



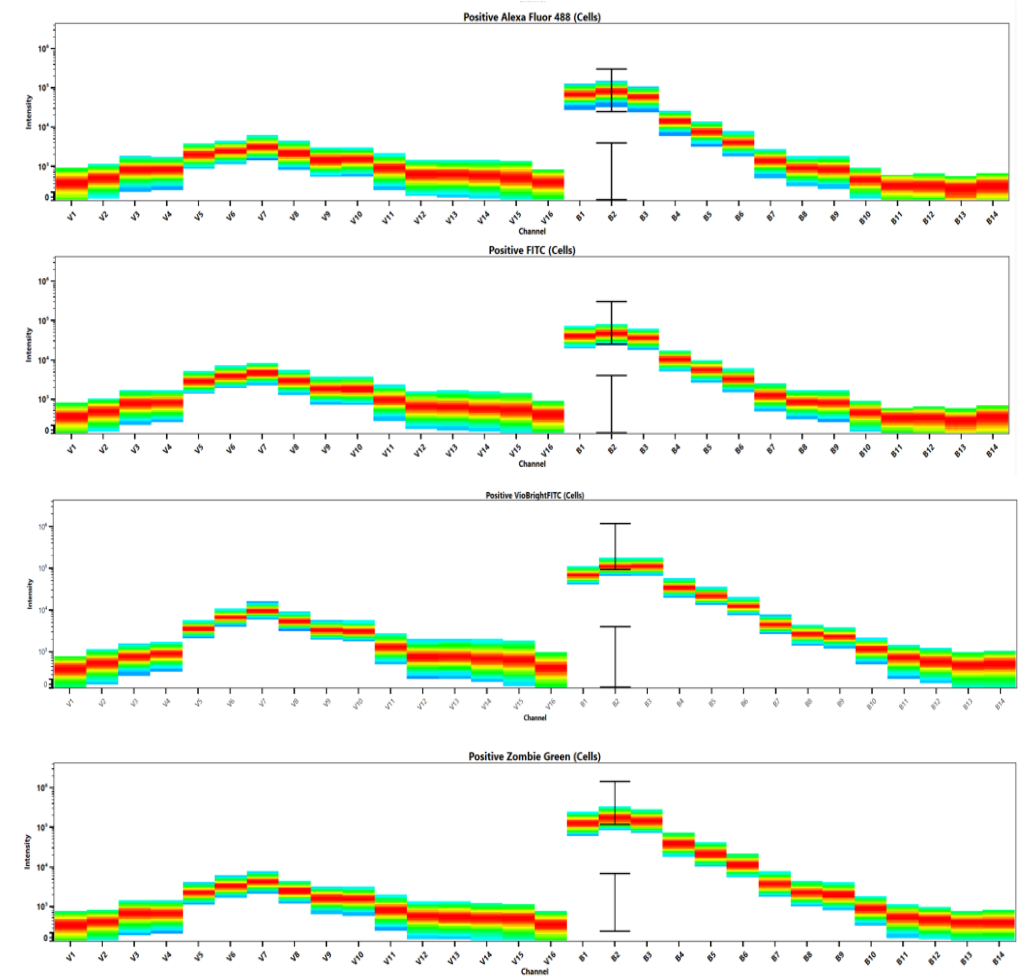
Dyes Primarily Excited by the Blue Laser

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

BB515, sVio515, and Vio515

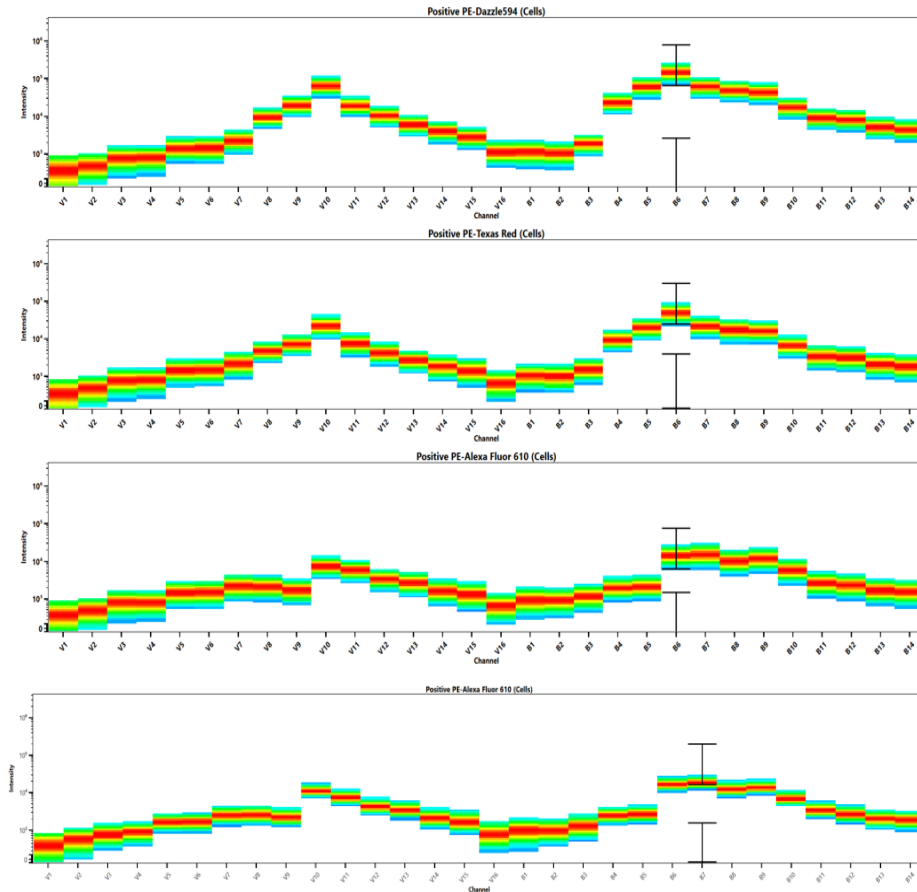


Alexa Fluor 488, FITC, vioBright FITC, and Zombie Green

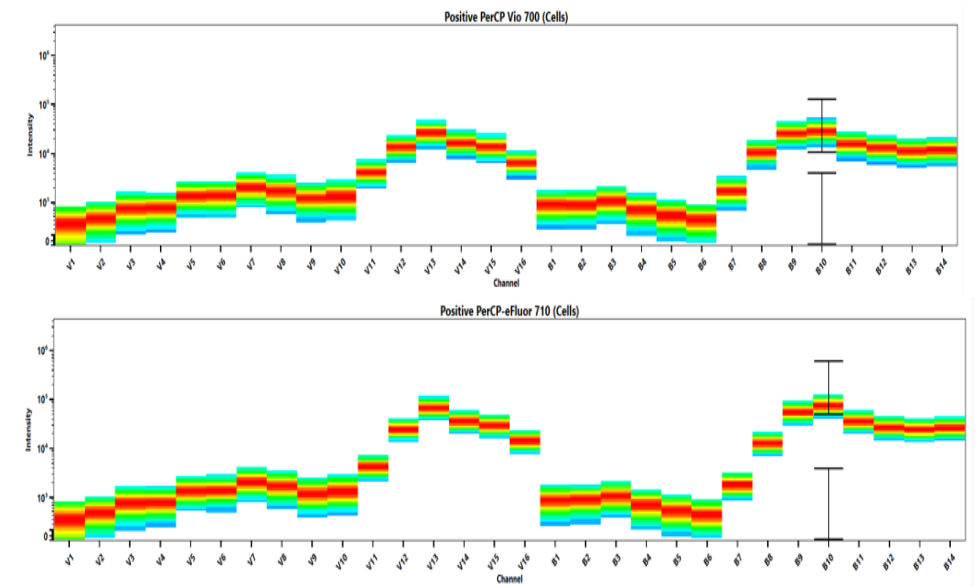


Blue Laser Excitable Dyes with Similar Signatures (2 of 2)

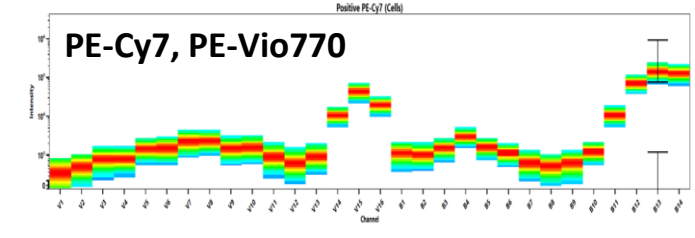
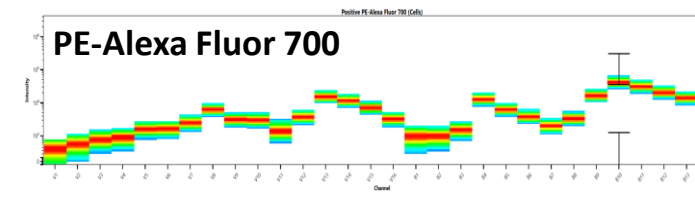
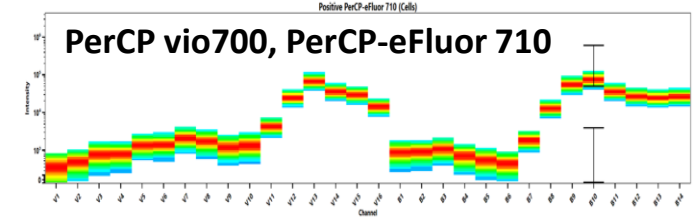
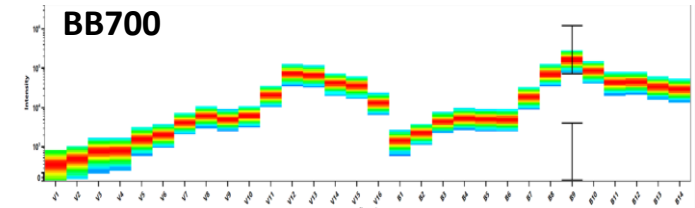
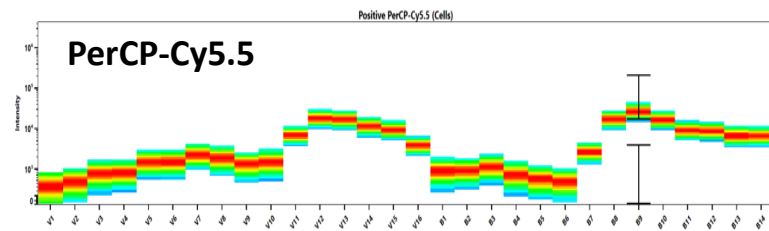
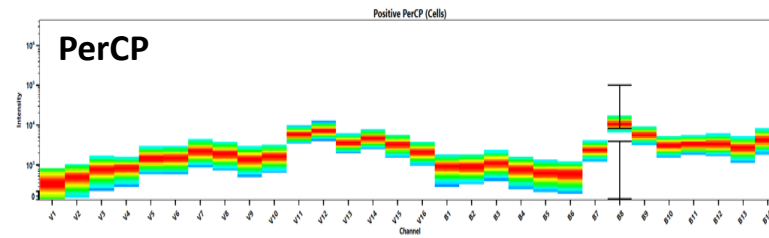
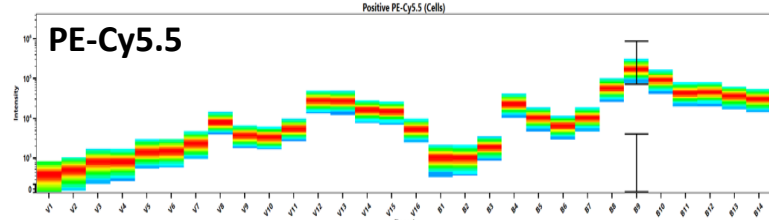
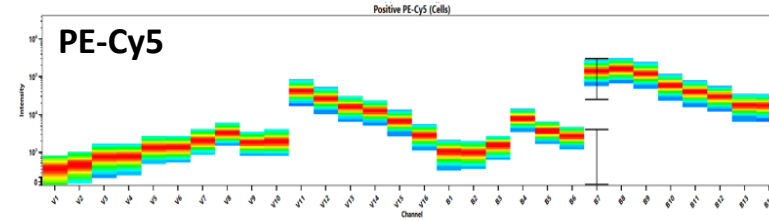
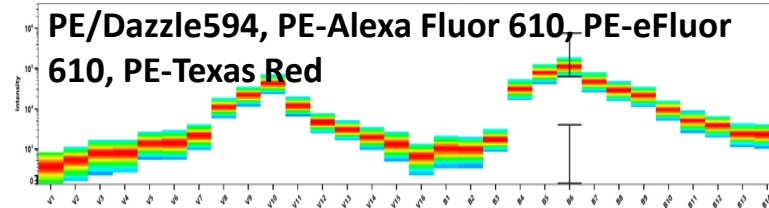
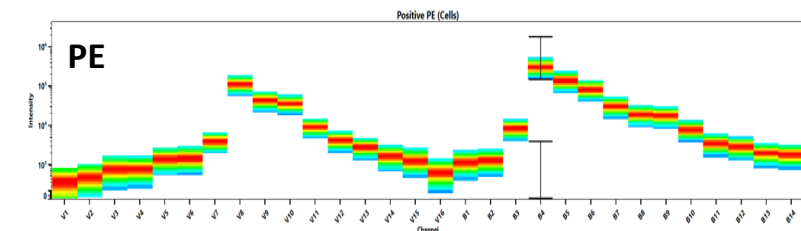
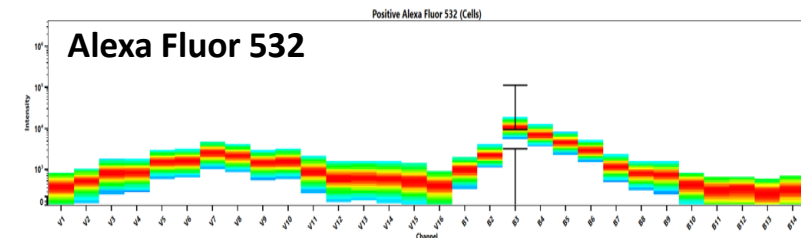
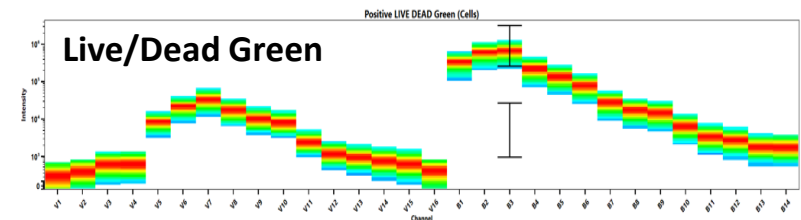
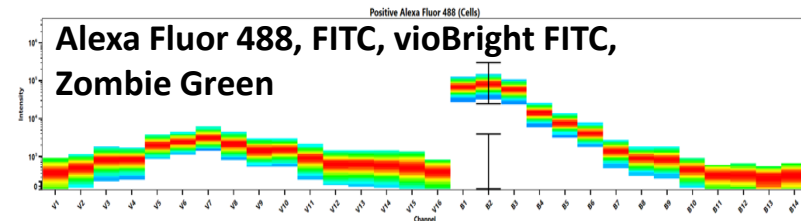
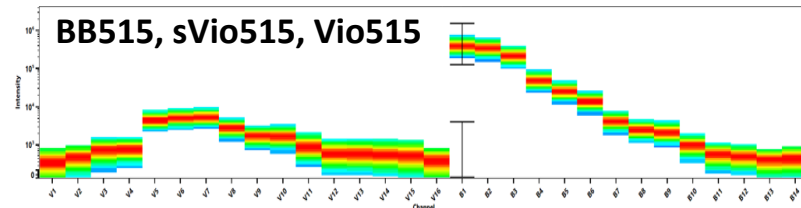
PE/Dazzle594, PE-Texas Red, PE-Alexa 610, and PE-eFluor 610,



PerCP vio700 and PerCP-eFluor 710



Blue Laser Excitable Dyes with Unique Signatures



Peak Channels & Possible Combination of Dyes

Fluorochrome Peak Channels

Violet Excited Fluors	Peak Channel
BV421	V1
Alexa Fluor 405, Super Bright 436, Zombie Violet, Live/Dead Blue	V2
eFluor 450, VioBlue, Pacific Blue, Live/Dead Violet	V3
BV480	V4
eFluor 506	V5
BV510, VioGreen, Zombie Aqua, Live/Dead Aqua	V7
BV570, Pacific Orange, Live/Dead Yellow	V8
BV605, Super Bright 600, Qdot 605, Live/Dead Red, Zombie Yellow	V10
BV650, Super Bright 645, Qdot 655	V11
BV711, Super Bright 702, Qdot 705	V13
BV750	V14
BV785, BV786, Qdot 800	V15

Blue Excited Fluors	Peak Channel
BB515, sVio515, Vio515	B1
Alexa Fluor 488, FITC, VioBright FITC, Zombie Green	B2
Alexa Fluor 532, Live/Dead Green	B3
PE	B4
PE/Dazzle 594, PE-CF594, PE-eFluor 610, PE-Texas Red	B6
PE-Cy5, PerCP	B8
PE-Cy5.5, PerCP-Cy5.5, BB700	B9
PerCP Vio700, PerCP-eFluor 710	B10
PE Vio770, PE-Cy7	B13

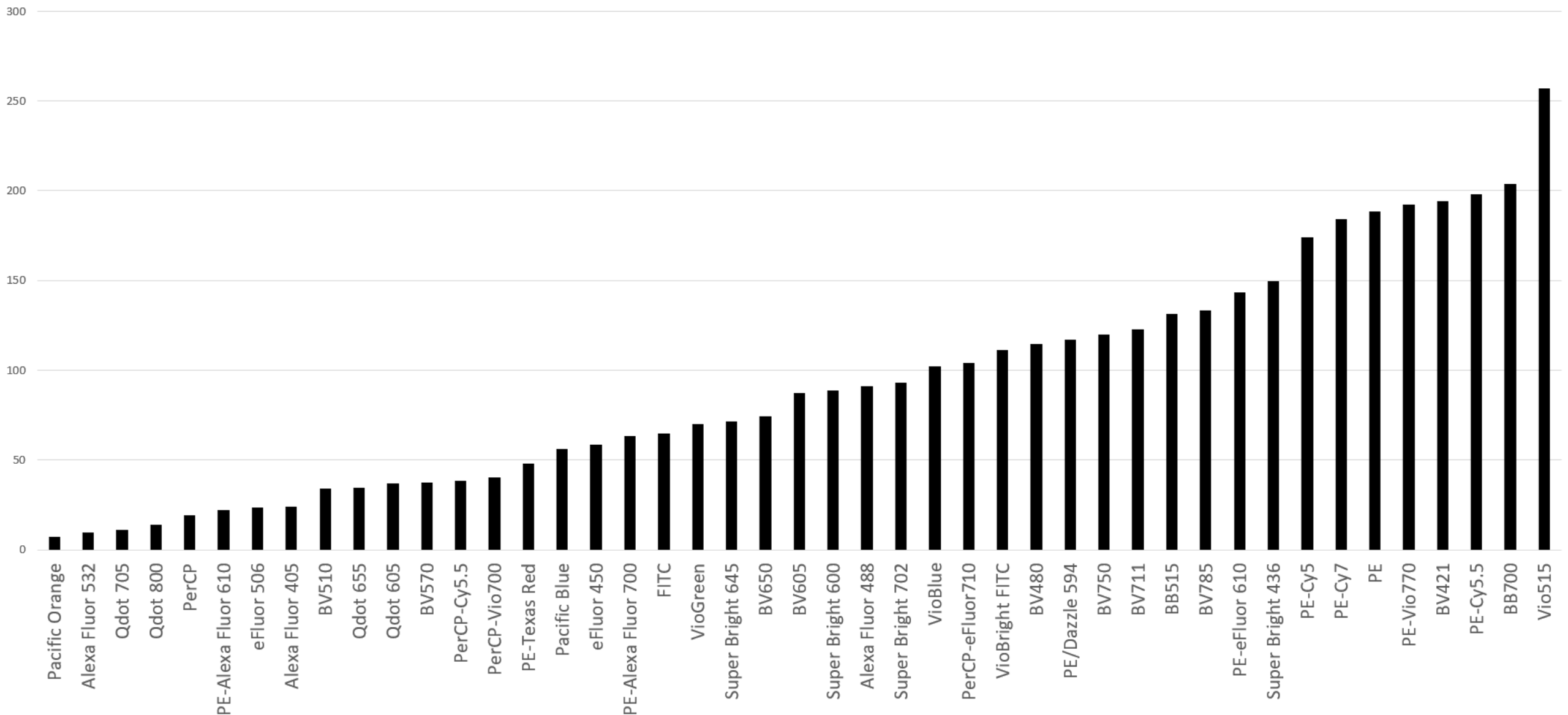
Example of 20 Dyes that Can Be Used in Combination (CAREFUL PANEL DESIGN IS NEEDED)

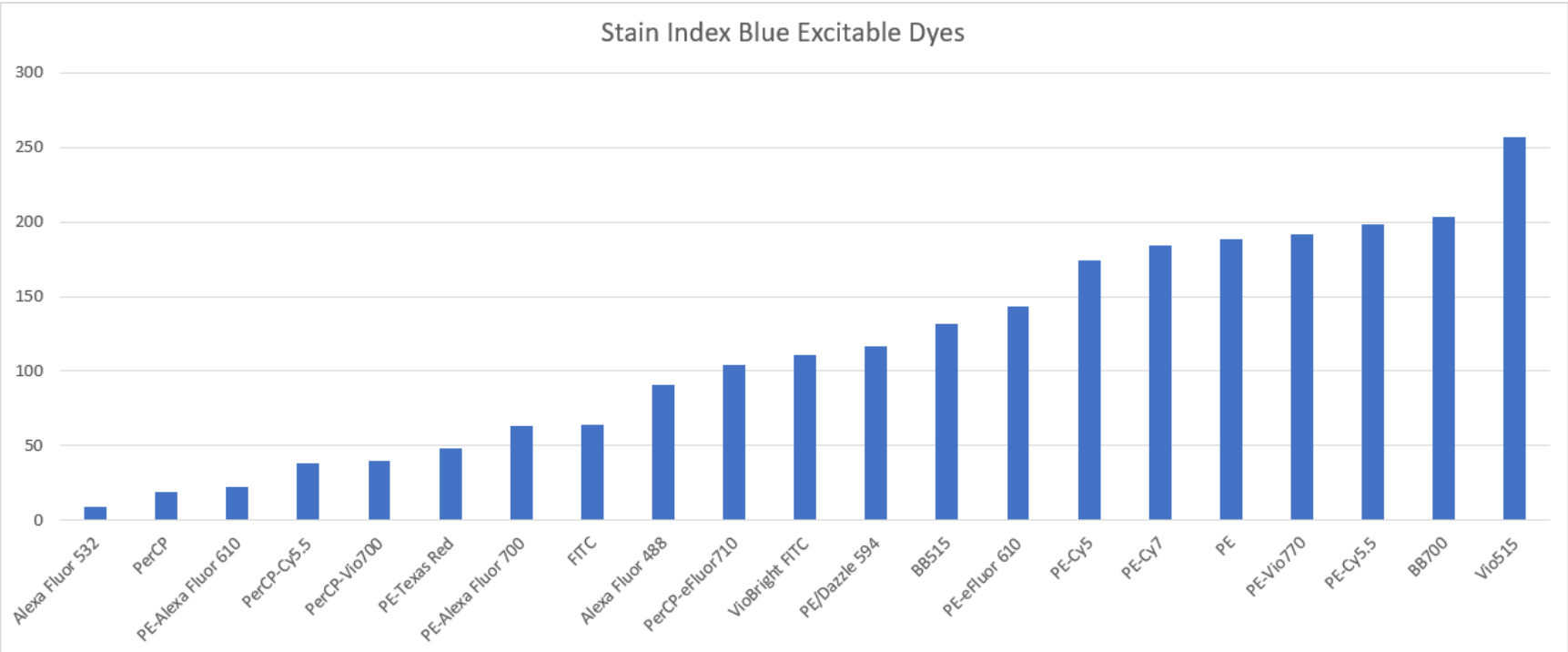
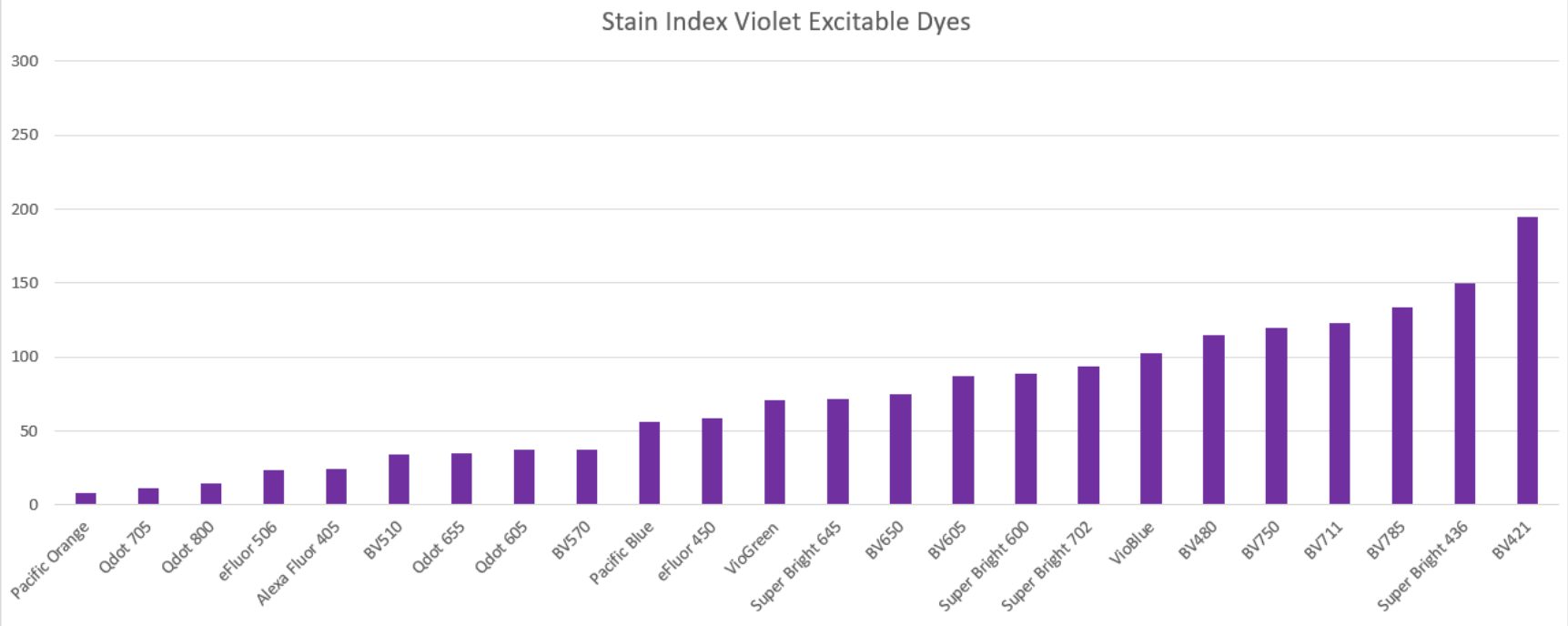
Fluorophore	Fluorophore
BB515	BV421
Alexa Fluor 488 or FITC	Super Bright 436
Alexa Fluor 532	eFluor 450 or equivalent
PE	BV480
PE/Dazzle 594 or equivalent	BV510
PE-Cy5	BV570
PerCP-Cy5.5	BV605
PerCP-eFluor710	BV650
PE-Cy7	BV711
	BV750
	BV785

Stain Indexes

Data generated using CD4 staining in human PBMCs

Stain Index Ranking - 45 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 8 Fluors that can be Used in Combination

	BV421	BV510	BV605	BV785	Alexa Fluor 488	PE	PerCP-Cy5.5	PE-Cy7
BV421								
BV510								
BV605								
BV785								
Alexa Fluor 488								
PE								
PerCP-Cy5.5								
PE-Cy7								

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-Cy7 into BV785). Areas in bright pink and red are where more attention to panel design is needed.

Spread Matrix for 20 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
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																				

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 are 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