CYTEK
TRANSCEND THE CONVENTIONAL

Cytek® Aurora
Fluorochrome Selection Guidelines
2-Laser 14B-8R

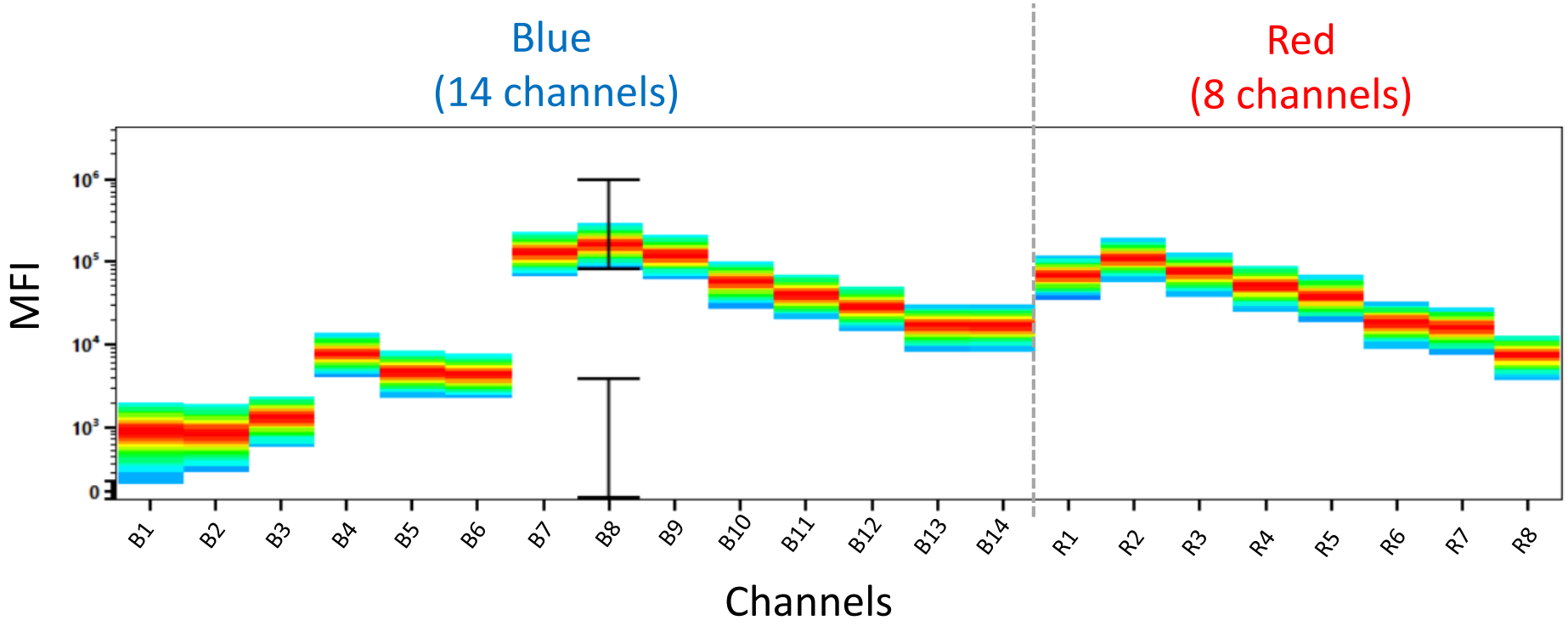
N9-20020 Rev. A

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 16).

How to Read Full Spectrum Fluorochrome Signatures

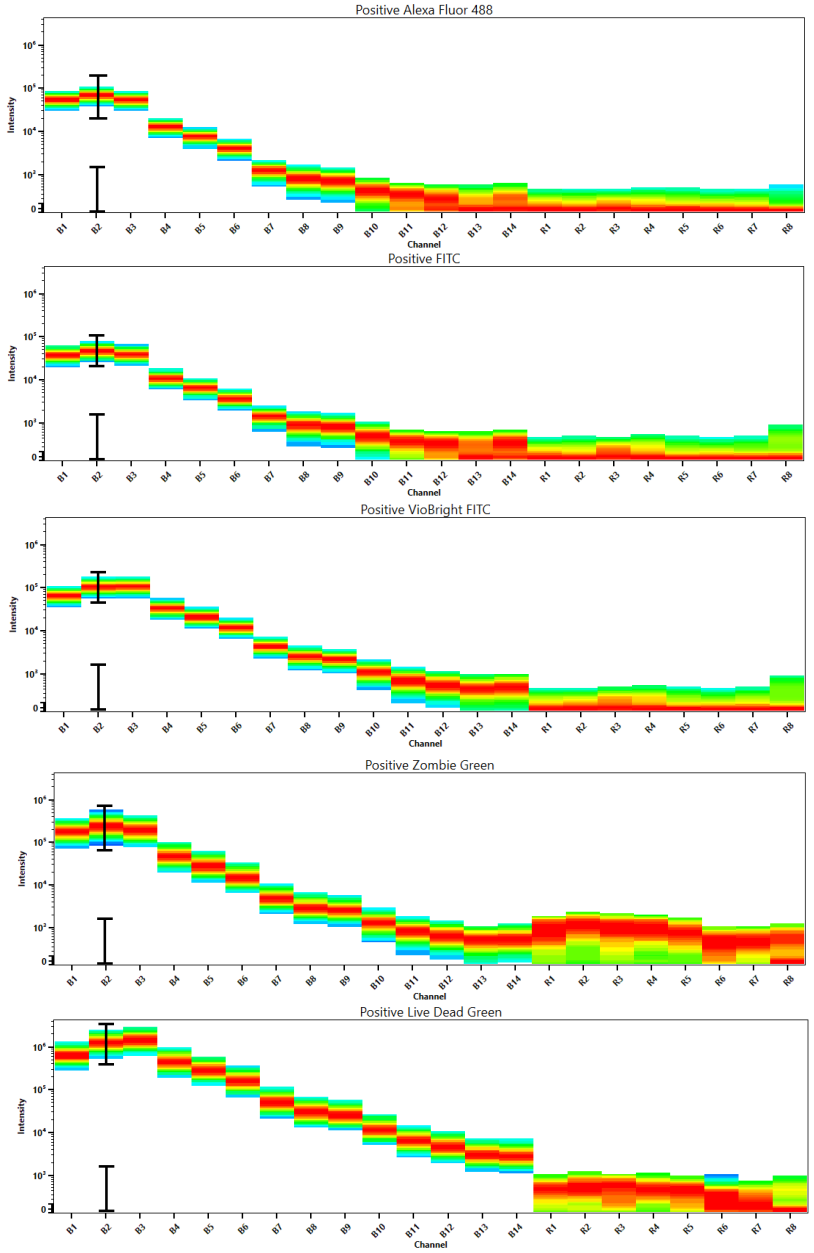


This dye is excited by both lasers. The peak channel (indicated by the black bar) is in channel B8, and it has secondary emission in channel R2. Based on this information, expect this dye to introduce spread into dyes emitting at similar wavelengths.

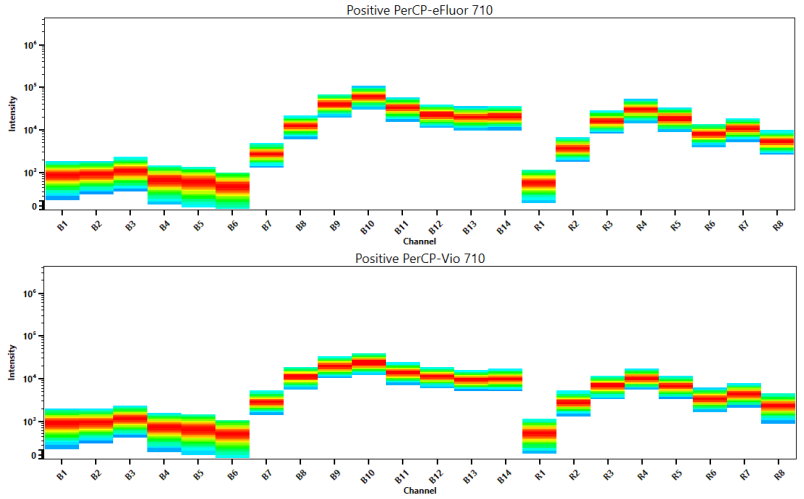
Dyes Primarily Excited by the Blue Laser

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

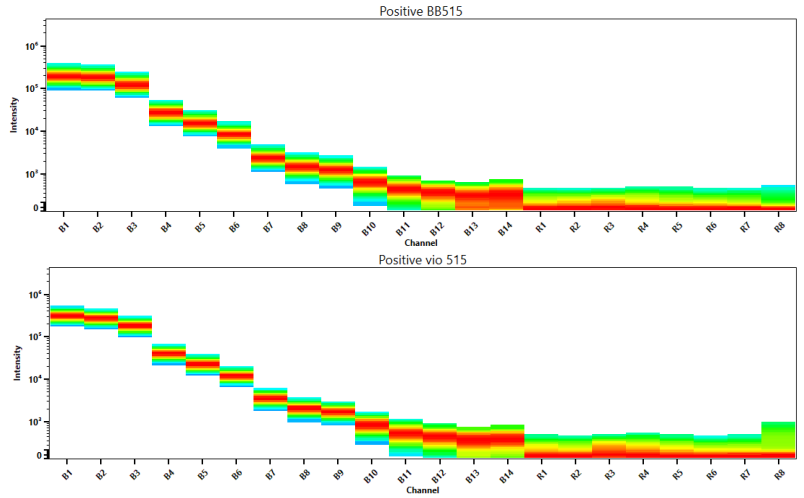
Alexa Fluor 488, FITC, VioBright FITC, Zombie Green and Live Dead Green



PerCP-eFluor 710 and PerCP-Vio 710

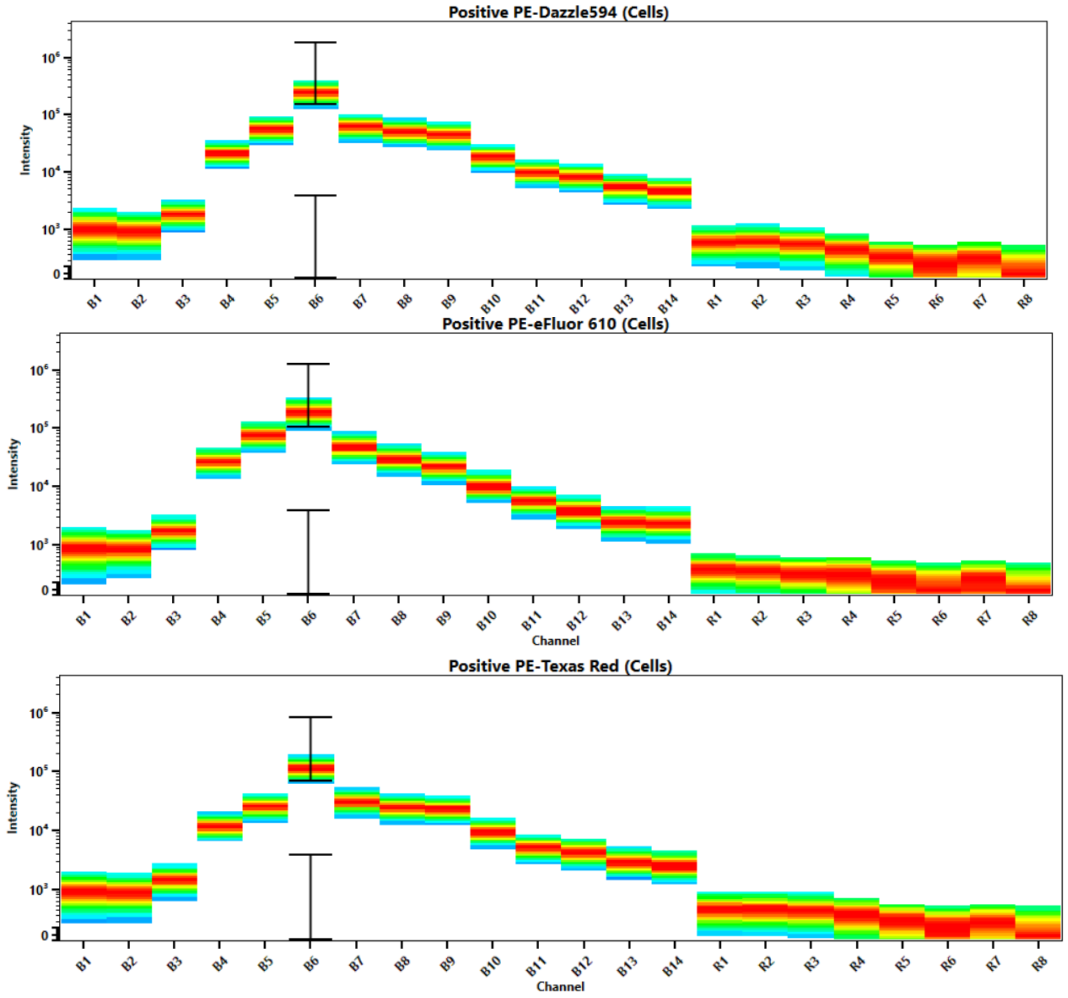


BB515, Vio515 and sVio 515

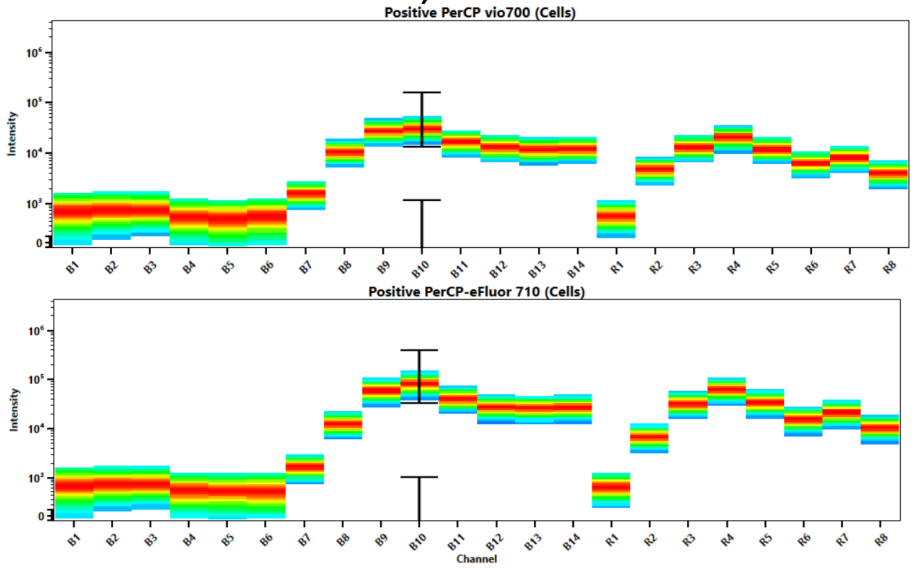


Blue Laser Excitable Dyes with Similar Signatures (2 of 2)

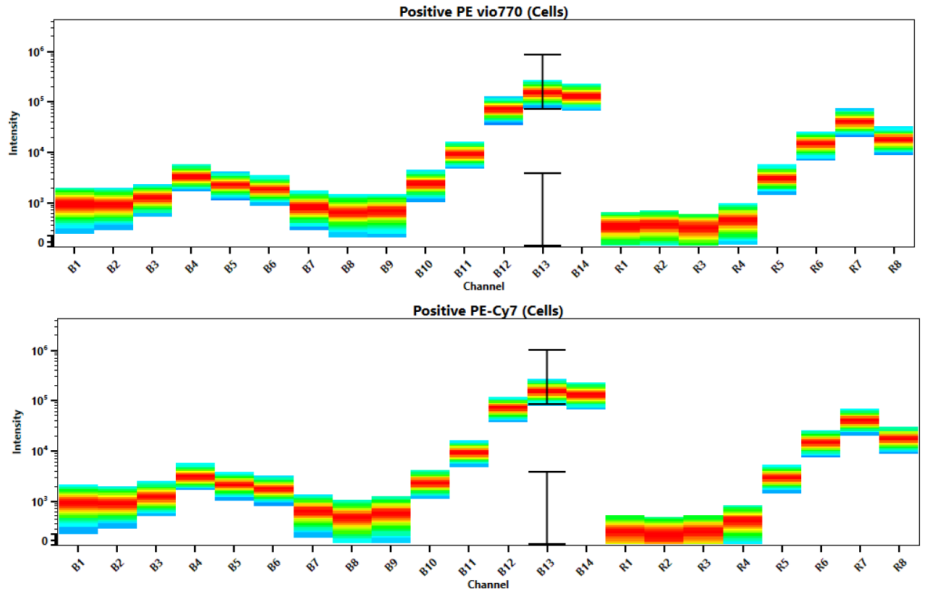
PE/Dazzle 594, PE-eFluor 610, PE-Texas Red



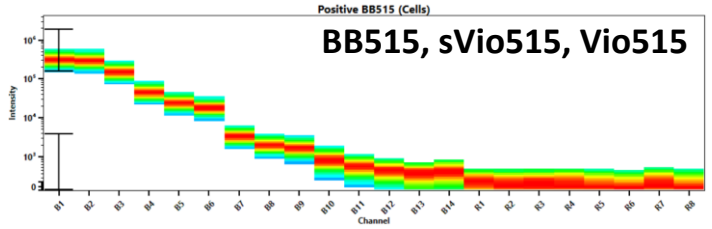
PerCP-Vio700, PerCP-eFluor 710

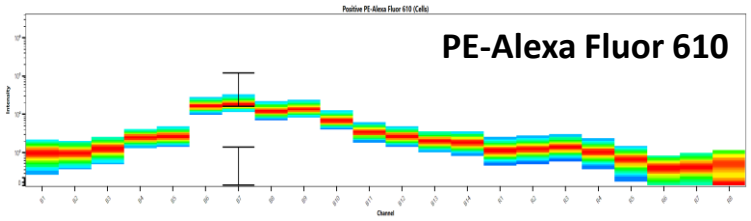


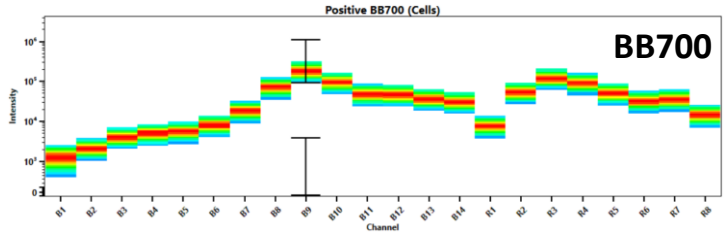
PE-Vio770, PE-Cy7

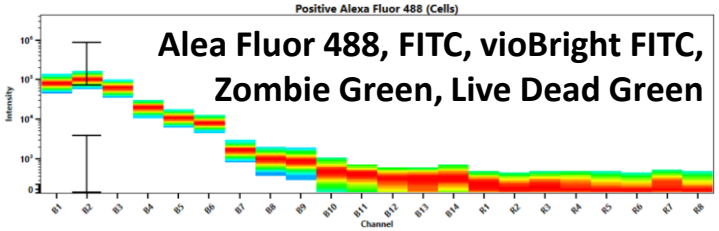


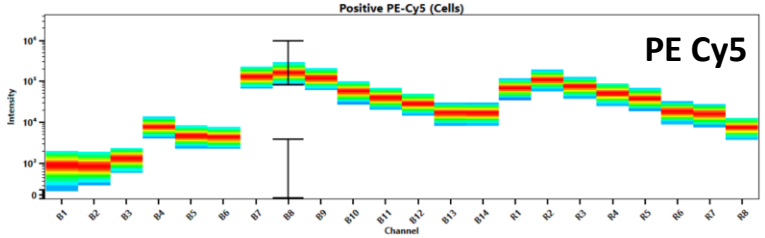
Blue Laser Excitable Dyes with Unique Signatures

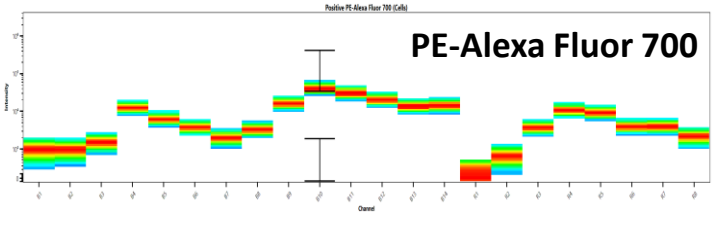


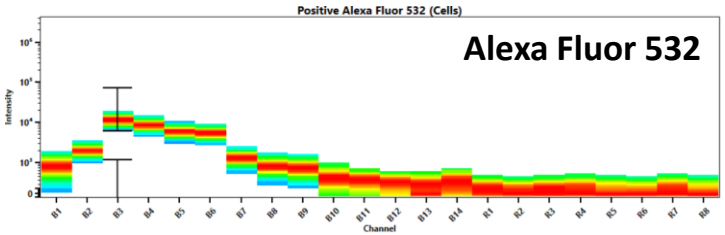


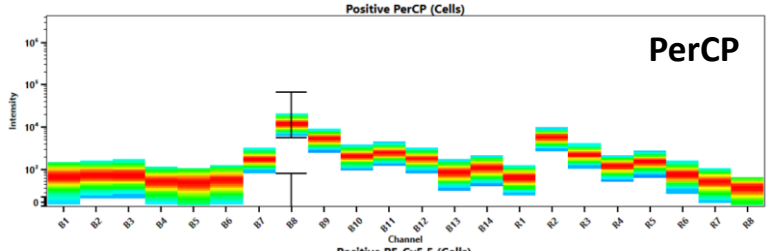


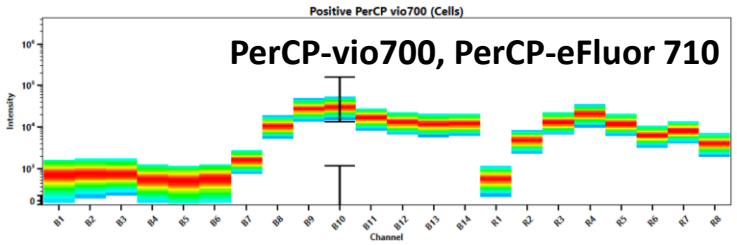


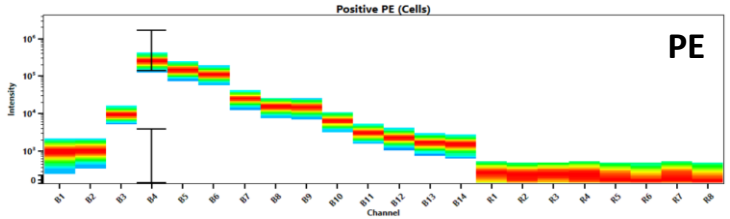


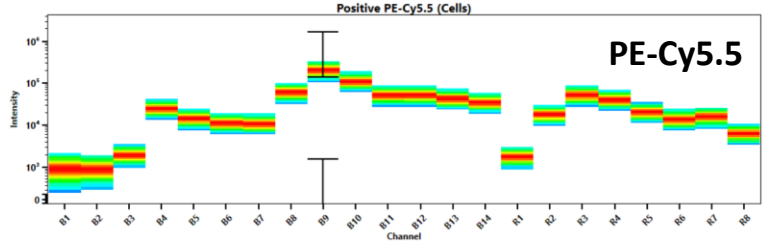


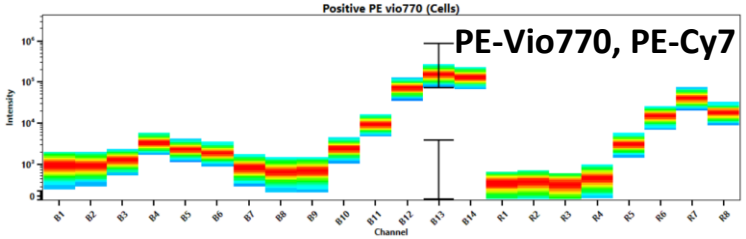


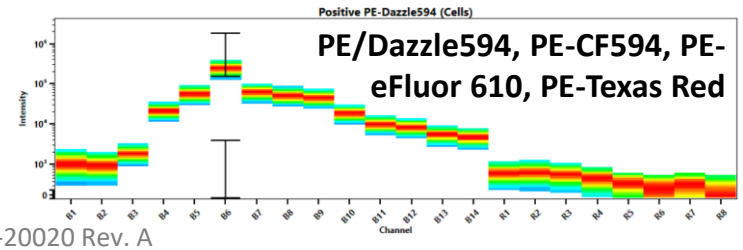


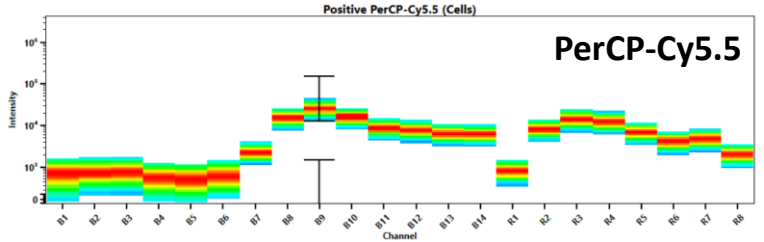








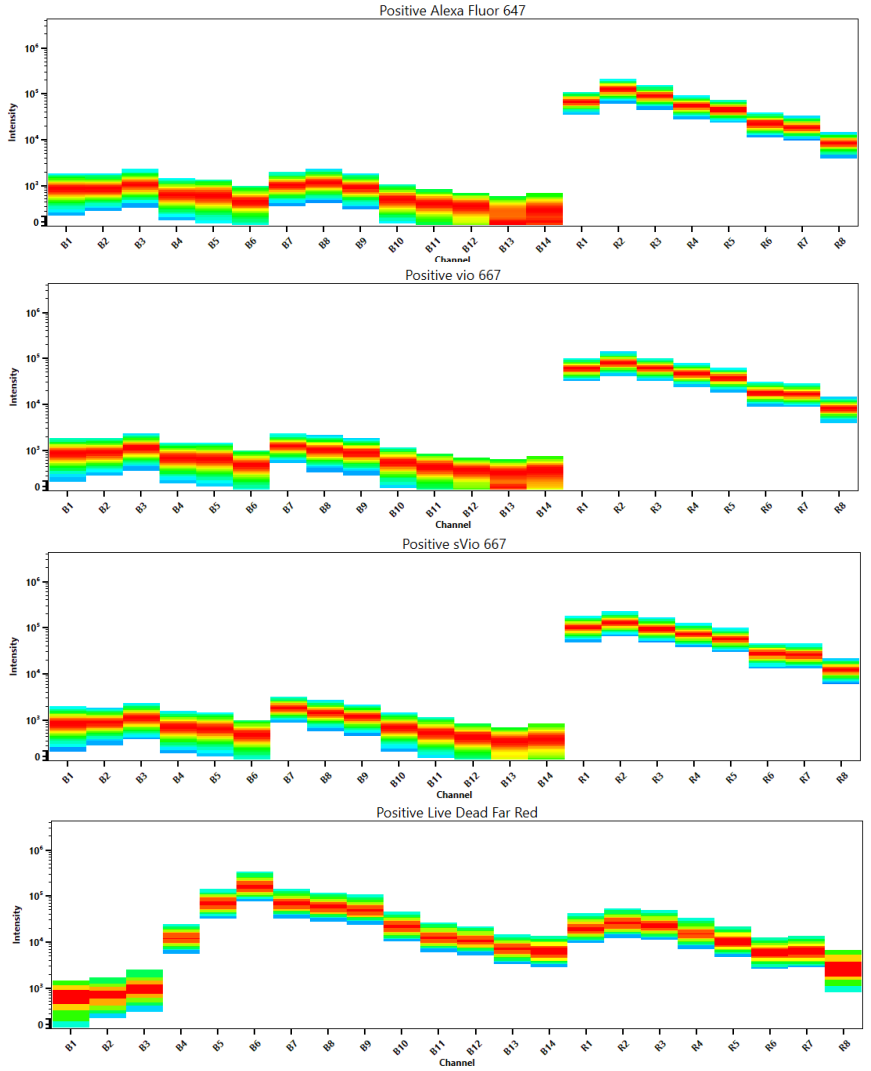




Dyes Primarily Excited by the **Red Laser**

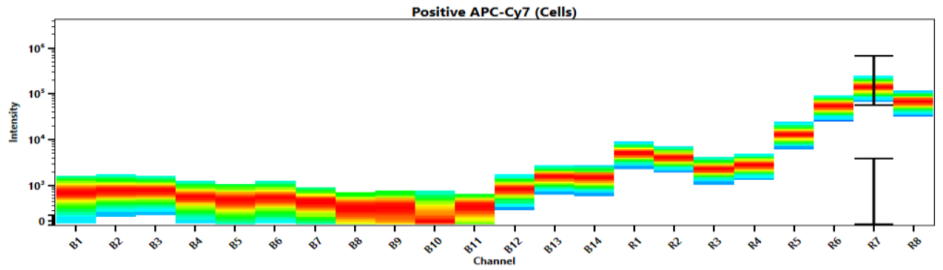
Red Laser Excitable Dyes with Similar Signatures (1 of 2)

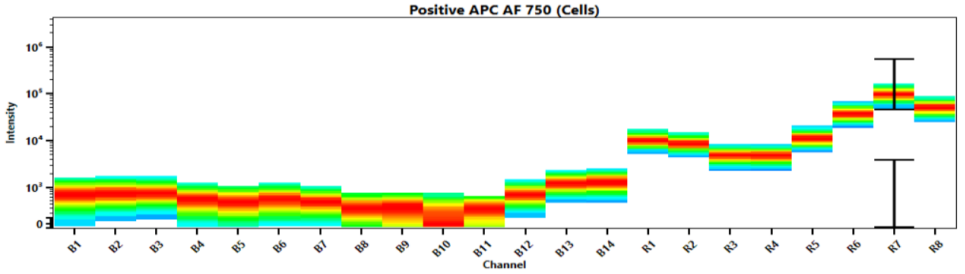
Alexa Fluor 647, Vio 667, sVio 667, Live Dead Far Red

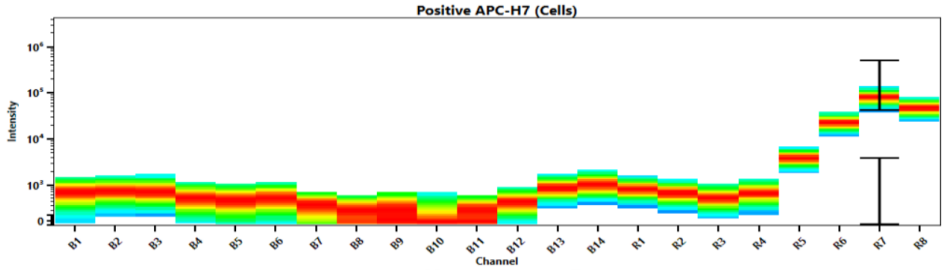


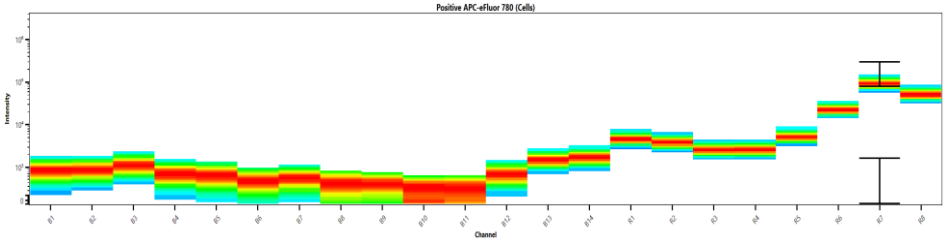
Red Laser Excitable Dyes with Similar Signatures (2 of 2)

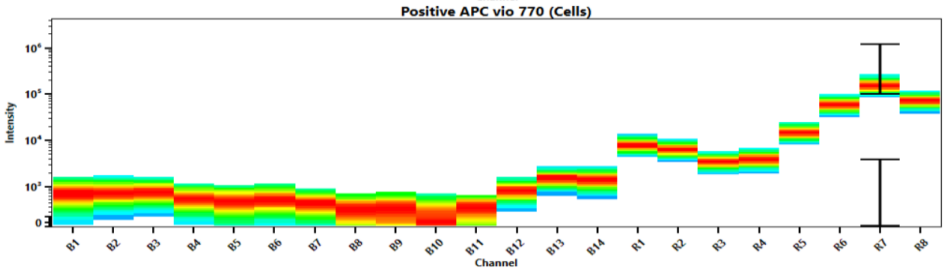
APC-Cy7, APC-H7, APC/Fire750 , APC-Vio770, APC-eFluor780, Live Dead Near-IR

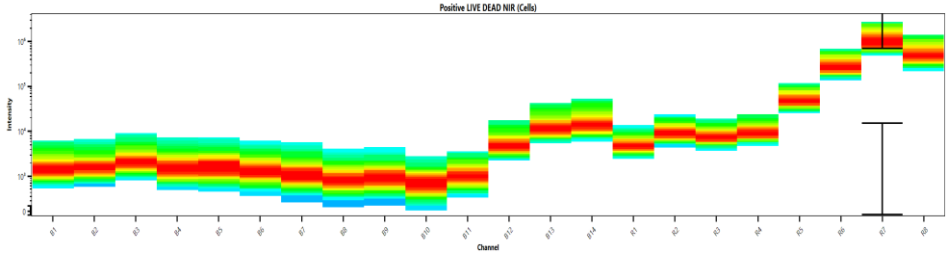




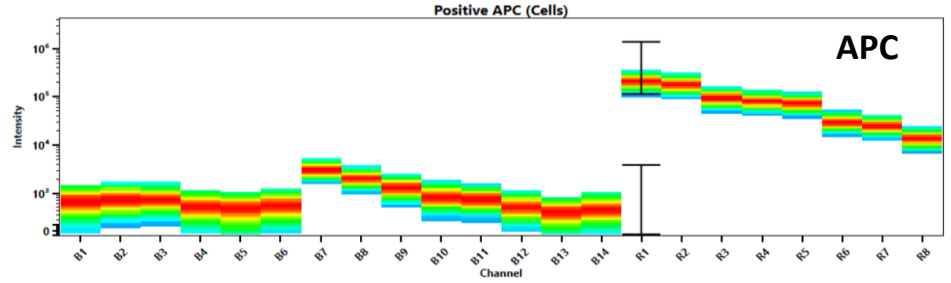


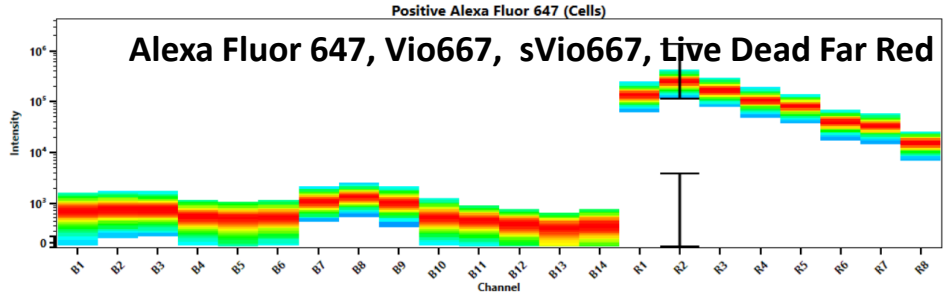


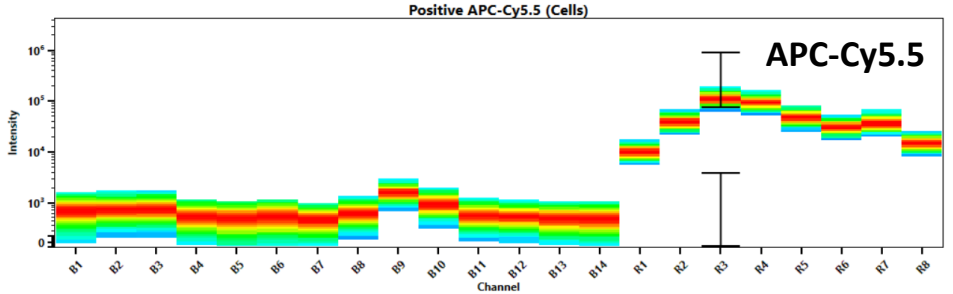


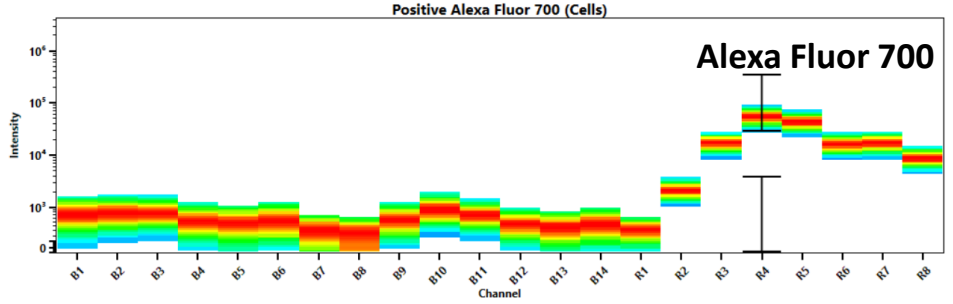


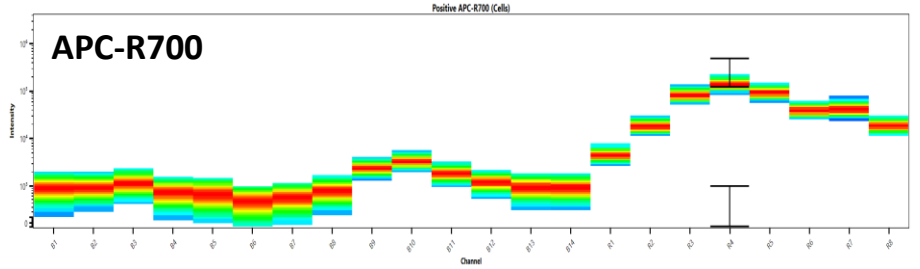
Red Laser Excitable Dyes with Unique Signatures

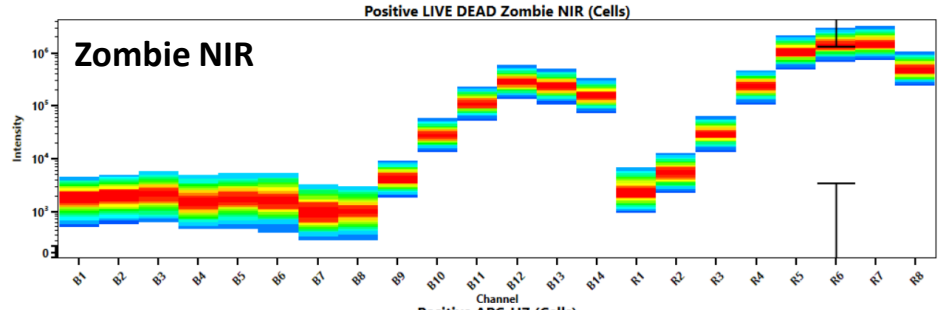


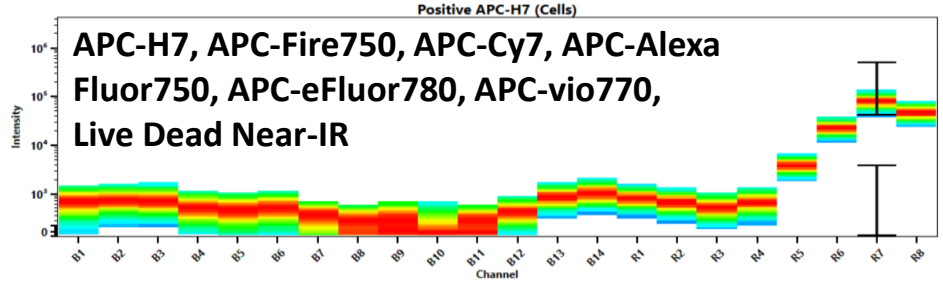












Fluorochrome Peak Channels

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

Red Excited Fluors	Peak Channel
APC	R1
Alexa Fluor 647, Vio 667, sVio 667, Live/Dead Far Red, eFluor 660	R2
APC-Cy5.5	R3
Alexa Fluor 700, APC-R700	R4
APC-Alexa 750, APC/Fire 750, APC-Cy7, APC-Vio 770, APC-eFluor 780, APC-H7, Live/Dead NIR	R7

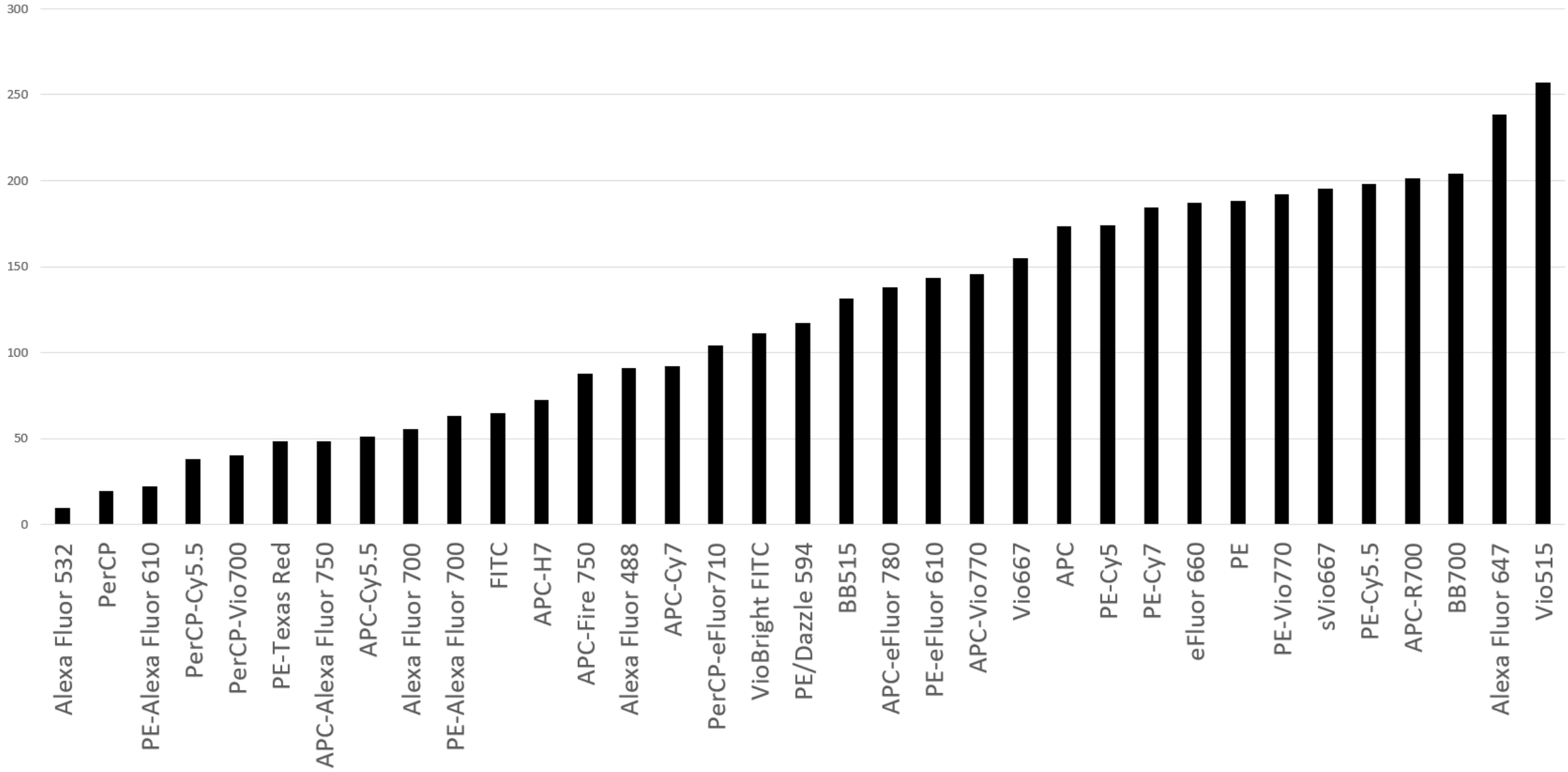
Example of 13 dyes that can be used in combination

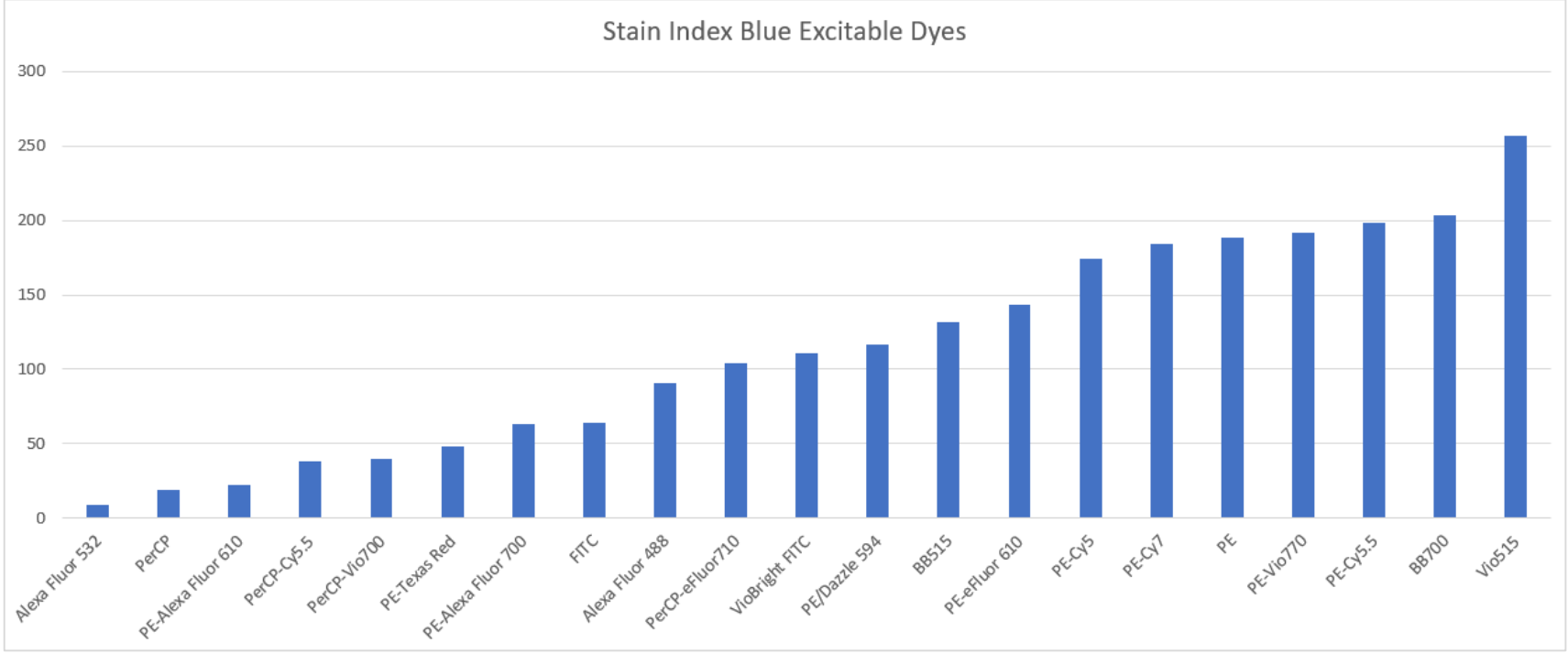
Fluorophore	Fluorophore
BB515	APC
Alexa Fluor 488 or FITC	Alexa Fluor 647
Alexa Fluor 532	APC-R700 or AF700
PE	APC/Fire 750 or equivalent
PE/Dazzle 594 or equivalent	
PE-Cy5	
PerCP-Cy5.5	
PerCP-eFluor 710	
PE-Cy7	

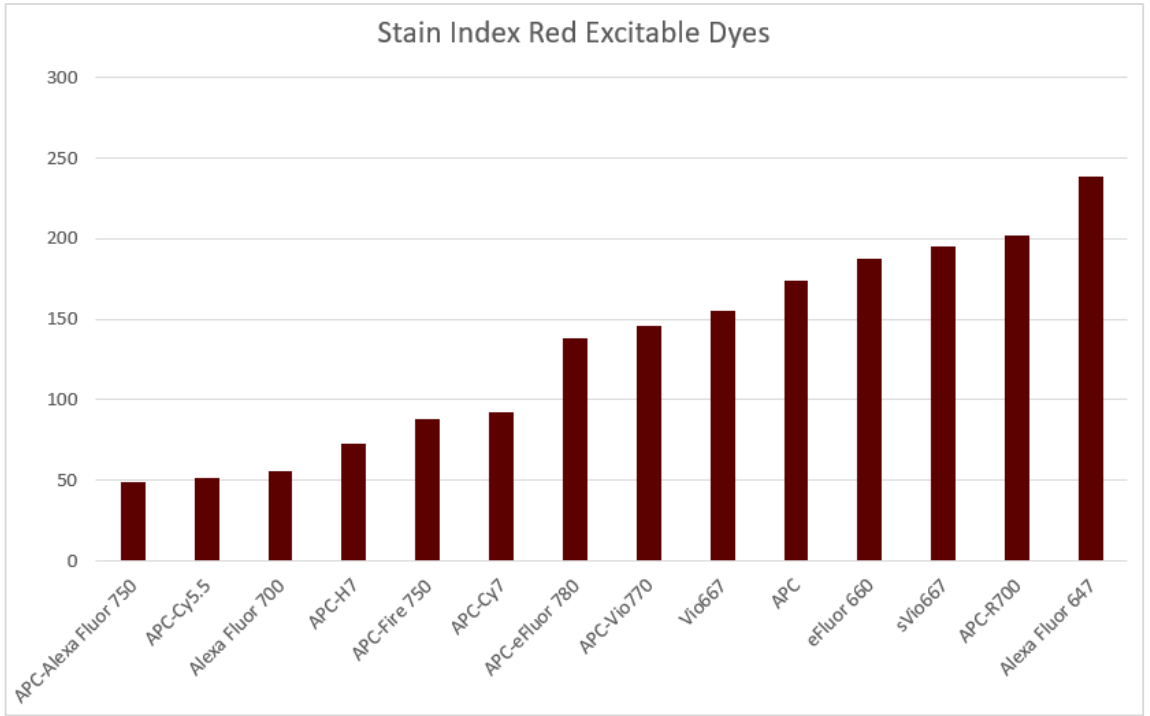
Stain Indexes

Data generated using CD4 staining on human PBMCs

Stain Index Ranking - 36 Dyes




Stain Index Blue Excitable Dyes
300
250
200
150
100
50
0
Alexa Fluor 532
PerCP
PE-Alexa Fluor 610
PerCP-Cy5.5
PerCP-Vio700
PE-Texas Red
PE-Alexa Fluor 700
FITC
Alexa Fluor 488
PerCP-eFluor710
VioBright FITC
PE/Dazzle 594
BB515
PE-eFluor 610
PE-Cy5
PE-Cy7
PE
PE-Vio770
PE-Cy5.5
BB700
Vio515

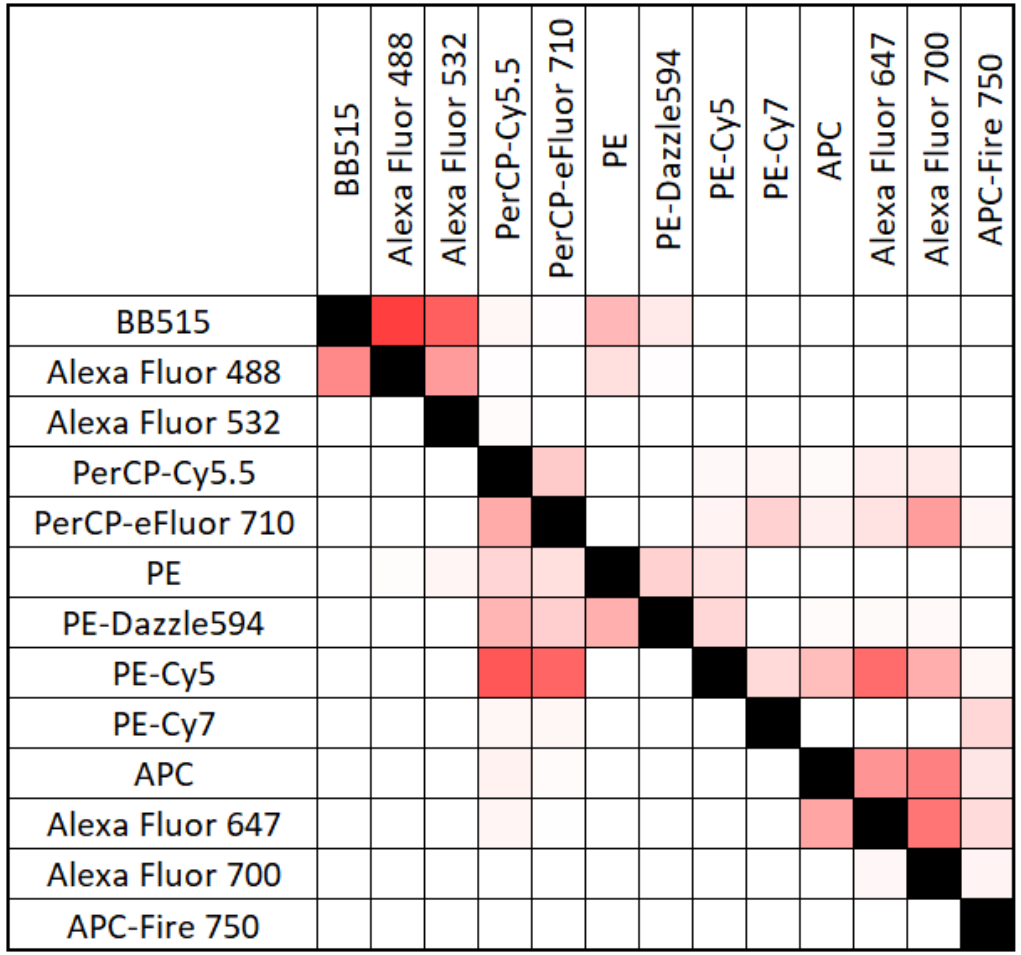

Stain Index Red Excitable Dyes
300
250
200
150
100
50
0
APC-Alexa Fluor 750
APC-Cy5.5
Alexa Fluor 700
APC-H7
APC-Fire 750
APC-Cy7
APC-eFluor 780
APC-Vio770
Vio667
APC
eFluor 660
sVio667
APC-R700
Alexa Fluor 647

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 13 Fluors that can be Used in Combination



To read this table: fluor in the row impacts the one in the column. Pink means the fluor in that row has spread into the dye in the column (for example BB515 into Alexa Fluor 488). Areas in dark pink are 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