



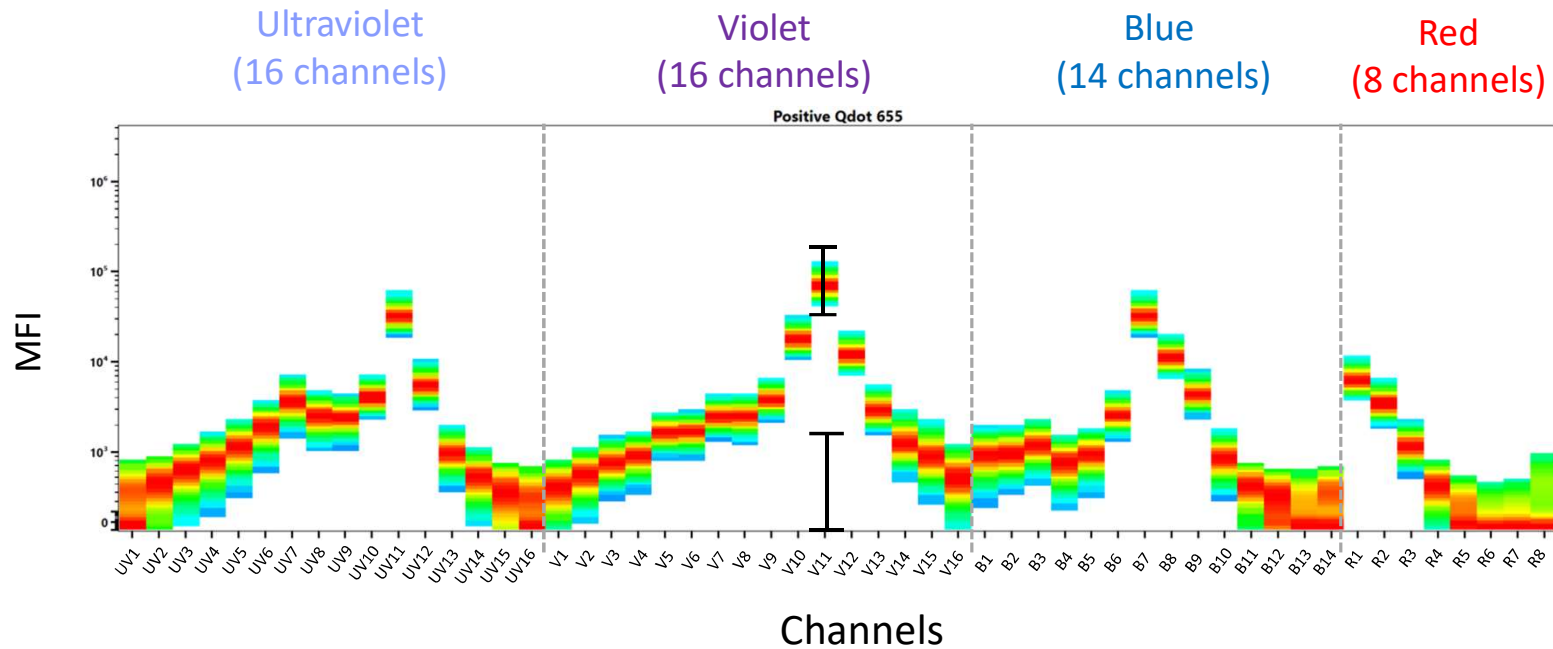
Cytek® Aurora Fluorochrome Selection Guidelines 4 Laser 16UV-16V-14B-8R

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 27).

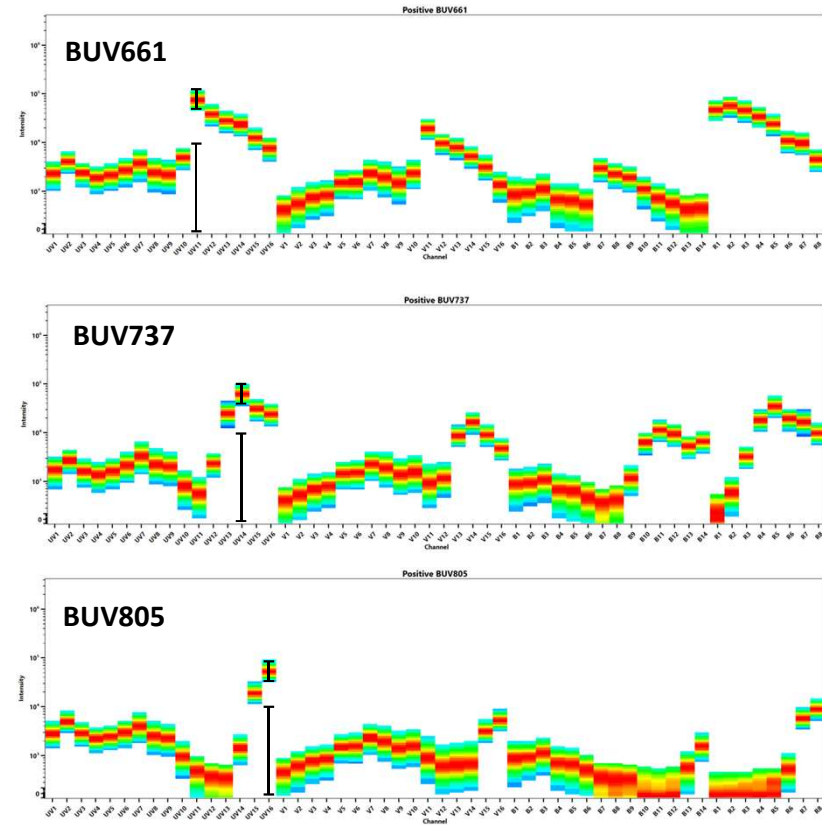
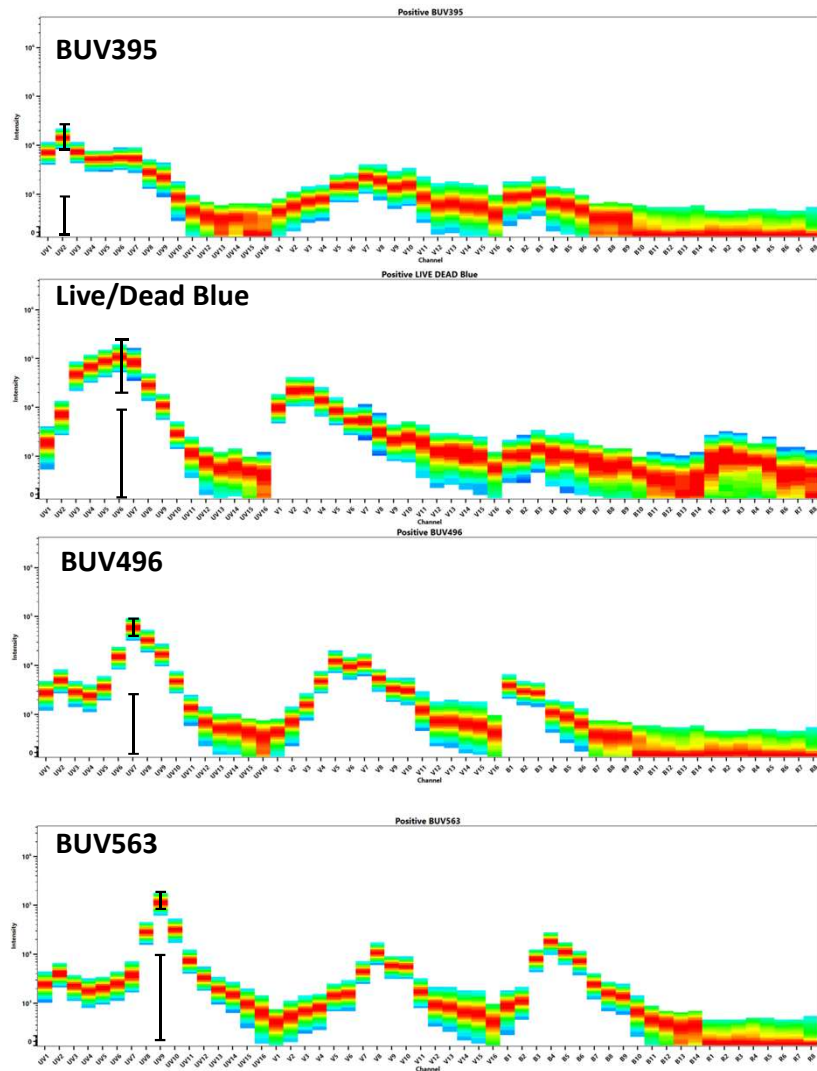
How to Read Full Spectrum Fluorochrome Signatures



This dye is excited by all 5 lasers. The peak channel (indicated by the black bar) is in channel V11, and it has secondary emission in channels UV11, B7, and R1. Based on this information, expect this dye to introduce spread into dyes emitting at similar wavelengths.

Dyes Primarily Excited by the Ultraviolet Laser

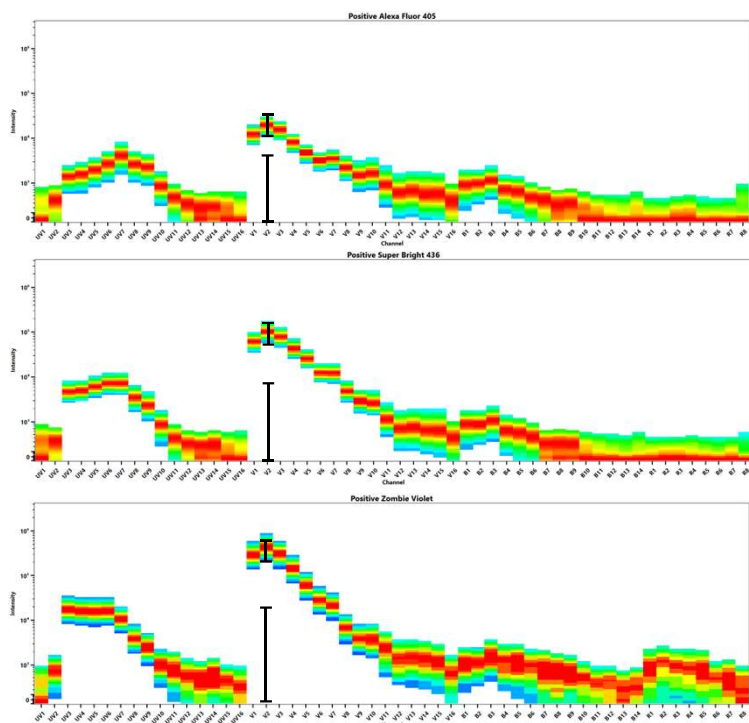
Ultraviolet Laser Excitable Dyes with Unique Signatures



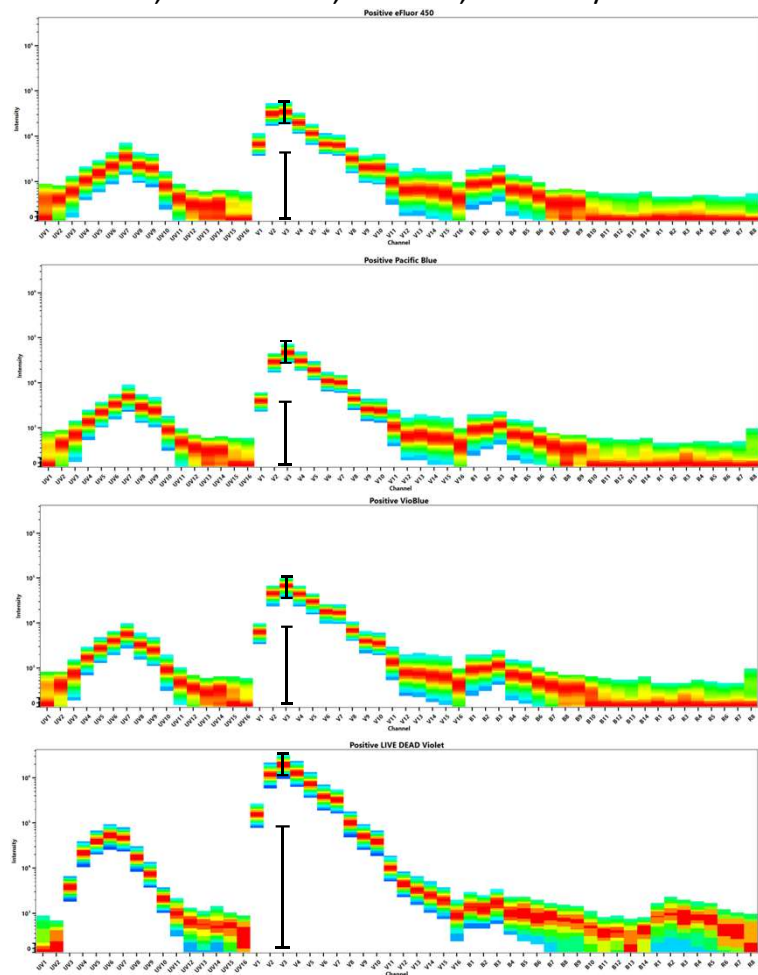
Dyes Primarily Excited by the Violet Laser

Violet Laser Excitable Dyes with Similar Signatures

Alexa Fluor 405, SuperBright 436 and Zombie Violet

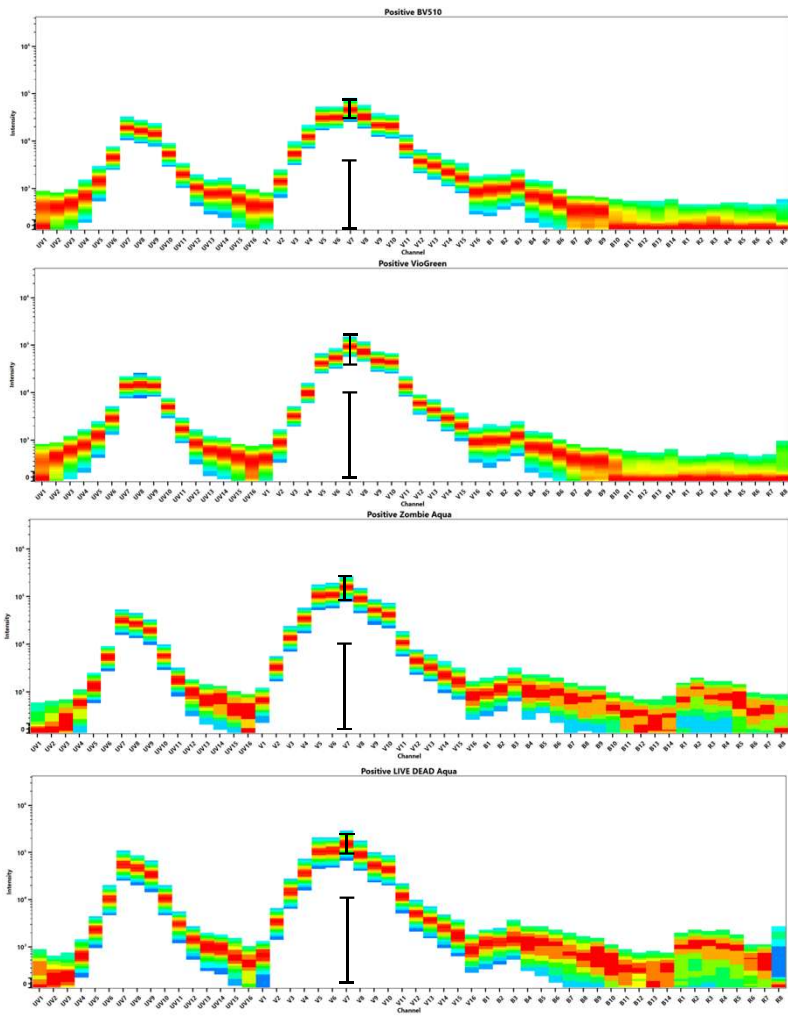


eFluor 450, Pacific Blue, VioBlue, and Live/Dead Violet

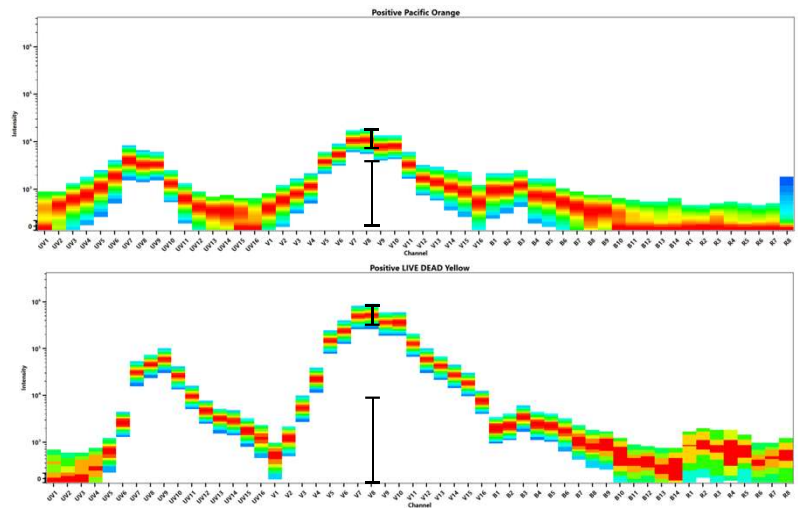


Violet Laser Excitable Dyes with Similar Signatures

BV510, VioGreen, Zombie Aqua and Live/Dead Aqua

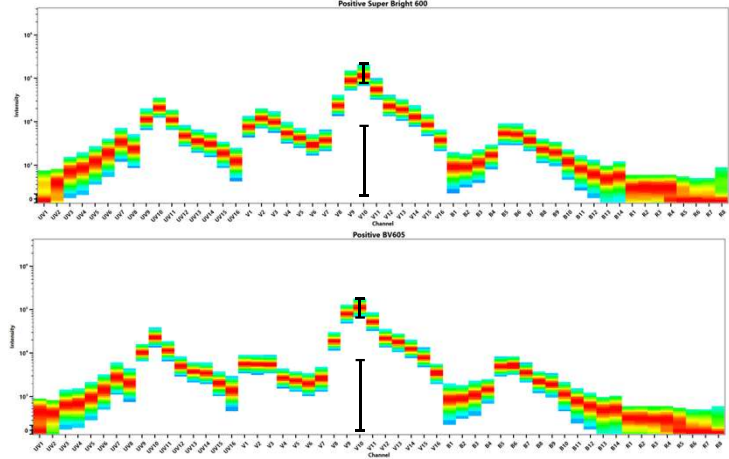


Pacific Orange and Live/Dead Yellow

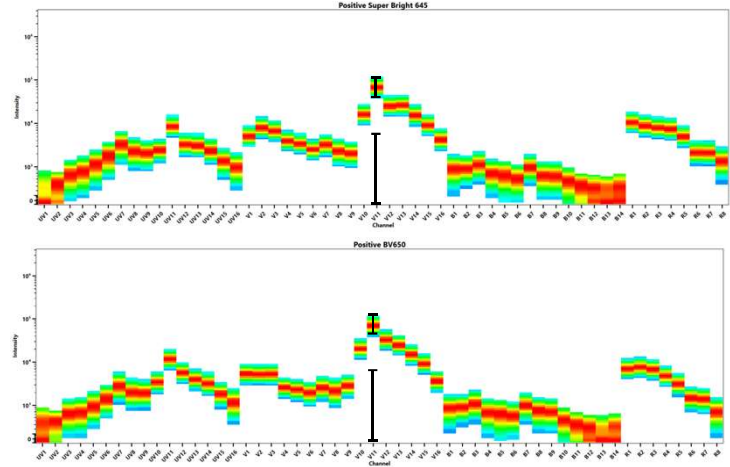


Violet Laser Excitable Dyes with Similar Signatures

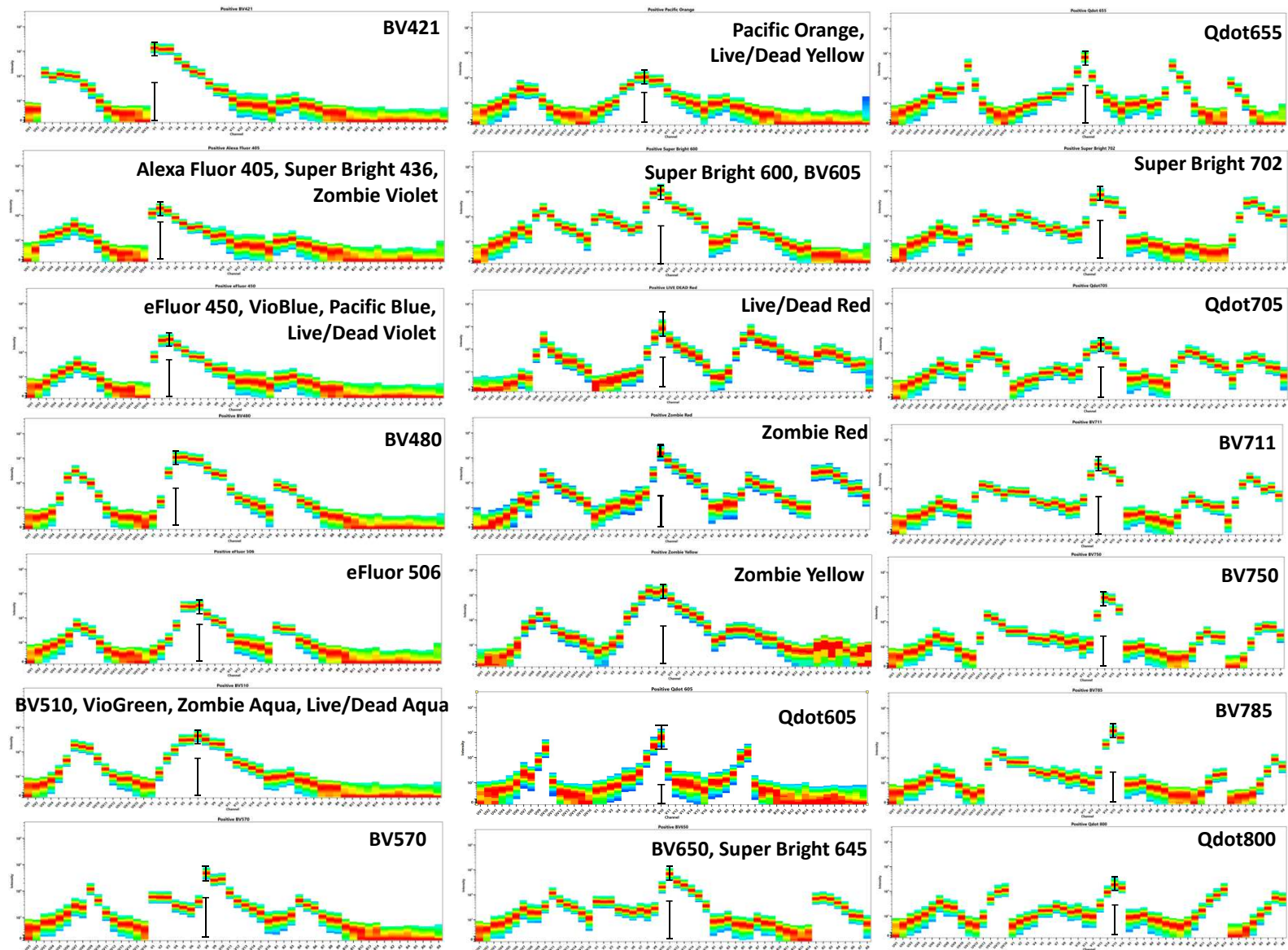
Super Bright 600 and BV605



Super Bright 645 and BV650



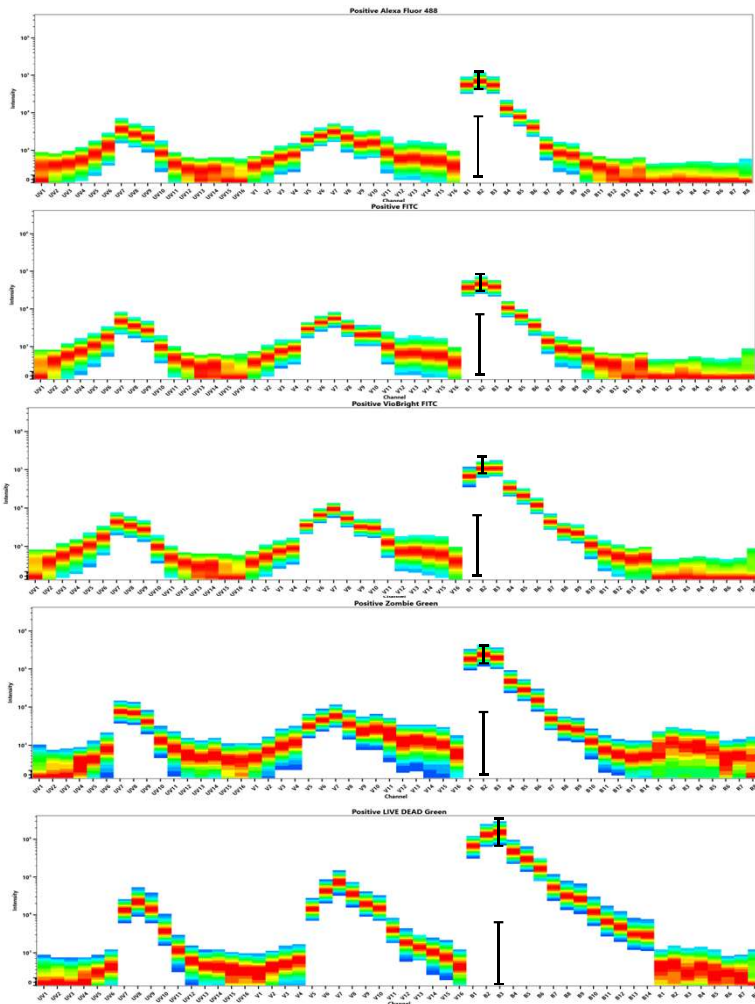
Violet Laser Excitable Dyes with Unique Signatures



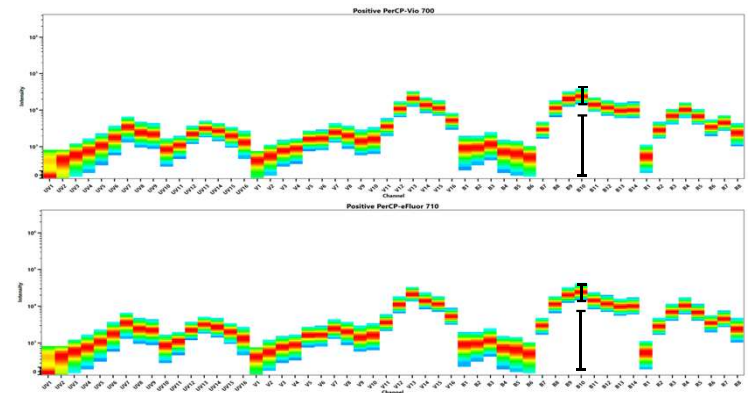
Dyes Primarily Excited by the Blue Laser

Blue Laser Excitable Dyes with Similar Signatures

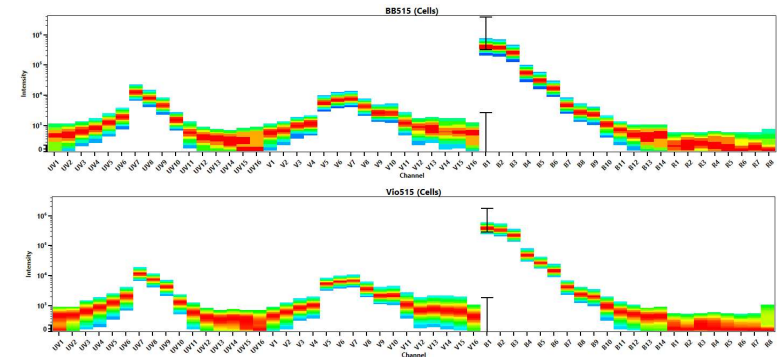
Alexa Fluor 488, FITC, VioBright FITC, Zombie Green and Live Dead Green



PerCP-Vio 700 and PerCP-eFluor 710

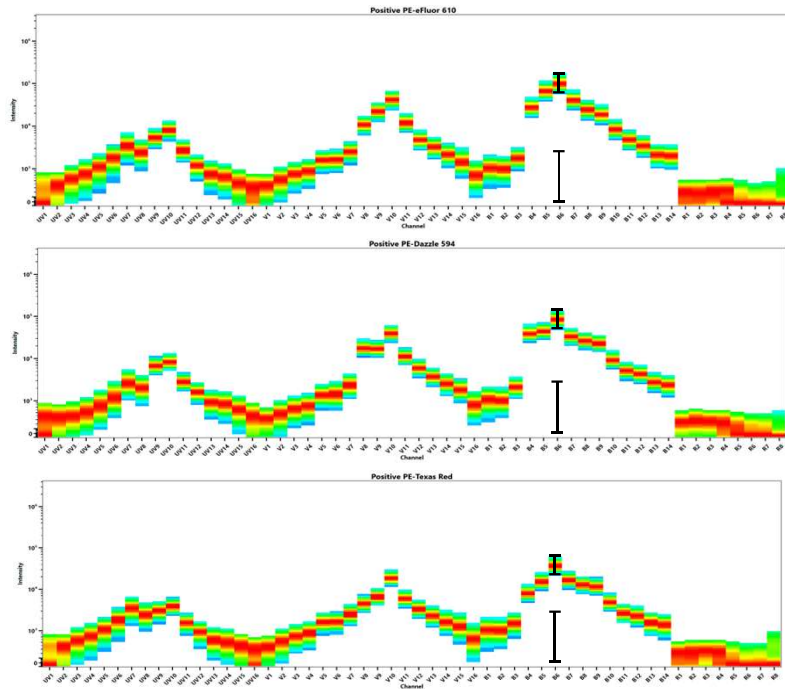


BB515 and Vio515

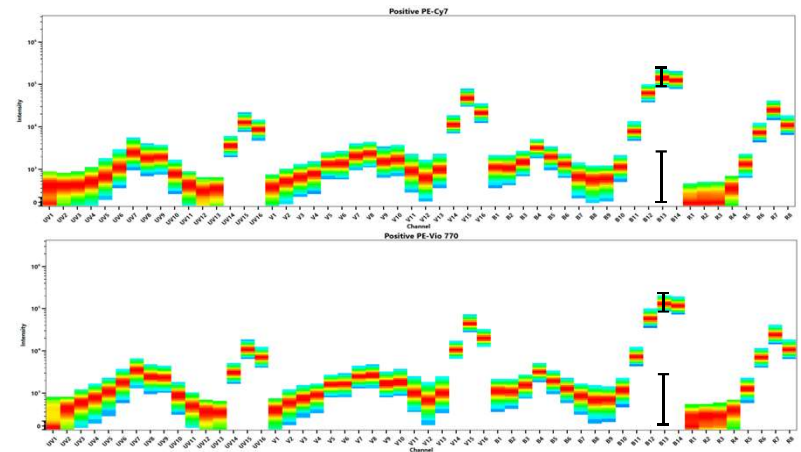


Blue Laser Excitable Dyes with Similar Signatures

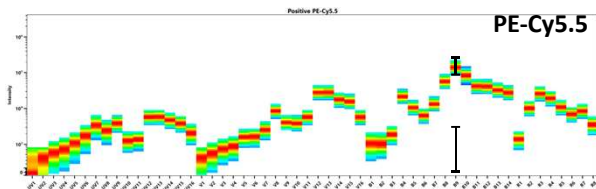
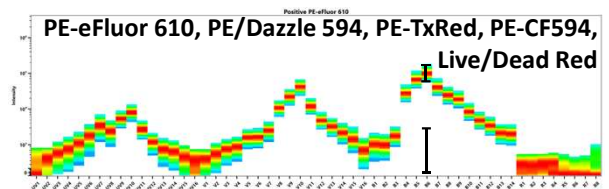
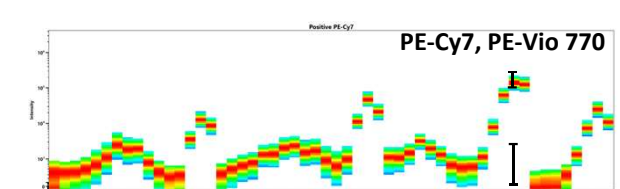
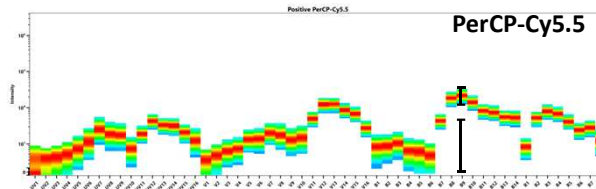
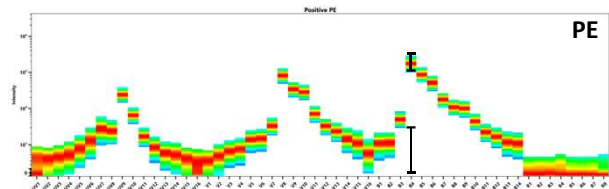
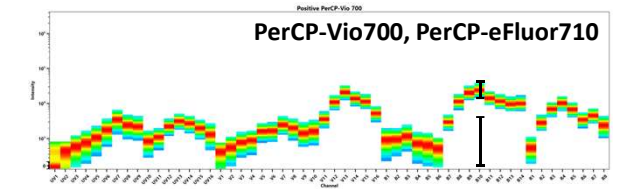
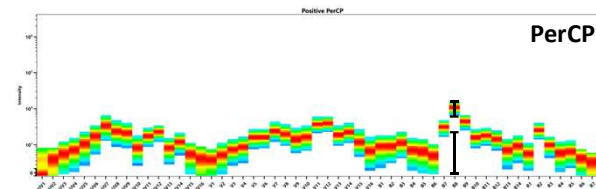
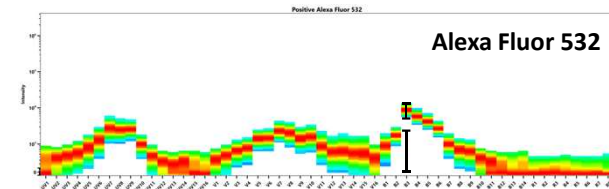
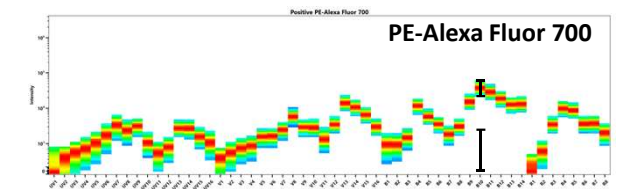
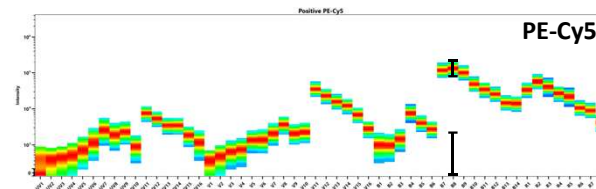
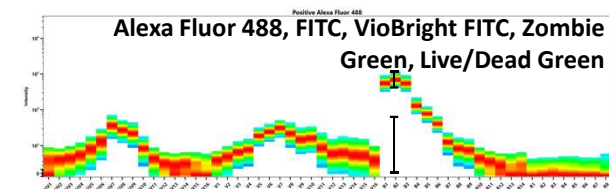
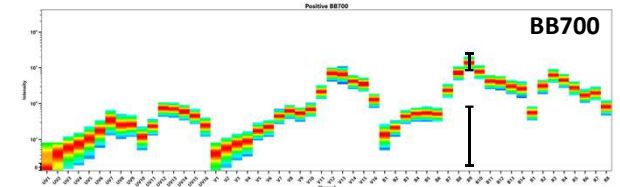
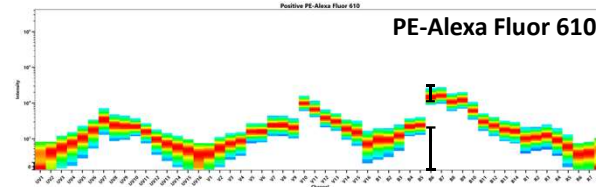
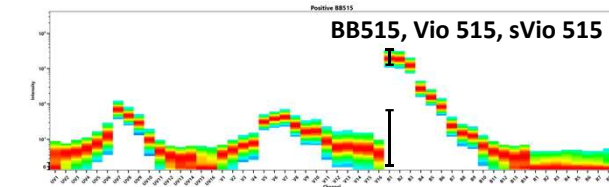
PE-eFluor 610, PE/Dazzle 594, PE-CF594, PE-Texas Red



PE-Cy7 and PE-Vio 770



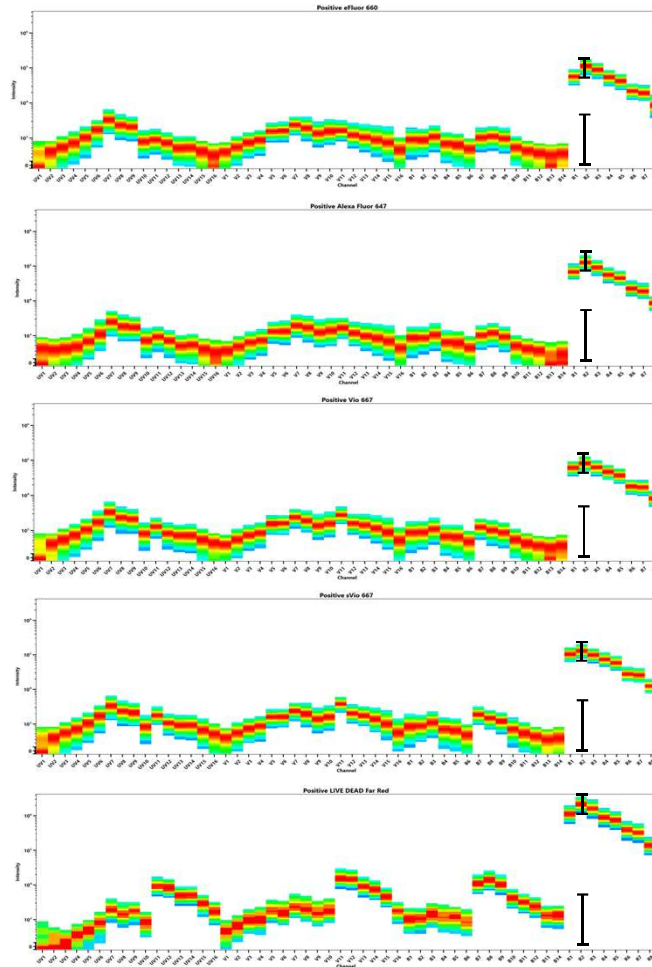
Blue Laser Excitable Dyes with Unique Signatures



Dyes Primarily Excited by the
Red Laser

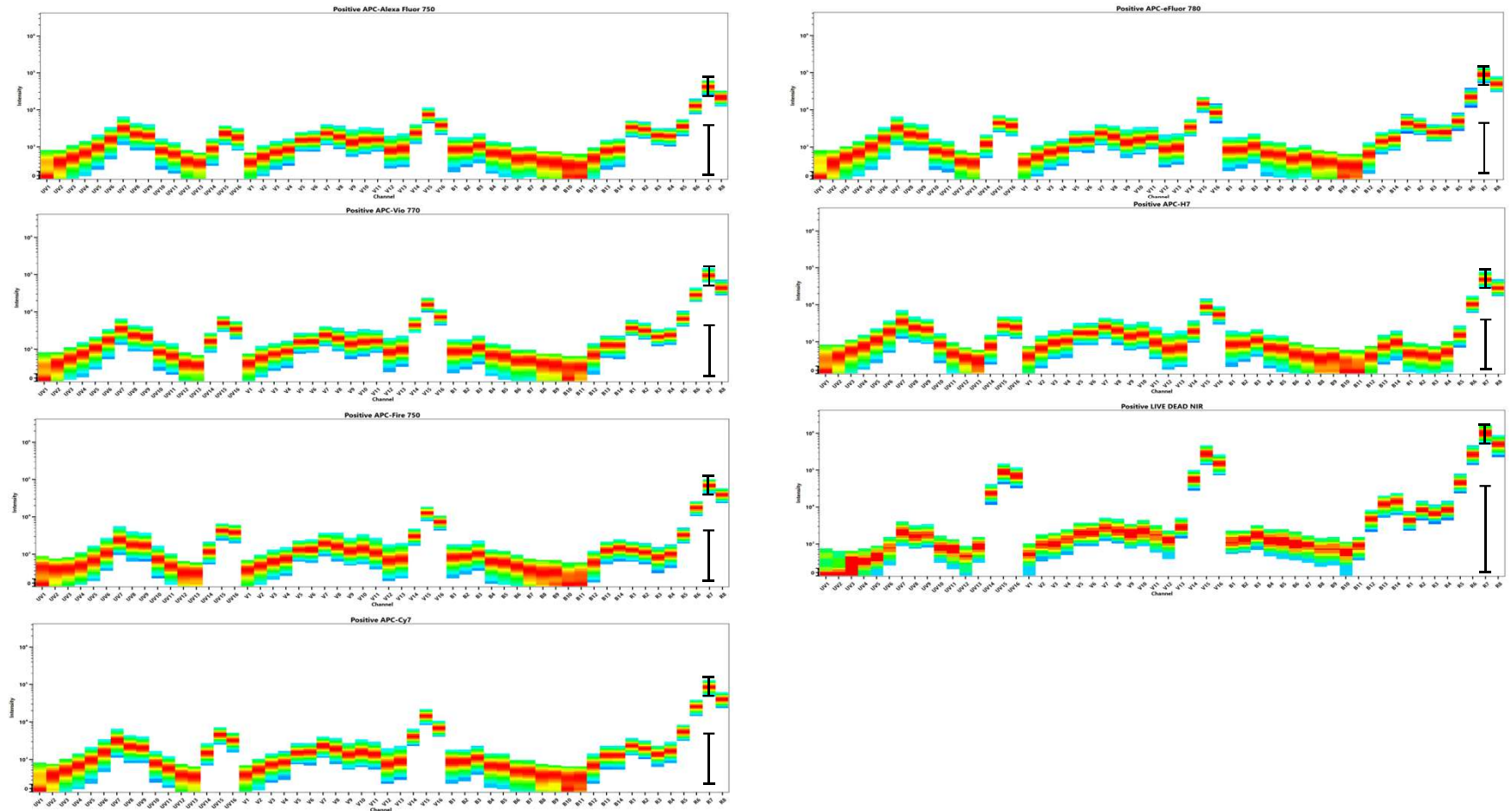
Red Laser Excitable Dyes with Similar Signatures (1 of 2)

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

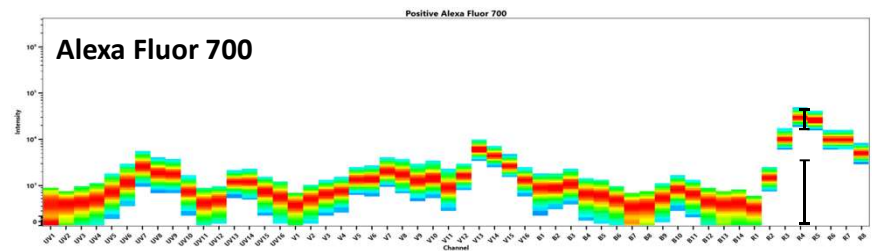
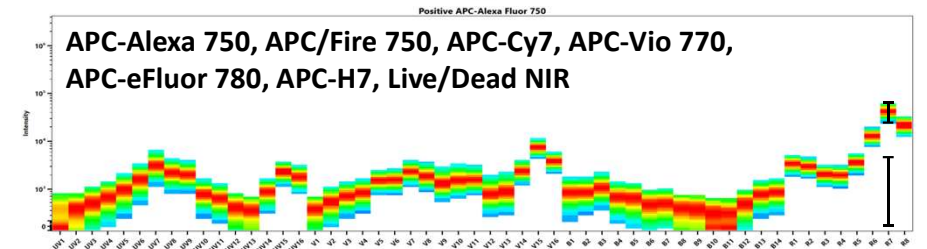
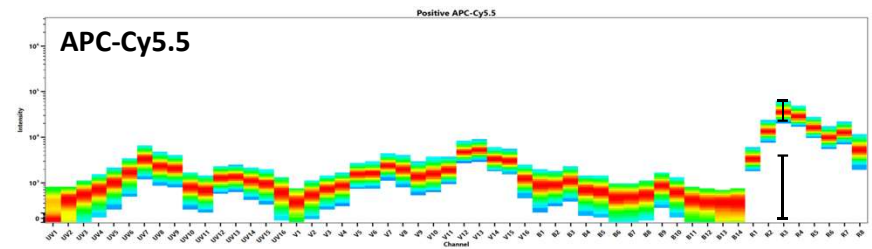
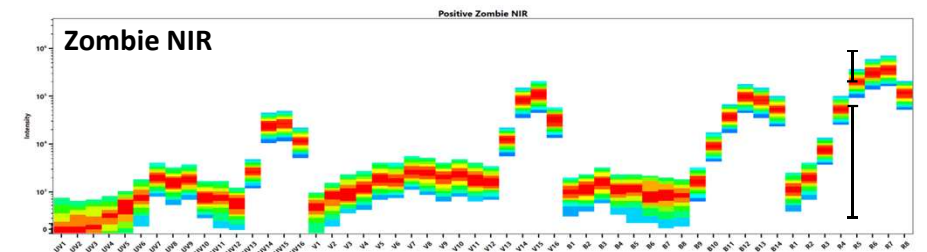
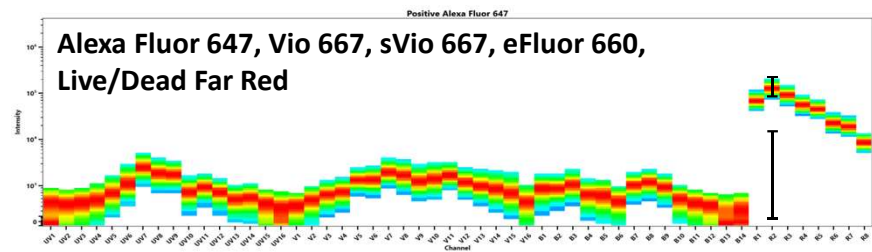
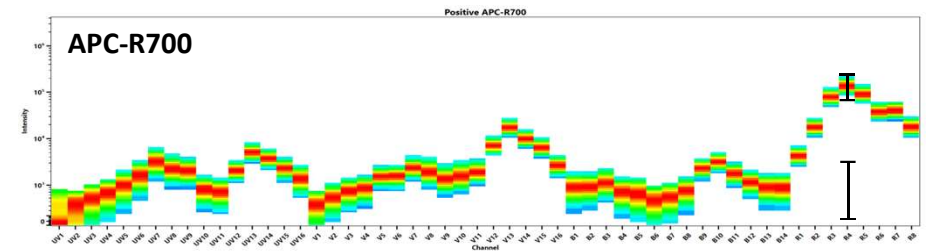
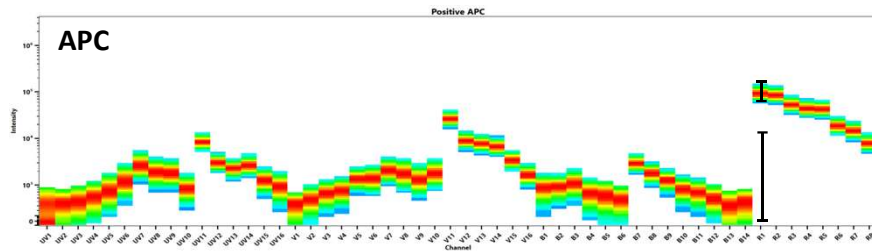


Red Laser Excitable Dyes with Similar Signatures (2 of 2)

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

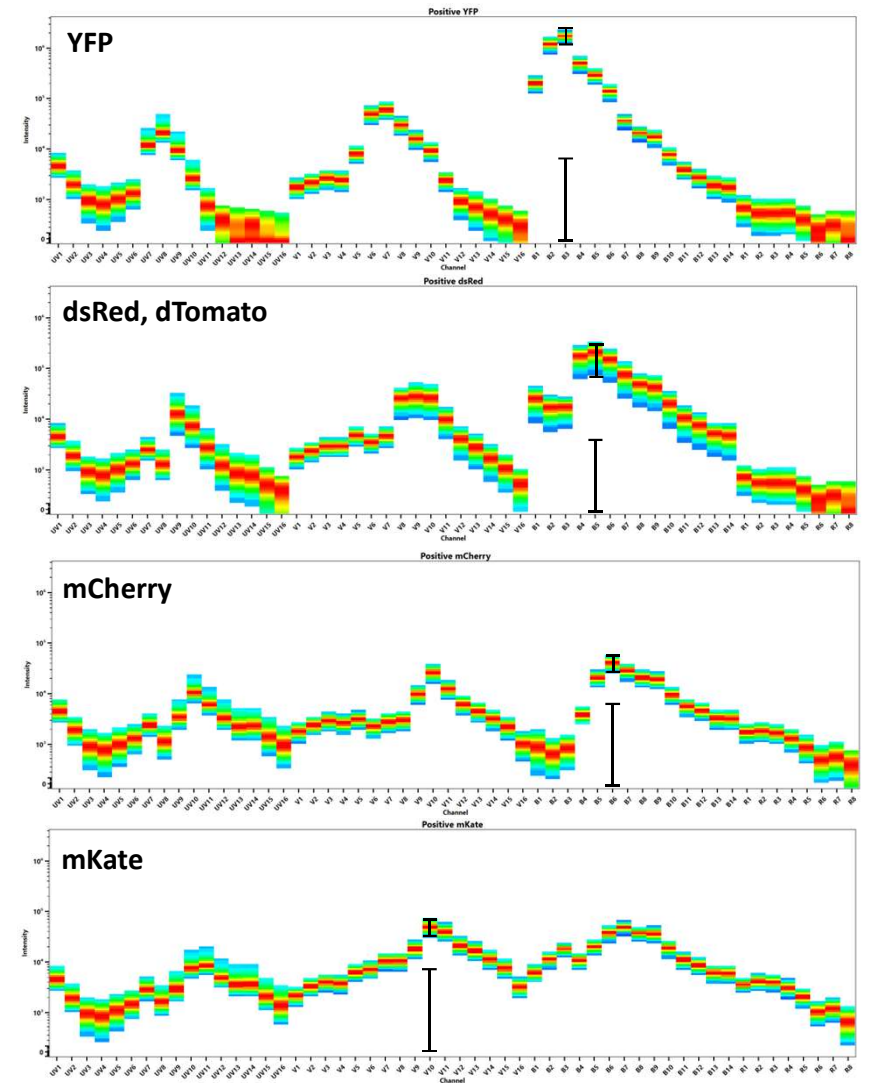
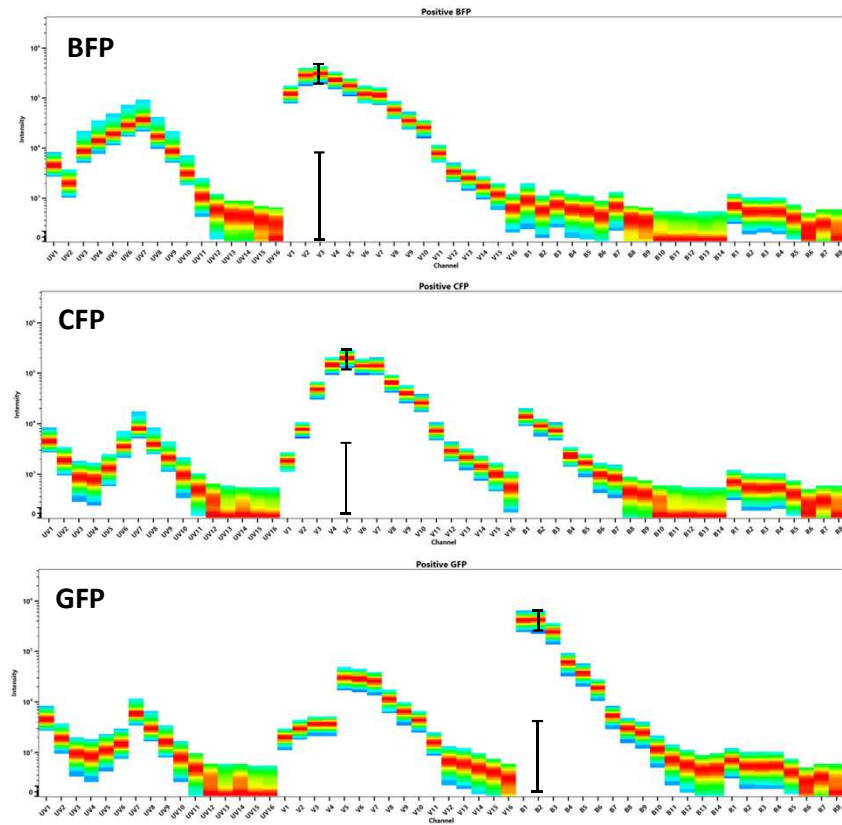


Red Laser Excitable Dyes with Unique Signatures



Fluorescent Protein Signatures

Fluorescent Proteins



Peak Channels & Possible Combination of Dyes

Fluorochrome Peak Channels

UV Excited Fluors	Peak Channel
BUV395	UV2
BUV496	UV7
BUV563	UV9
BUV661	UV11
BUV737	UV14
BUV805	UV16
Violet Excited Fluors	Peak Channel
BV421	V1
Alexa Fluor 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, SuperBright 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
PE	B4
PE/Dazzle 594, PE-CF 594, PE-Texas Red, eFluor 610, PE-Alexa Fluor 610	PE- B6
PerCP, PE-Cy5	B8
PerCP-Cy5.5, BB700, PE-Cy5.5	B9
PE-Alexa Fluor 700, PerCP-eFluor 710, PerCP-Vio 700	B10
PE-Cy7, PE-Vio 770	B13
Red Excited Fluors	
APC	R1
Alexa Fluor 647, Vio 667, sVio 667, eFluor660	R2
APC-Cy5.5	R3
Alexa 700, APC-R700	R4
APC-Alexa750, APC/Fire 750, APC-Cy7, APC Vio 770, APC-eFluor780, APC-H7	R7

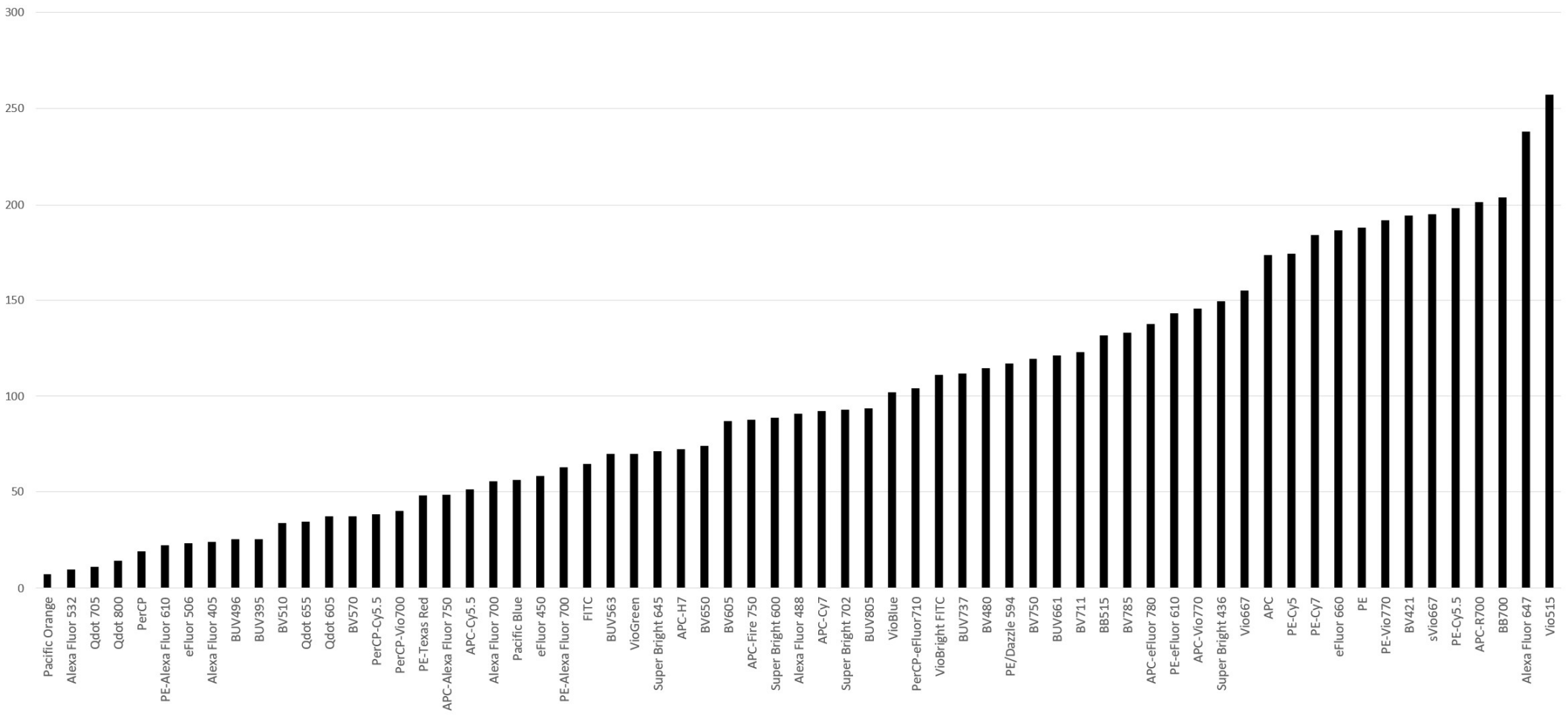
Example of 30 Dyes that can be Used in Combination (CAREFUL PANEL DESIGN IS NEEDED)

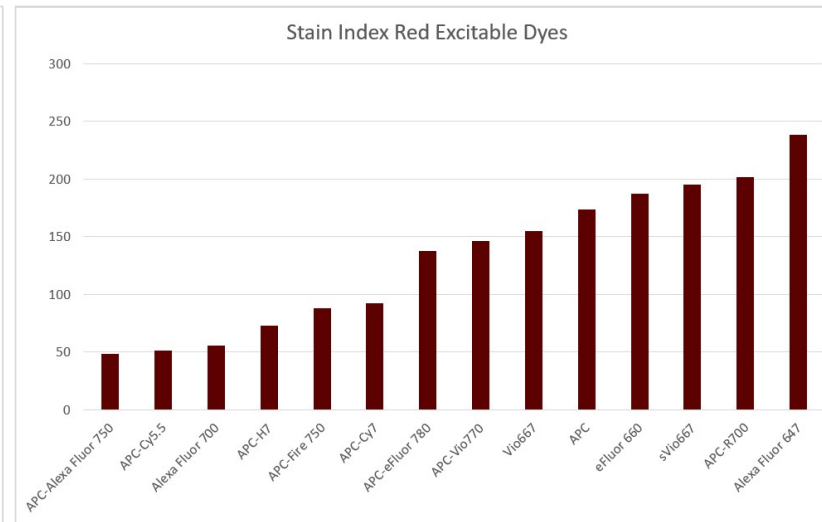
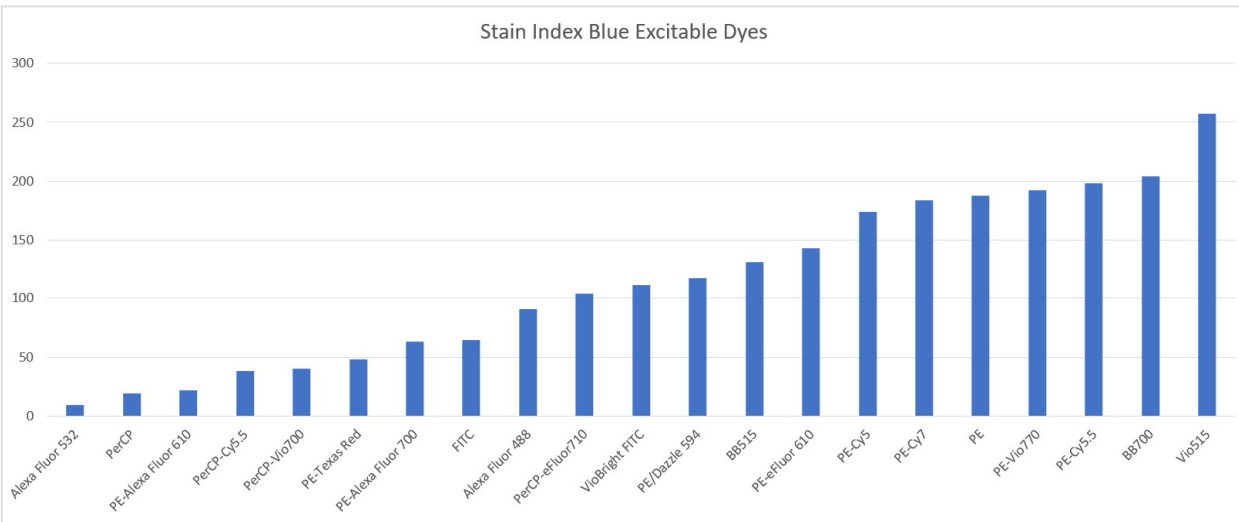
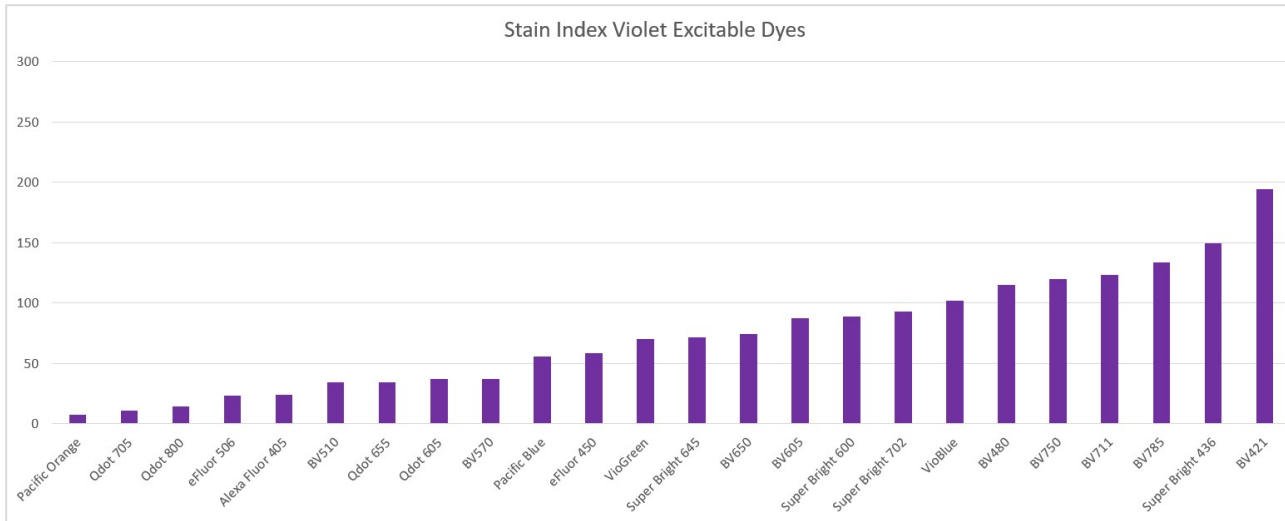
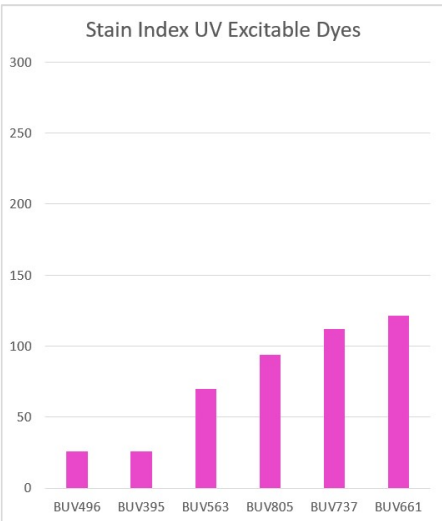
UV Excited Fluors	Violet Excited Fluors	Blue Excited Fluors	Red Excited Fluors
BUV395	BV421	BB515	APC
BUV496	SuperBright 436	Alexa Fluor 488	Alexa Fluor 647
BUV563	eFluor450	Alexa Fluor 532	APC-R700
BUV661	BV480	PerCP-Cy5.5	APC/Fire 750
BUV737	BV510	PerCP-eFluor 710	
BUV805	BV570	PE	
	BV605	PE/Dazzle 594	
	BV650	PE-Cy5	
	BV711	PE-Cy7	
	BV750		
	BV785		

Stain Indexes

Data generated using CD4 staining on human PBMCs

Stain Index Ranking - 65 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 30 Fluors that can be Used in Combination

	BUV395	BUV496	BUV563	BUV661	BUV737	BUV805	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
BUV395																														
BUV496																														
BUV563																														
BUV661																														
BUV737																														
BUV805																														
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																														

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 BB515 into Alexa Fluor 488). Areas in bright pink and red indicate pairs for which more attention to panel design is needed.