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TRANSCEND THE CONVENTIONAL

Cytek Aurora™ Fluorochrome Selection Guidelines for 4 Laser Systems (V-B-YG-R)

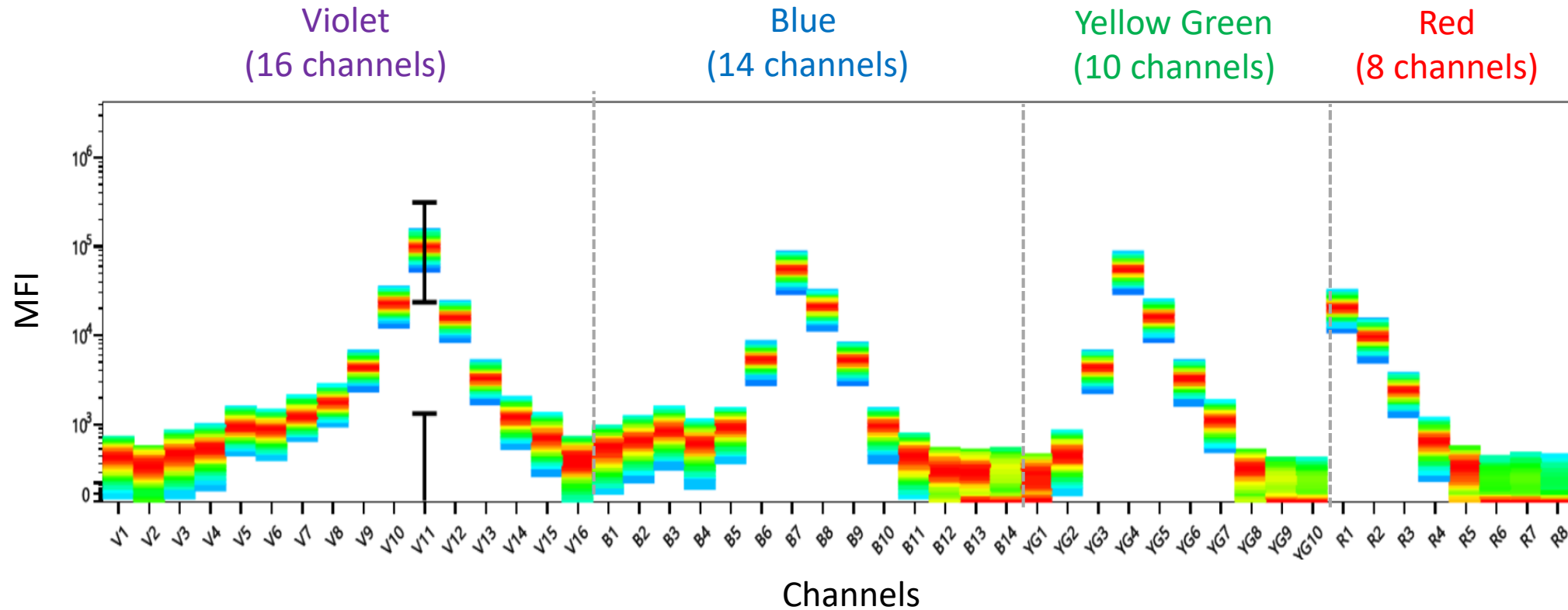
Last Updated: March 2019

Fluorochrome Signatures

Dyes can be used in combination as long as they have a unique spectrum signature.

When designing a multicolor panel, you should look for dyes with unique spectra and also consider spread introduced by the dyes (see slide 24).

How to Read Full Spectrum Fluorochrome Signatures

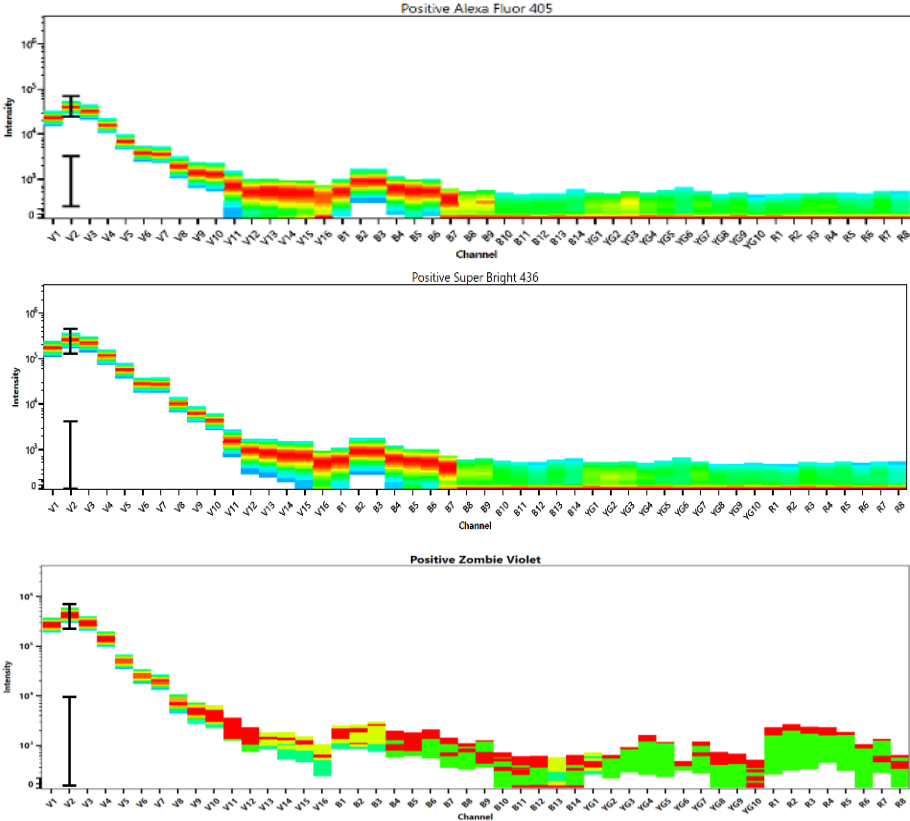


This dye is excited by all 4 lasers. The peak channel (indicated by the black bar) is in channel V11, and it has secondary emission in channels B7, YG4 and R1. Based on this information, expect this dye to introduce spread into dyes emitting at similar wavelengths.

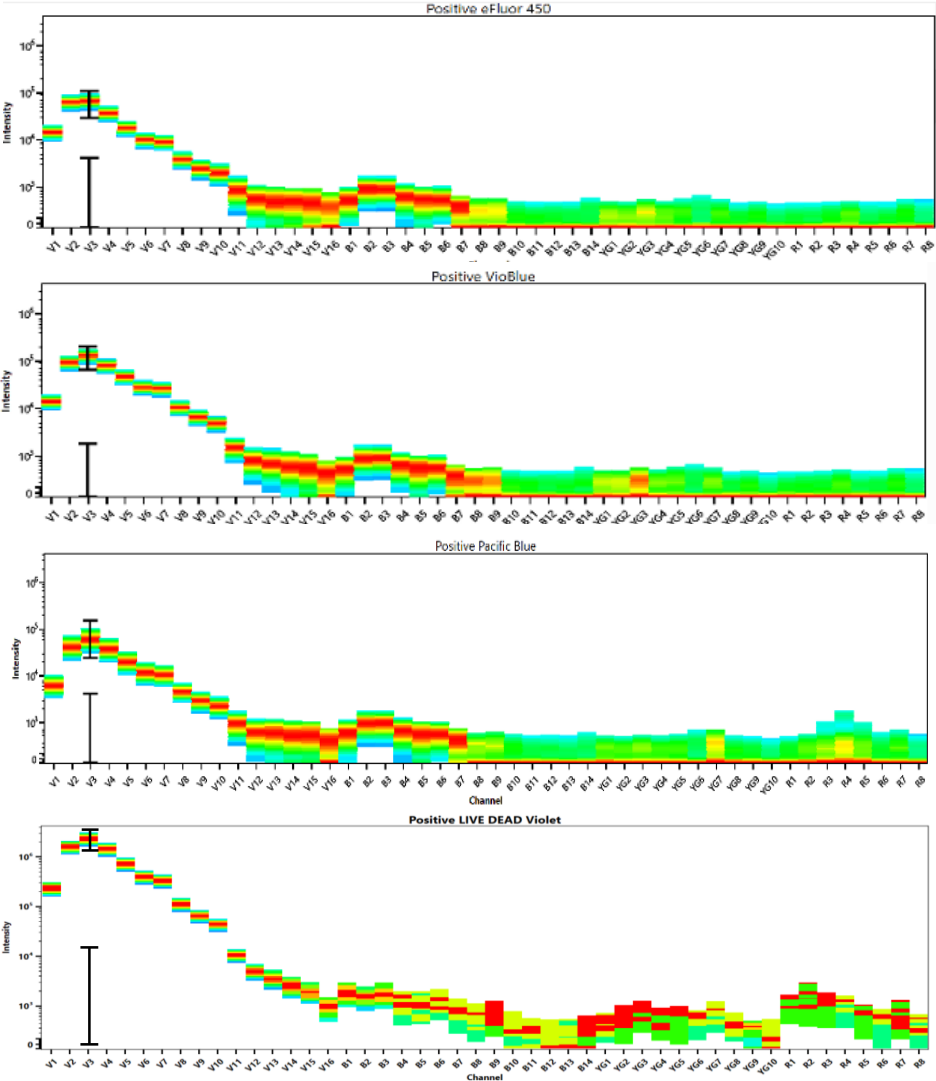
Dyes Primarily Excited by the Violet Laser

Violet Laser Excitable Dyes with Similar Signatures

Alexa Fluor 405, Super Bright 436 and Zombie Violet

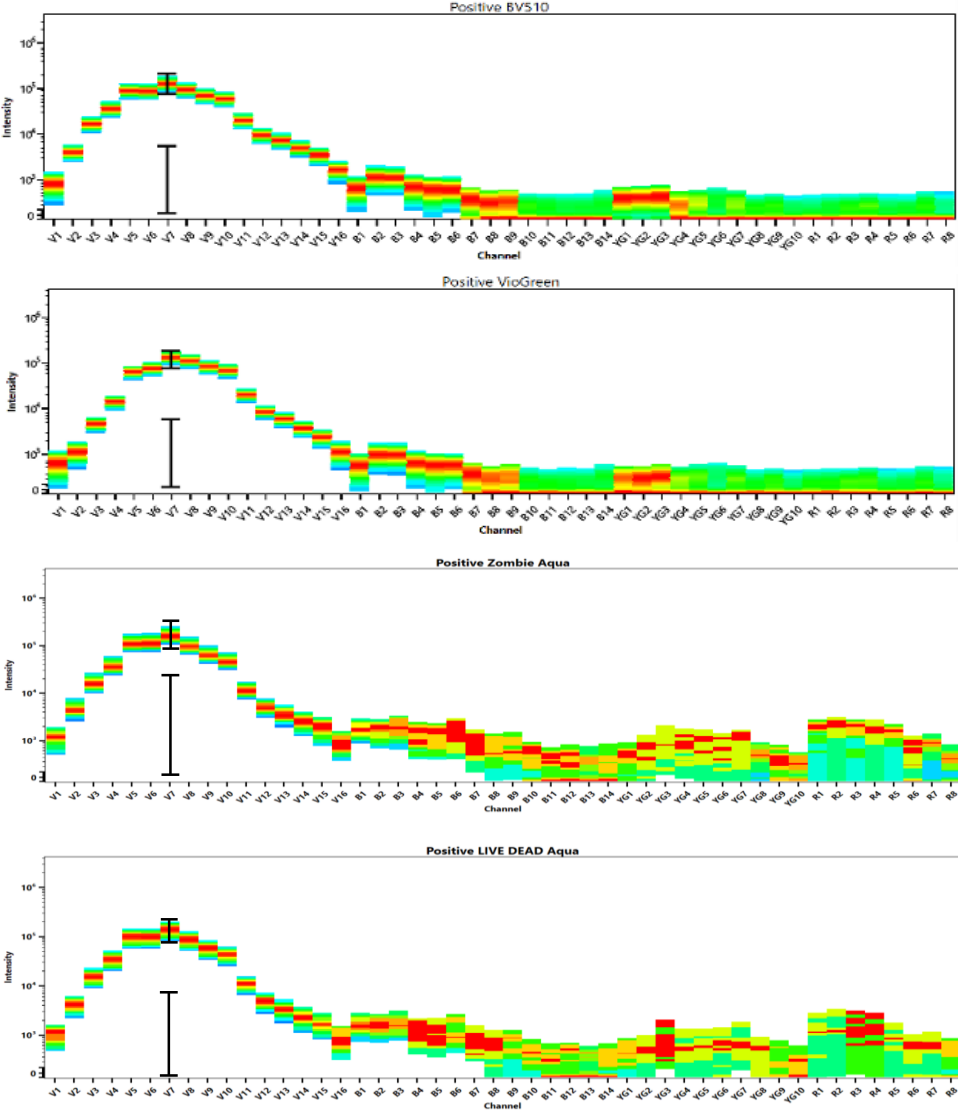


eFluor 450, VioBlue, Pacific Blue and Live/Dead Violet

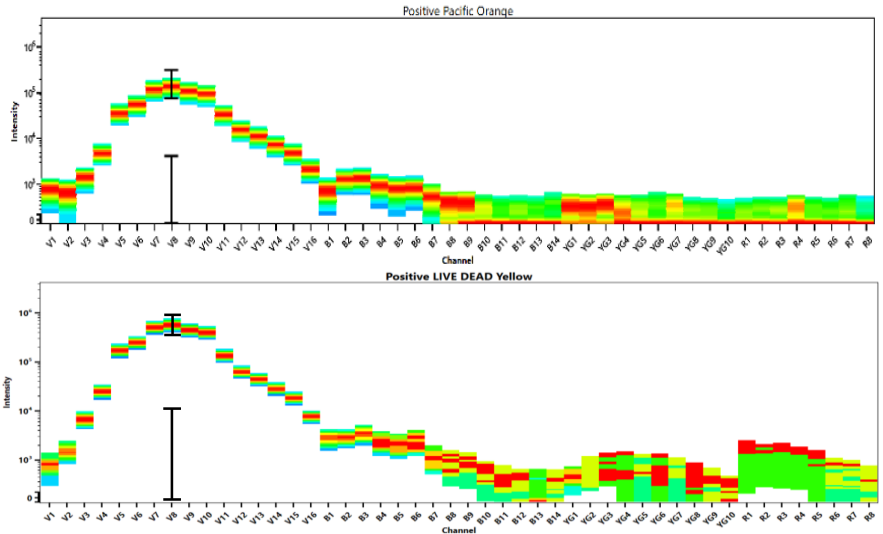


Violet Laser Excitable Dyes with Similar Signatures

BV510, VioGreen, Zombie Aqua and Live/Dead Aqua

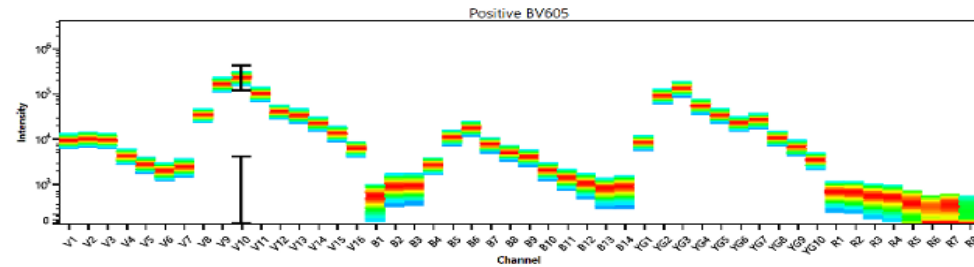
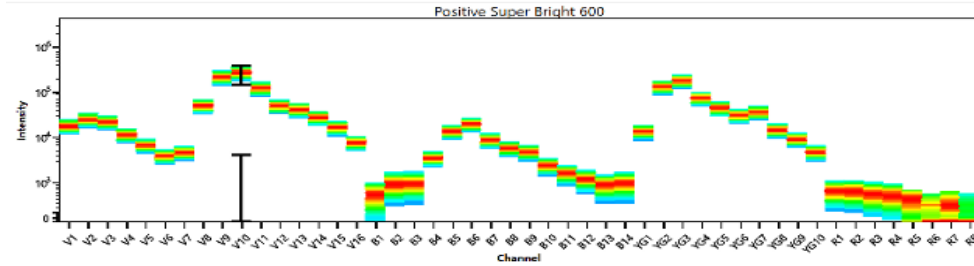


Pacific Orange and Live/Dead Yellow

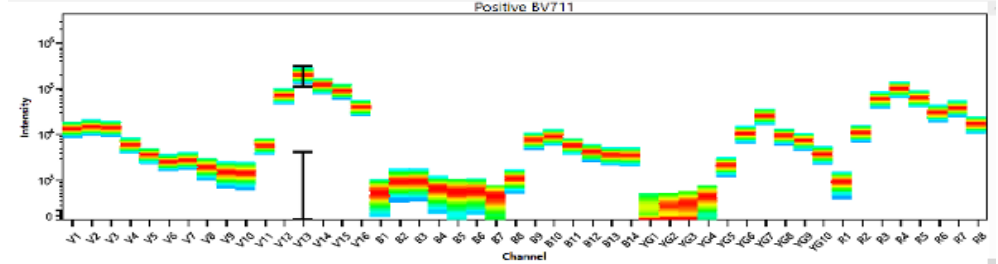
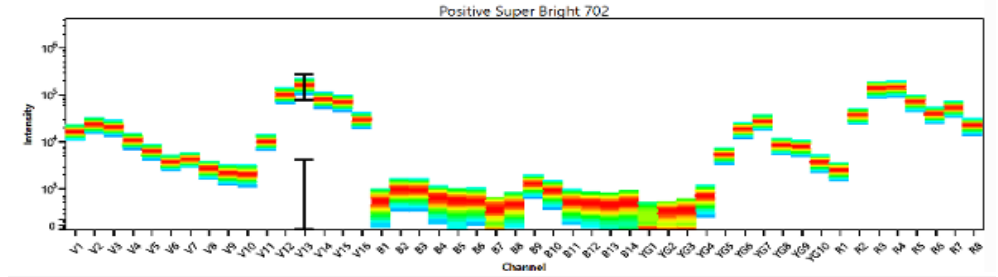


Violet Laser Excitable Dyes with Similar Signatures

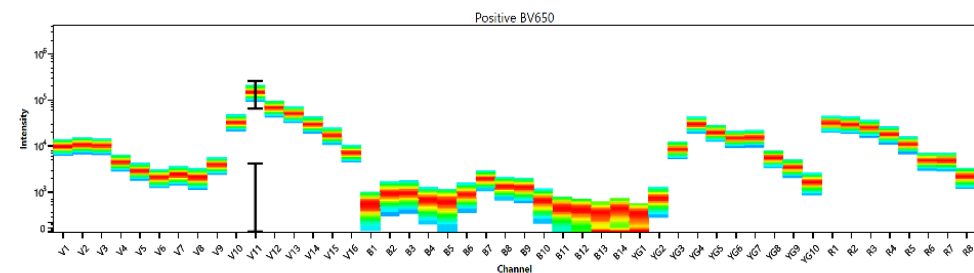
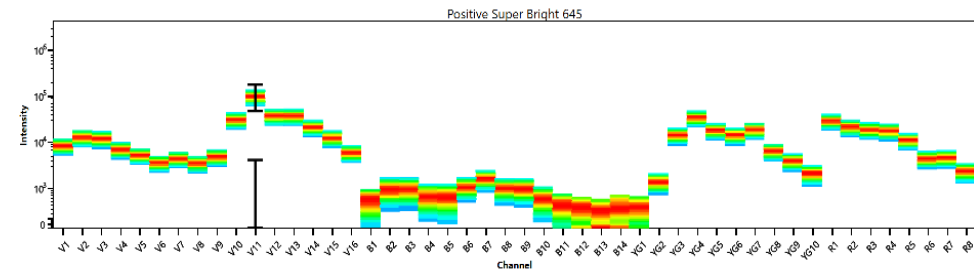
Super Bright 600 and BV605



Super Bright 702 and BV711



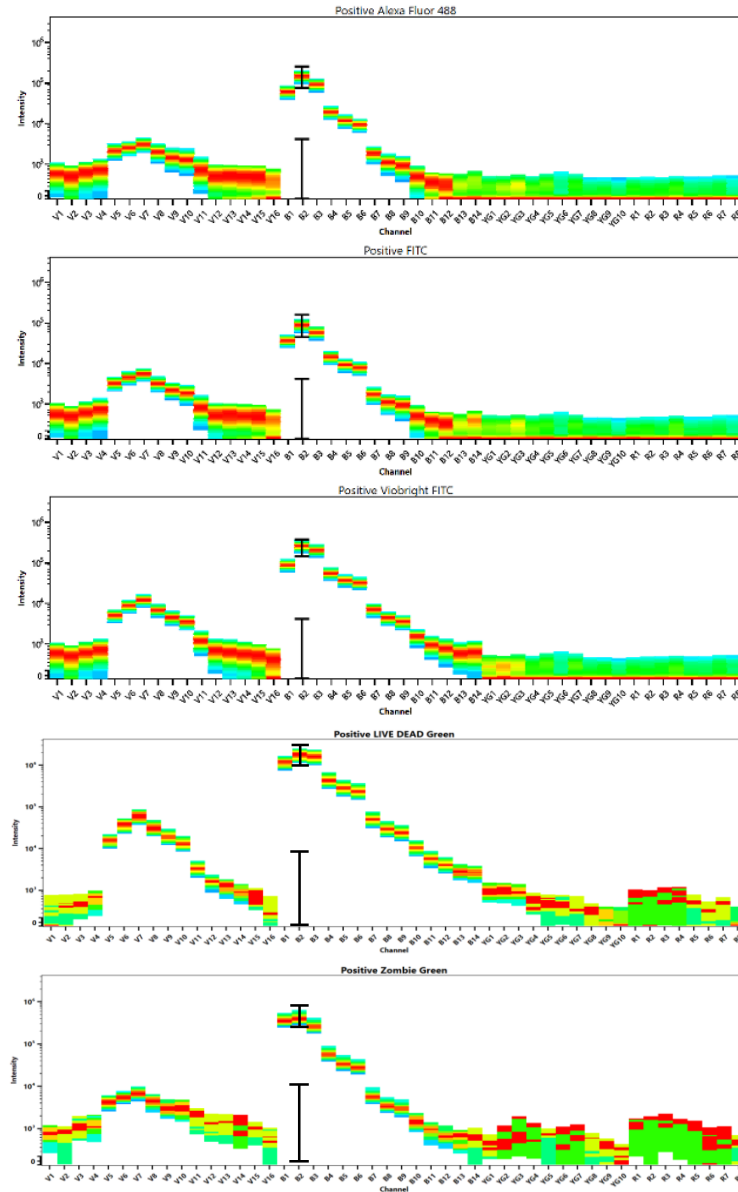
Super Bright 645 and BV650



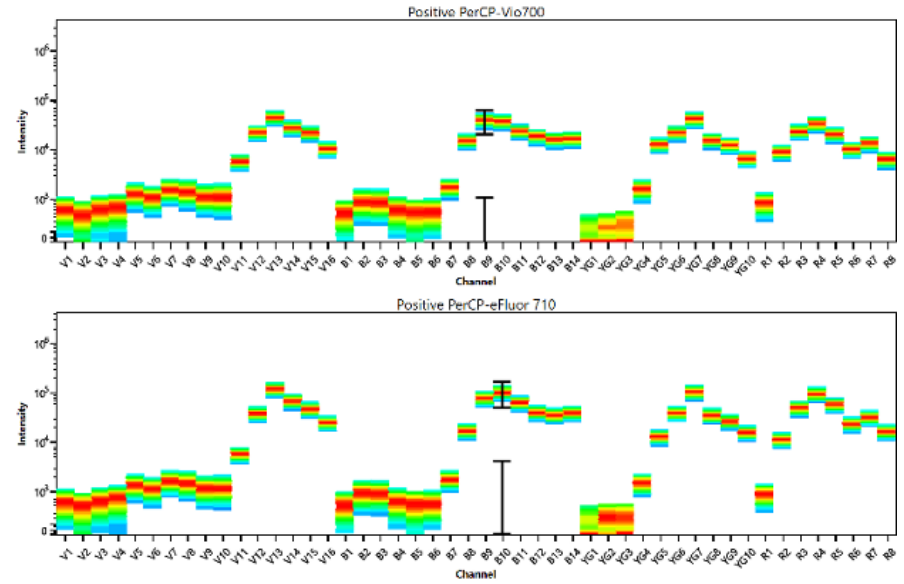
Dyes Primarily Excited by the Blue Laser

Blue Laser Excitable Dyes with Similar Signatures

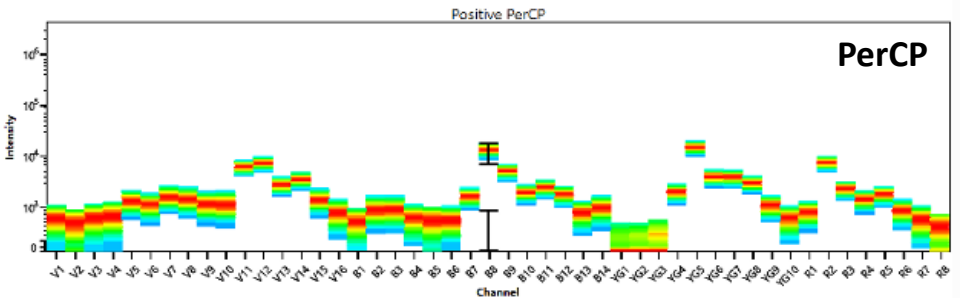
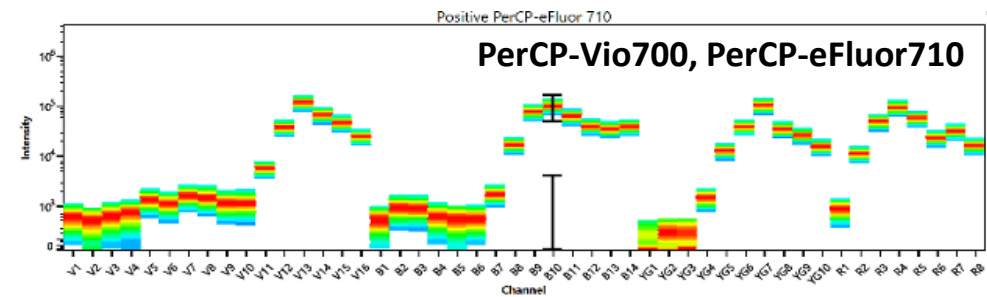
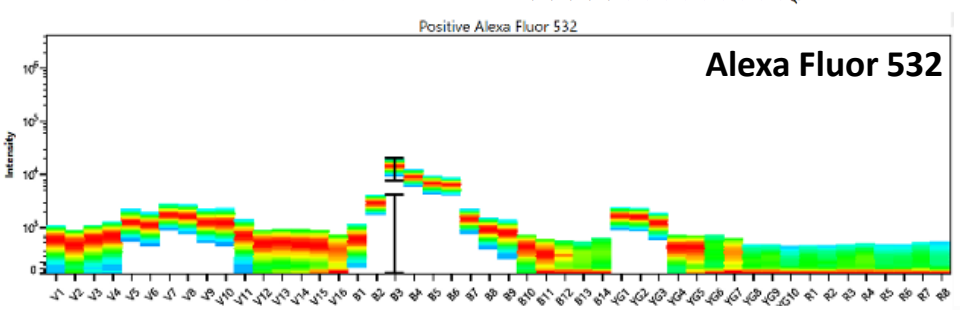
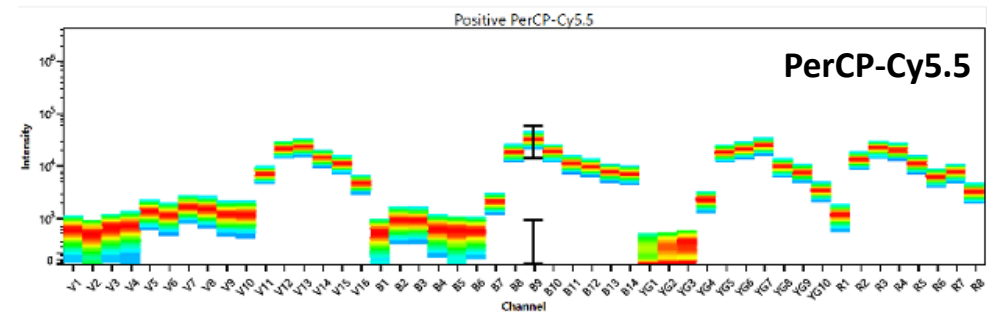
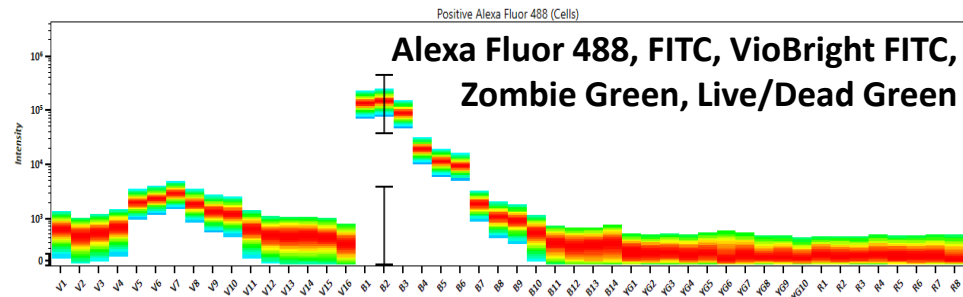
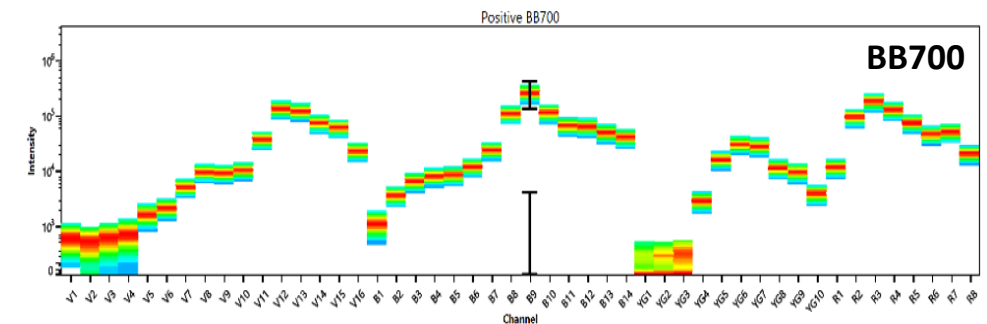
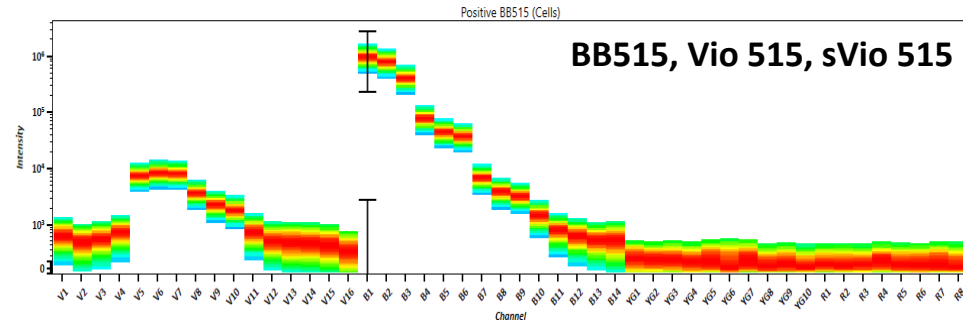
Alexa Fluor 488, FITC, VioBright FITC, Zombie Green and Live Dead Green



PerCP-Vio 710 and PerCP-eFluor 710



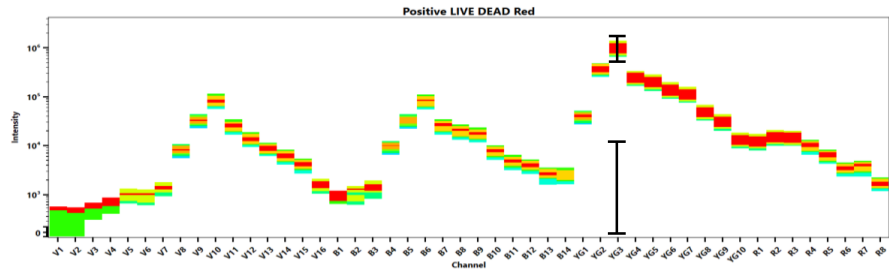
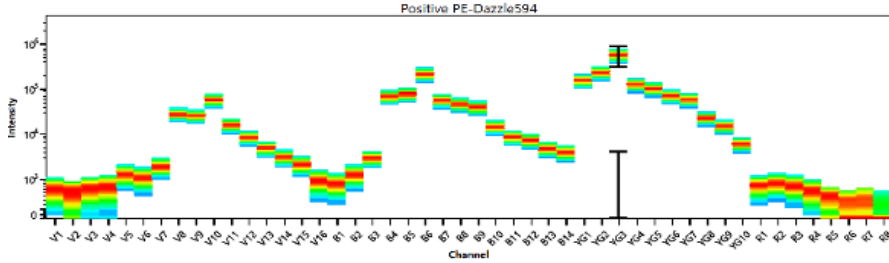
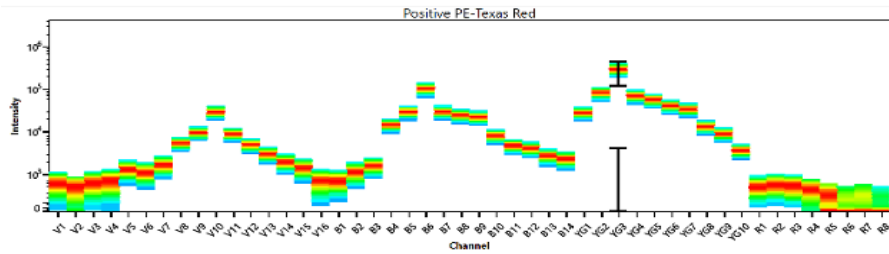
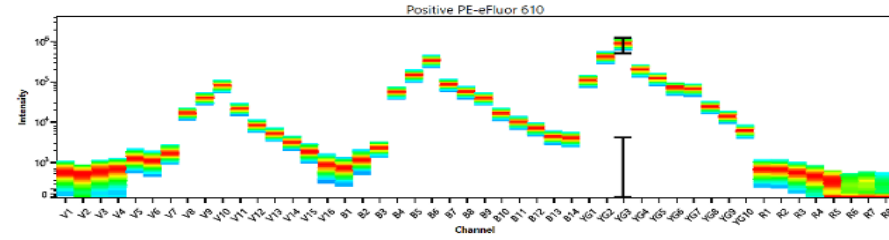
Blue Laser Excitable Dyes with Unique Signatures



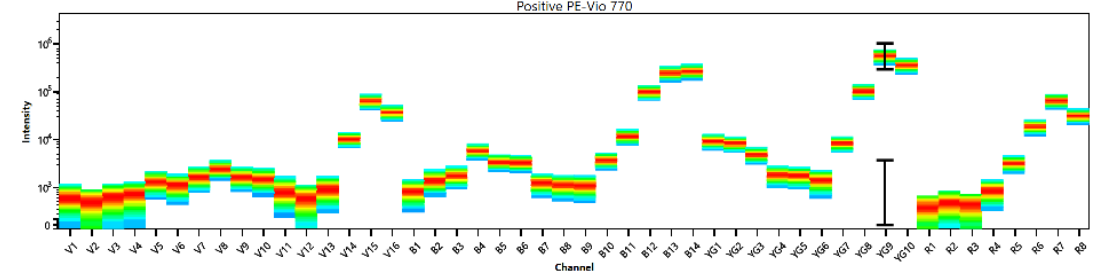
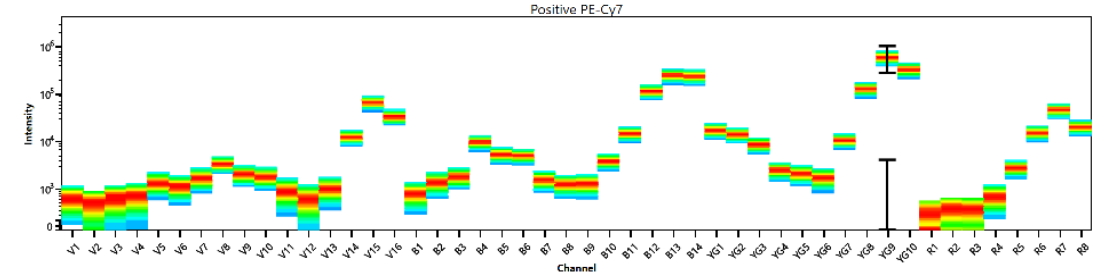
Dyes Primarily Excited by the Yellow Green Laser

Yellow Green Laser Excitable Dyes with Similar Signatures

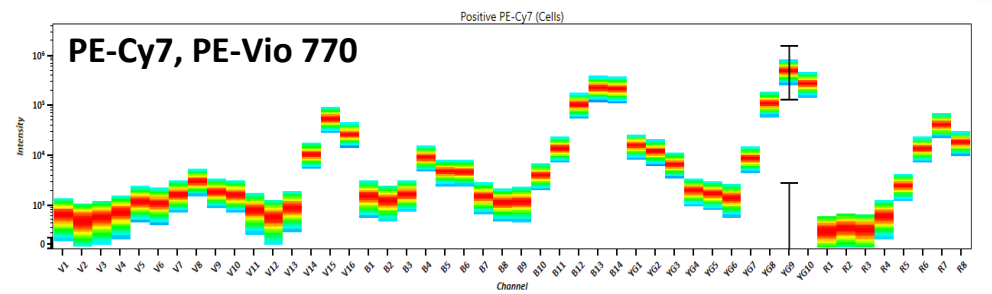
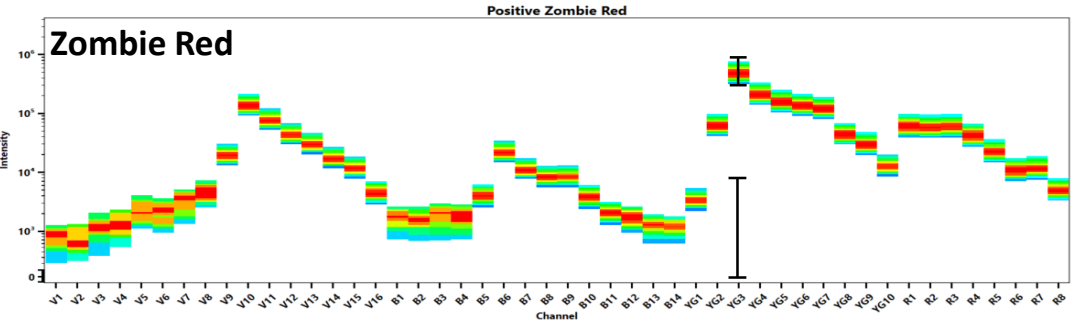
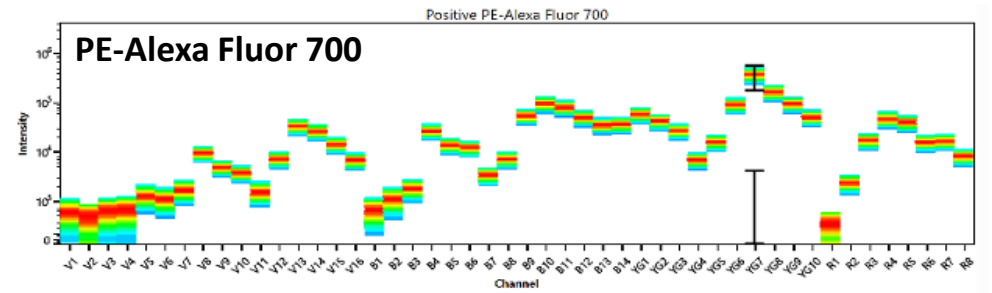
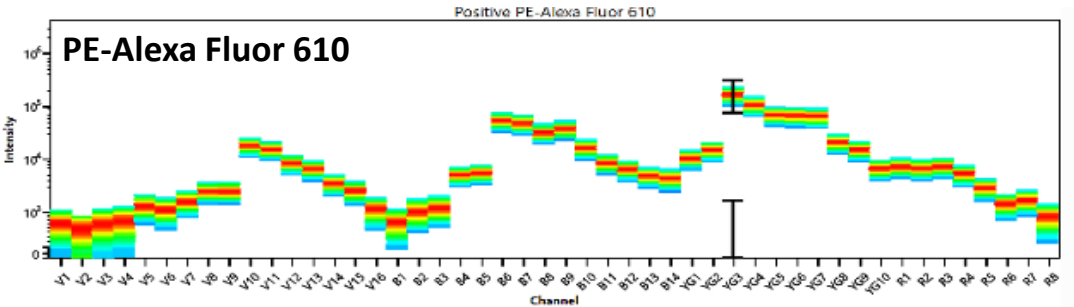
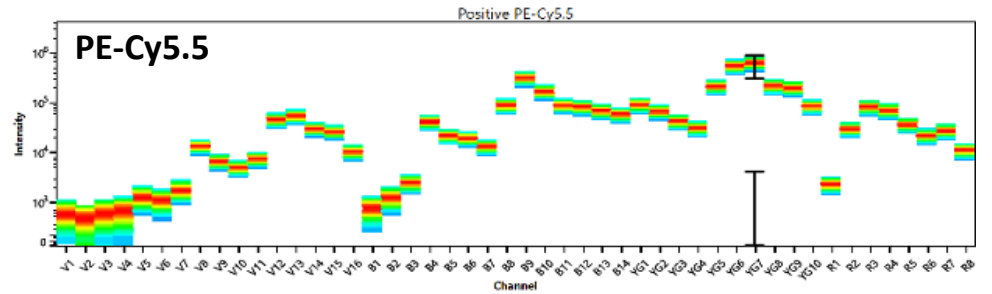
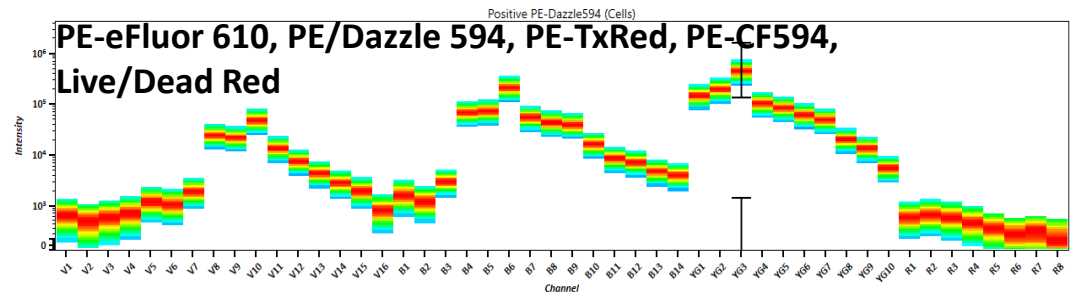
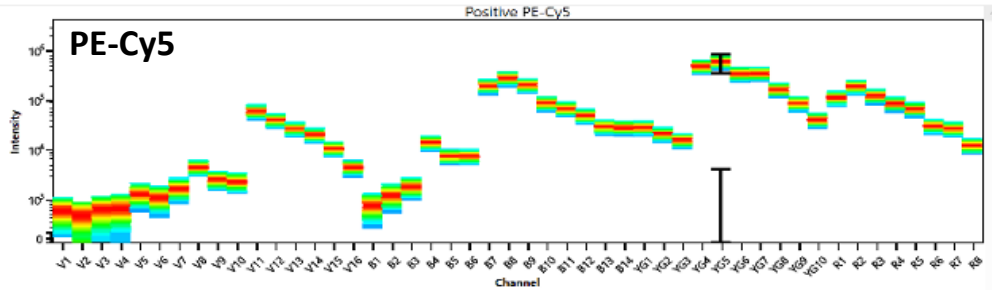
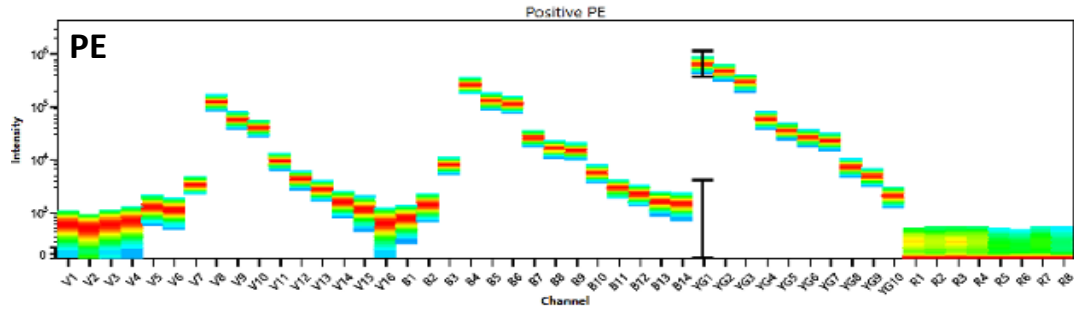
PE-eFluor 610, PE/Dazzle 594, PE-Texas Red and Live Dead Red



PE-Cy7 and PE-Vio 770



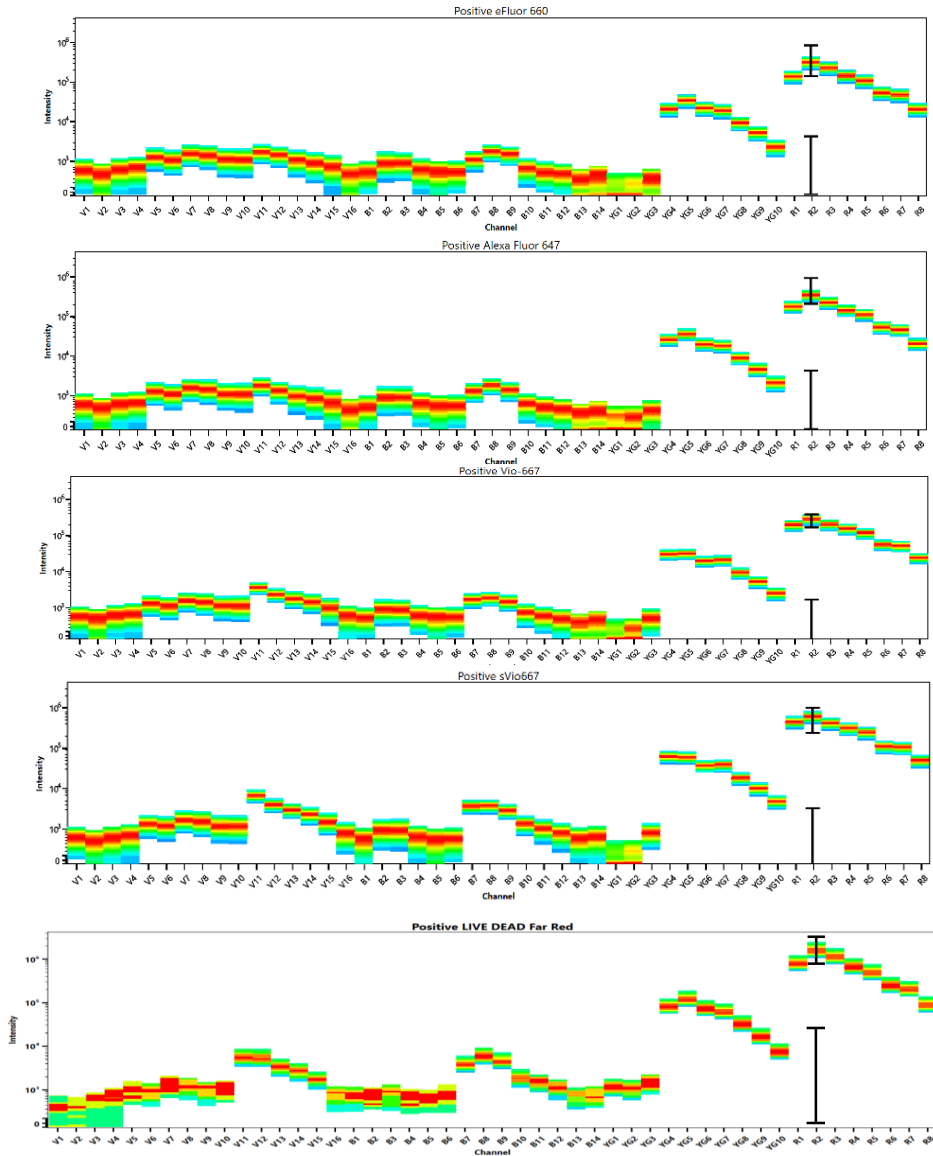
Yellow Green Laser Excitable Dyes with Unique Signatures



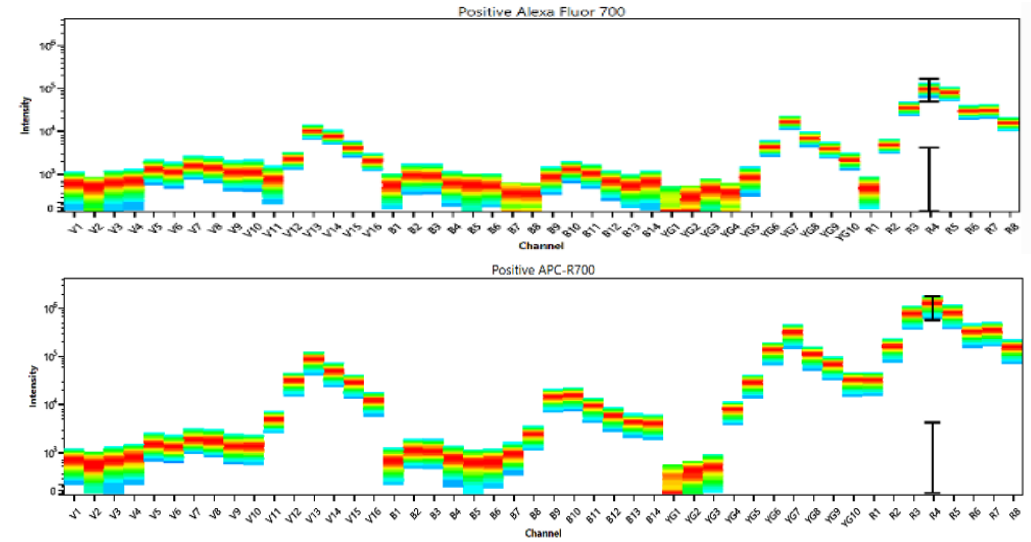
Dyes Primarily Excited by the
Red Laser

Red Laser Excitable Dyes with Similar Signatures

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

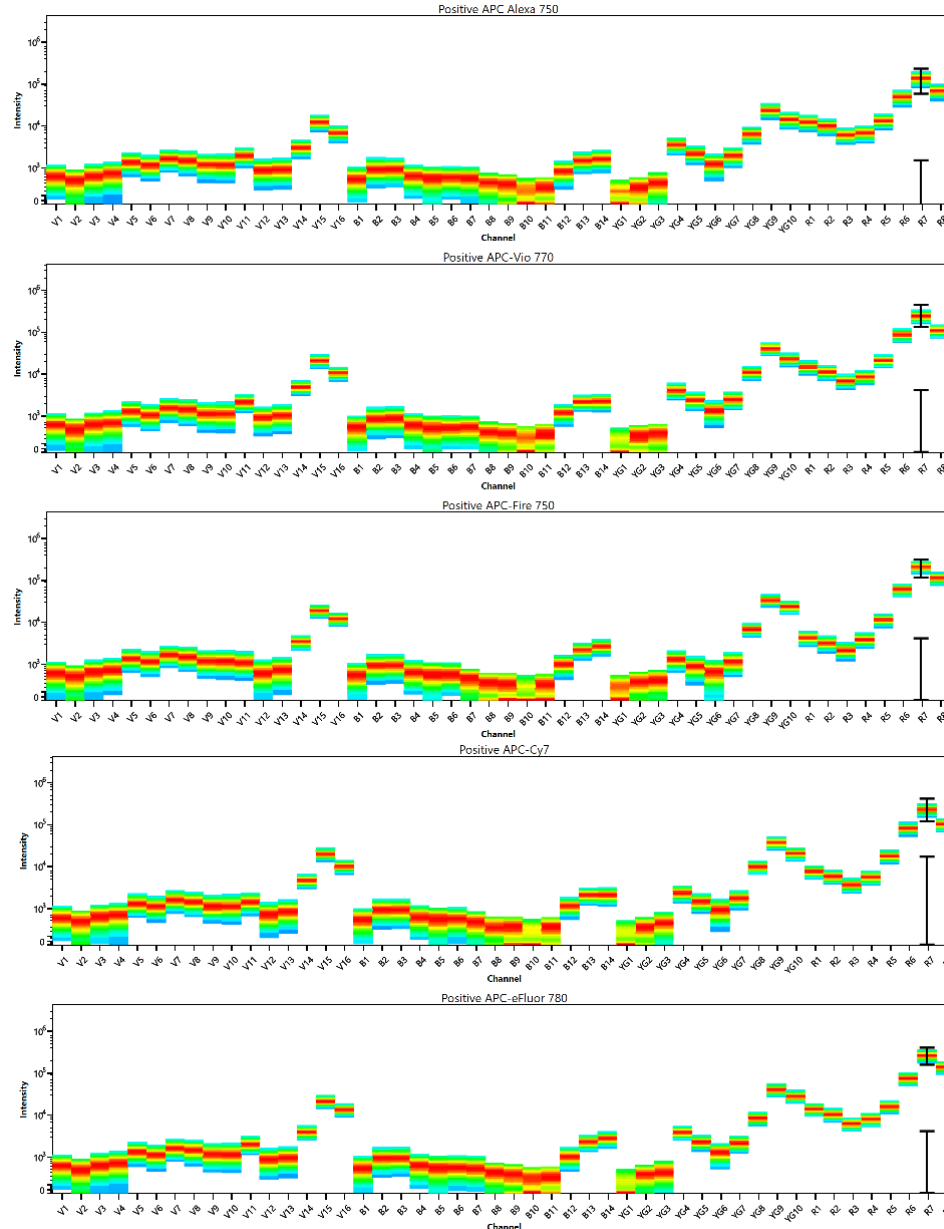


Alexa Fluor 700 and APC-R700

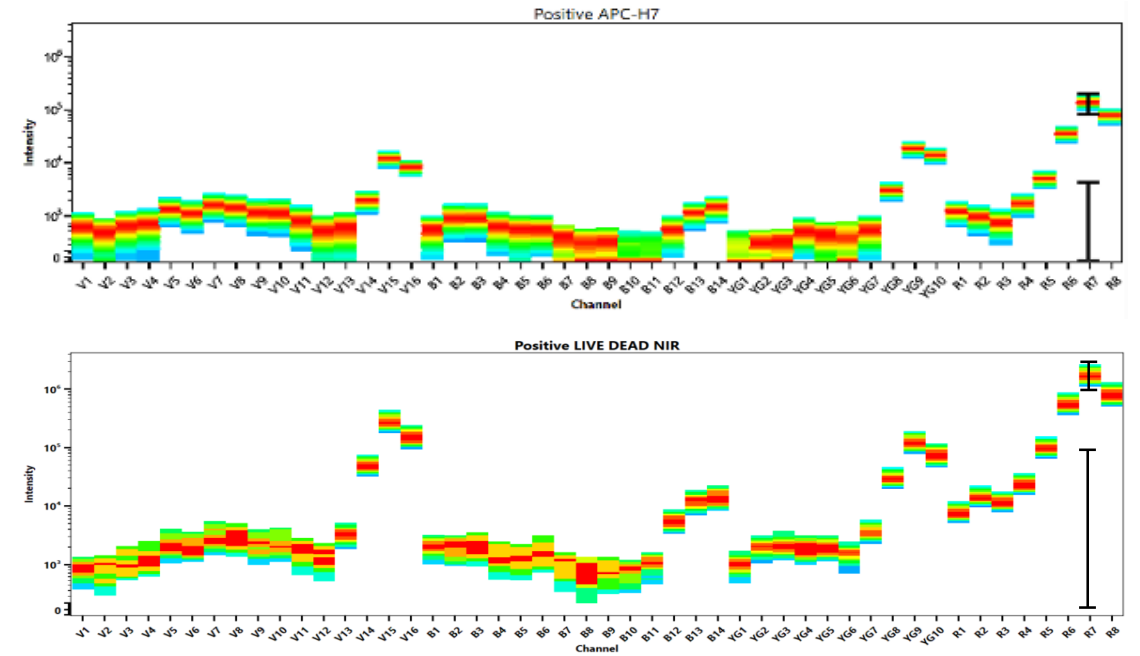


Red Laser Excitable Dyes with Similar Signatures

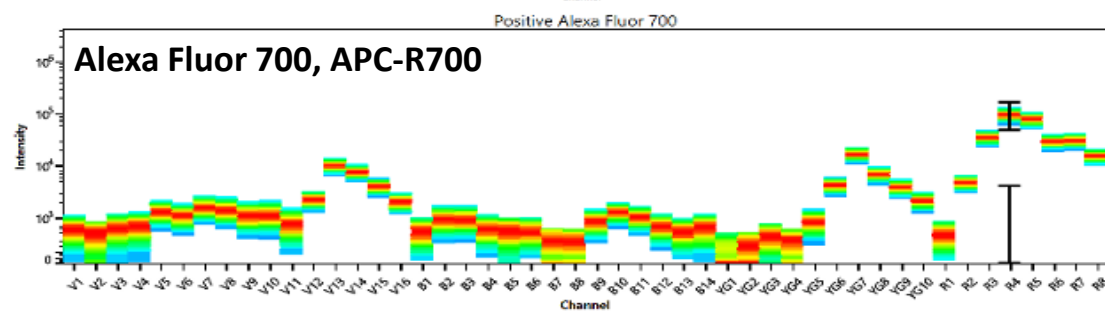
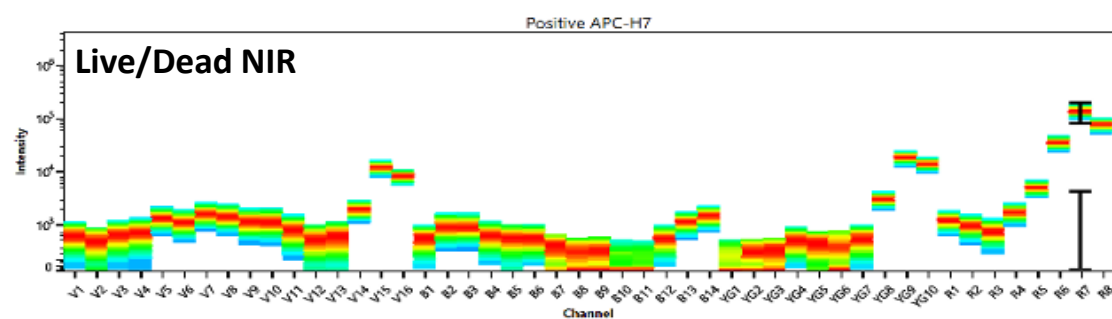
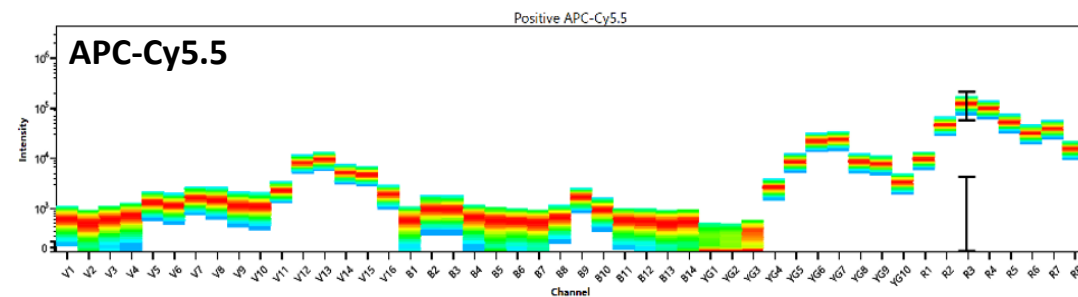
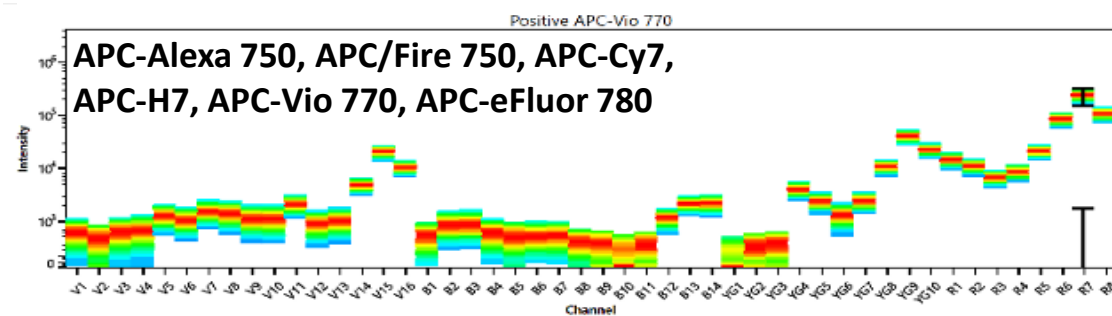
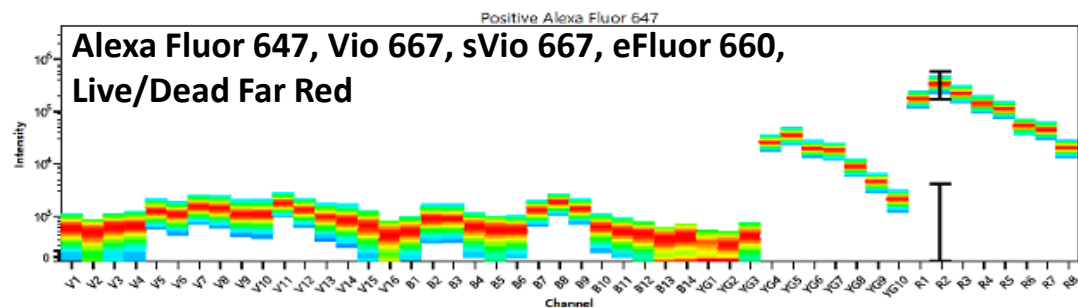
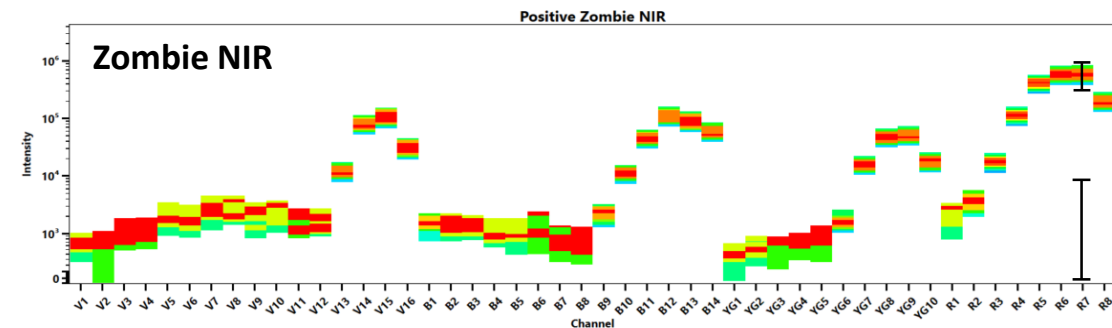
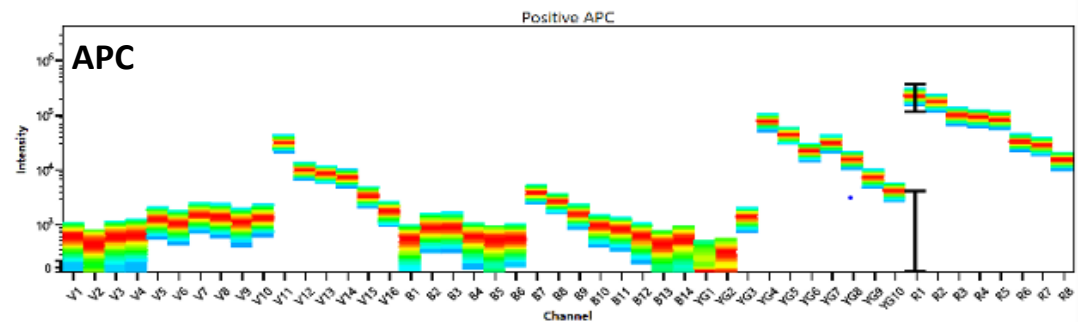
APC-Alexa 750, APC-Vio 770, APC/Fire 750, APC-Cy7 and APC-eFluor 780



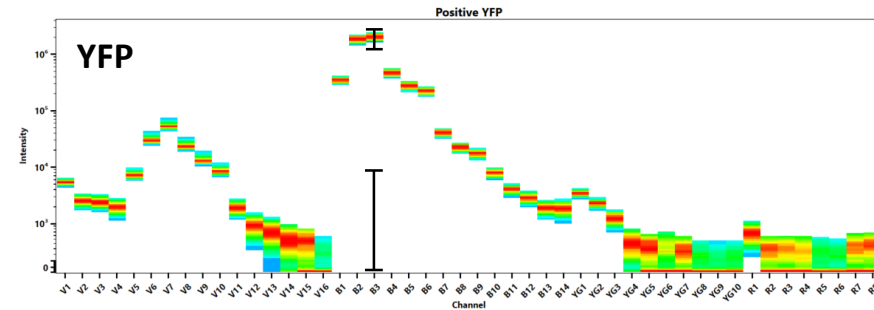
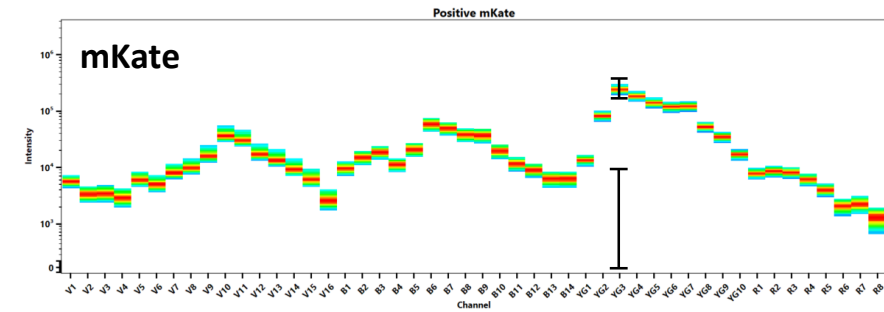
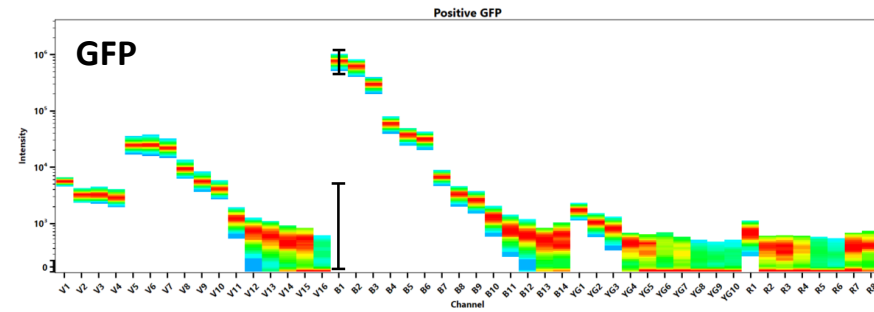
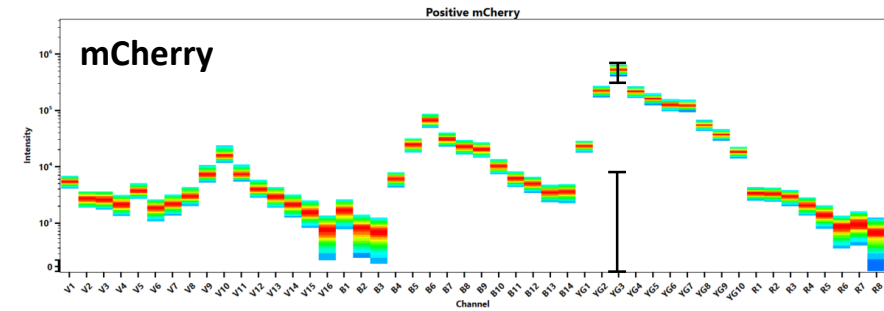
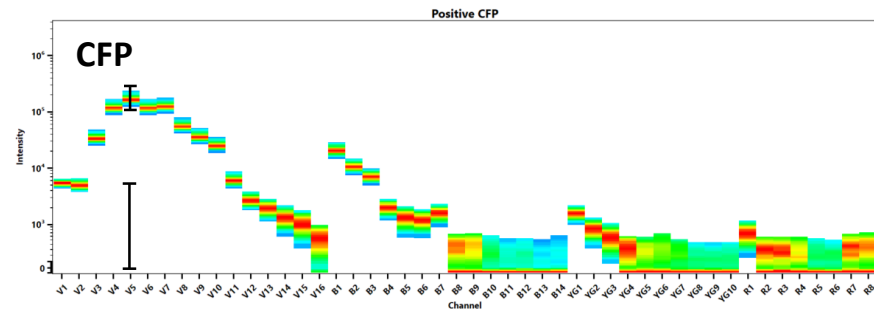
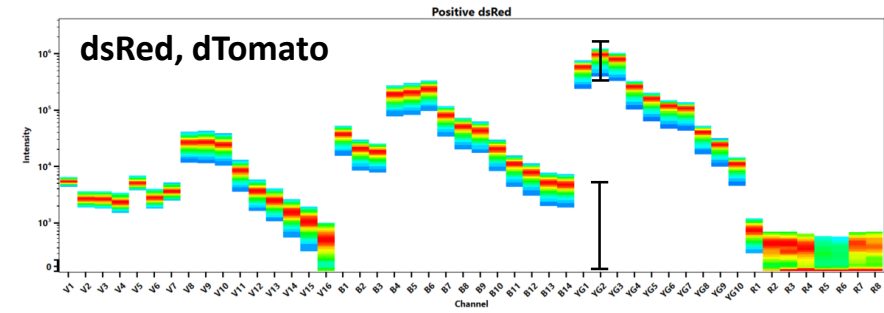
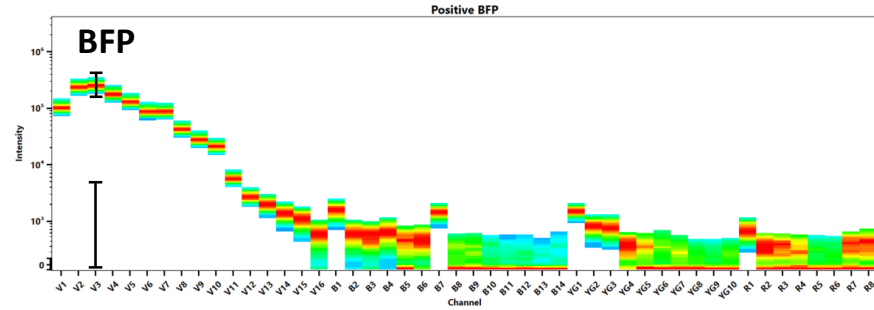
APC-H7 and Live/Dead NIR



Red Laser Excitable Dyes with Unique Signatures



Fluorescent Proteins with Unique Signatures



Fluorochrome Peak Channels

Violet Excited Fluors	Peak Channel
BV421	V1
Alexa 405, SuperBright 436	V2
eFluor450 , VioBlue, Pacific Blue	V3
BV480	V4
eFluor 506	V5
BV510, VioGreen	V7
BV570, Pacific Orange	V8
BV605, SuperBright 600, Qdot 605	V10
BV650, SuperBright 645, Qdot 655	V11
BV711, Super Bright 702, Qdot705	V13
BV750	V14
BV785, BV786, Qdot 800	V15
Blue Excited Fluors	
Vio 515, sVio 515, BB515	B1
Alexa Fluor 488, FITC, VioBright FITC	B2
Alexa Fluor 532	B3
PerCP	B8
PerCP-Cy5.5, BB700	B9
PerCP-eFluor 710, PerCP-Vio 700	B10
Yellow Green Excited Fluors	
PE	YG1
PE-Dazzle 594, PE-CF 594, PE-TexasRed, PE-eFluor 610, PE-Alexa Fluor 610	YG3
PE-Cy5	YG5
PE-Cy5.5, PE-AlexaFluor 700	YG7
PE-Cy7, PE-Vio 770	YG9
Red Excited Fluors	
APC	R1
Alexa647, Vio 667, sVio 667, eFluor660	R2
Alexa 700, APC-R700	R4
APC-Alexa750, APC/Fire 750, APC-Cy7, APC-Vio 770, APC-eFluor780, APC-H7	R7

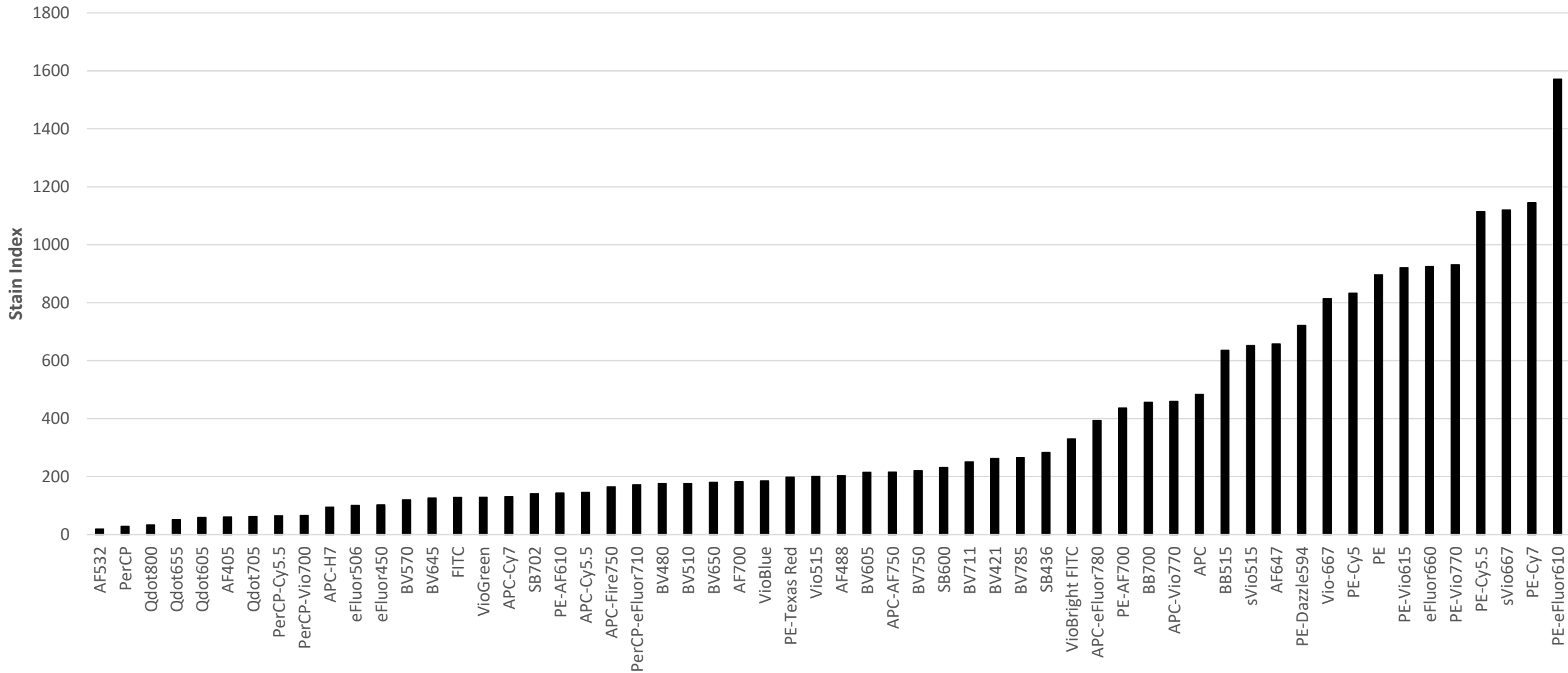
Example of 24 Dyes that Can Be Used in Combination (CAREFUL PANEL DESIGN IS NEEDED)

Violet Excited Fluors	Blue Excited Fluors	Yellow Green Excited Fluors	Red Excited Fluors
BV421	BB515	PE	APC
SuperBright 436	Alexa Fluor 488	PE/Dazzle594	Alexa647
efluor450	Alexa Fluor 532	PE-Cy5	APC-R700
BV480	PerCP-Cy5.5	PE-Cy7	APC/Fire750
BV510	PerCP-eFluor 710		
BV570			
BV605			
BV650			
BV711			
BV750			
BV785			

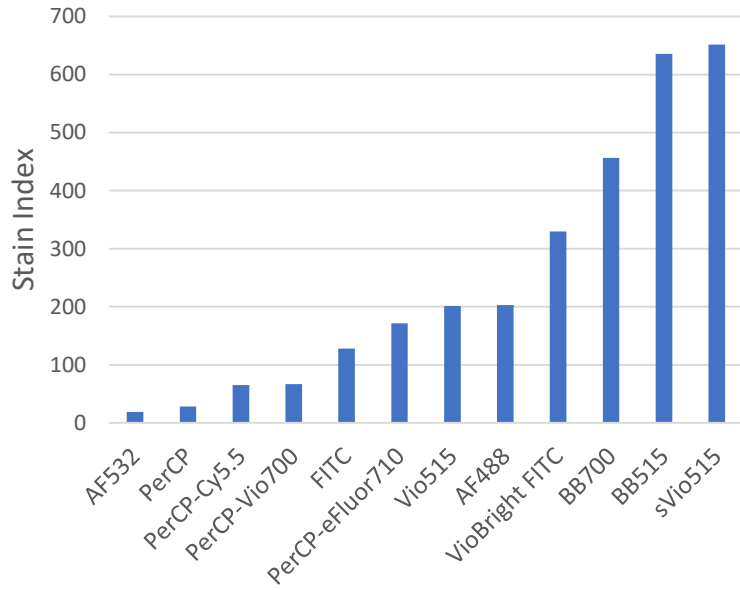
Stain Indexes

Data generated using CD4 staining in human whole blood

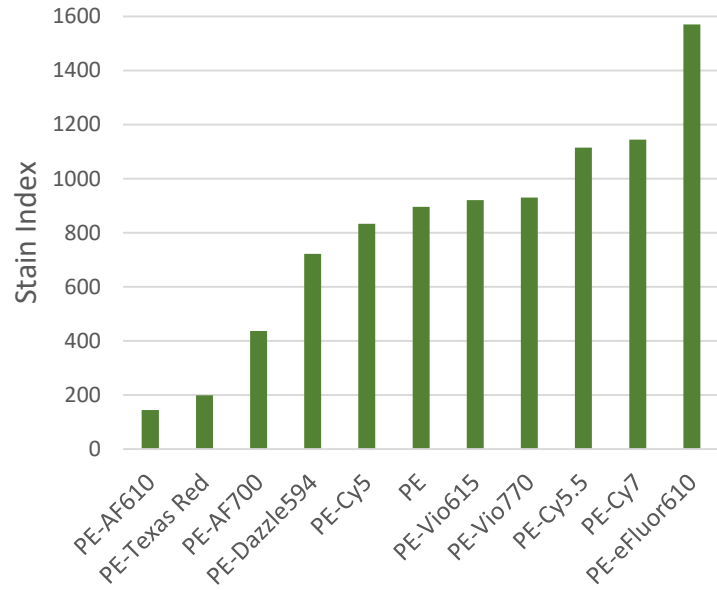
Stain Indexes - 4 Laser System, 58 Dyes



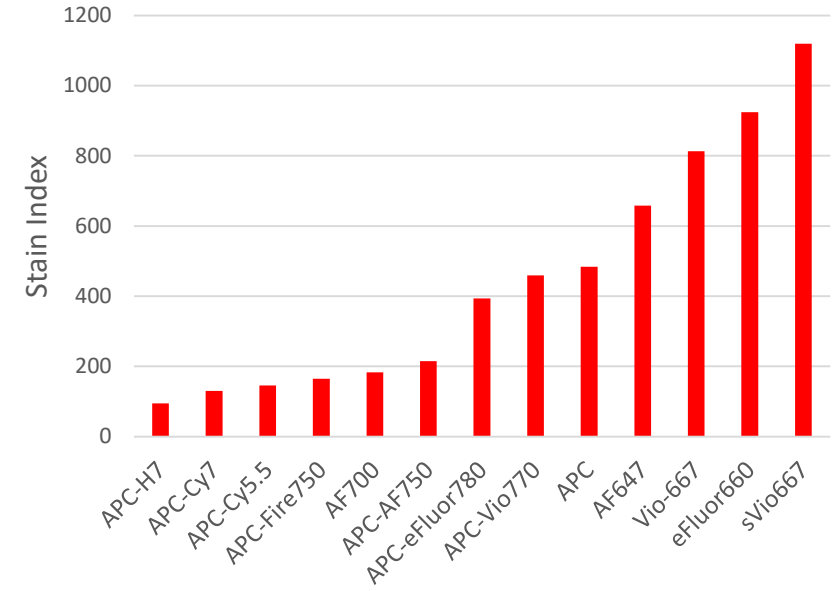
Stain Index Blue Laser Excitable Dyes



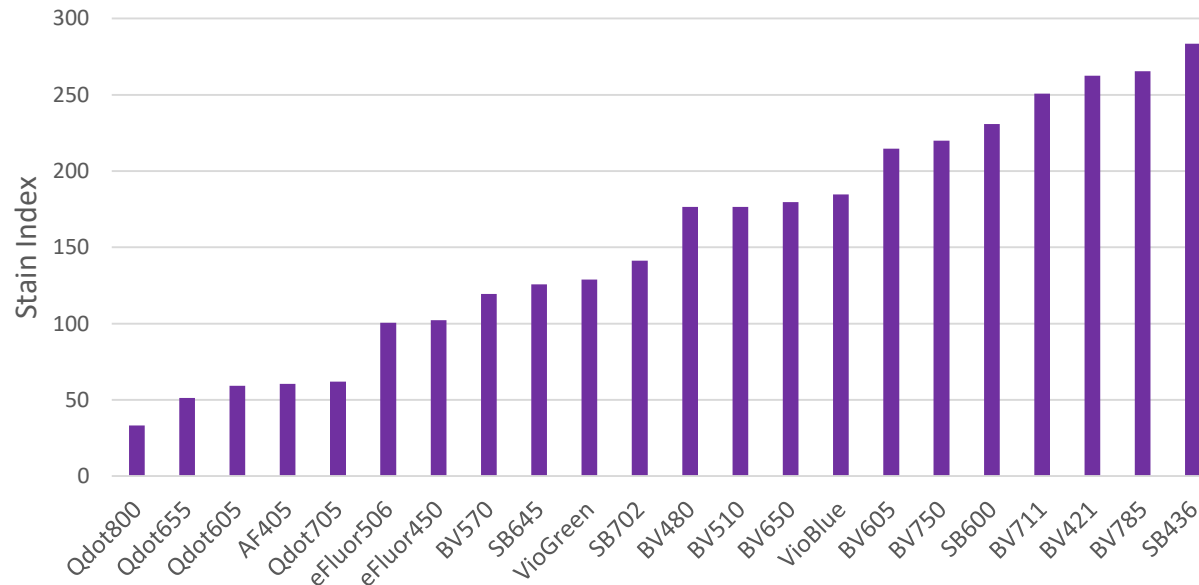
Stain Index Blue Laser Excitable Dyes



Stain Index Red Laser Excitable Dyes



Stain Index Violet Laser Excitable Dyes



Cross-Stain Index Matrix

Dyes used in combination need to have a unique spectrum AND also 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, you will use one or the other (not both!).

Spread matrix for 24 fluors that can be use in combination

	BV421	SB436	eF450	BV480	BV510	BV570	BV605	BV650	BV711	BV750	BV785	BB515	AF488	AF532	PE	PE/Dazzle594	PE-Cy5	PerCP-Cy5.5	PerCP-eF710	PE-Cy7	APC	AF647	APC-R700	APC-Fire750
BV421																								
SB436																								
eF450																								
BV480																								
BV510																								
BV570																								
BV605																								
BV650																								
BV711																								
BV750																								
BV785																								
BB515																								
AF488																								
AF532																								
PE																								
PE/Dazzle594																								
PE-Cy5																								
PerCP-Cy5.5																								
PerCP-eF710																								
PE-Cy7																								
APC																								
AF647																								
APC-R700																								
APC-Fire750																								

To read this table: spread of fluor in the row impacts resolution of the fluor in the column. Red means the fluor in that row has significant spread into the dye in the column (for example PE into AF532). Areas in bright pink and red indicate pairs for which more attention to panel design is needed.