



**CYTEK**  
TRANSCEND THE CONVENTIONAL

# Cytek® Aurora cFluor™ Selection Guidelines 5 Laser 16UV-16V-14B-10YG-8R

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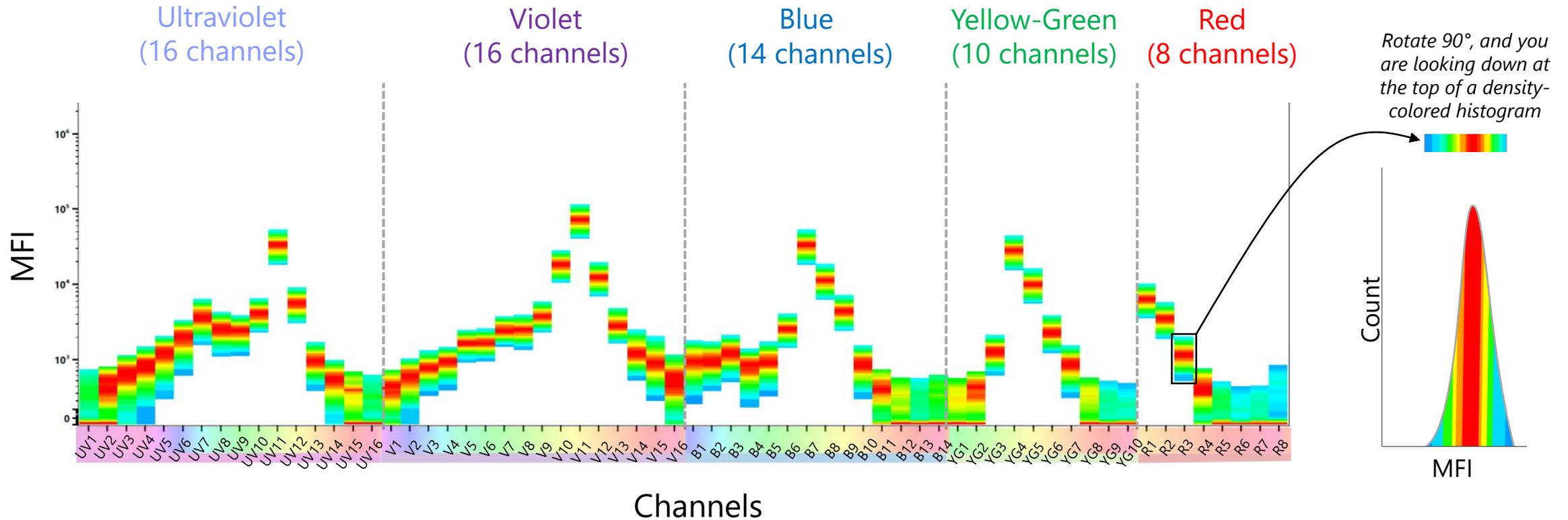
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# HOW TO READ FLUOROCHROME FULL SPECTRUM SIGNATURES

- Dyes could potentially be used in combination if they have unique spectral signatures.
- Look for dyes with unique spectra and consider spread introduced by the dyes when designing and validating multicolor panels (see page 63).

# How to Read Full Spectrum Fluorochrome Signatures



*This dye is excited by all 5 lasers. The y-axis shows median fluorescence intensity (MFI). The x-axis shows each detector on the system organized first by laser line (UV, V, etc.) with solid color bars beneath the chart. Then, within each laser line, detectors are organized from lowest wavelength to highest wavelength (e.g. UV1 through UV16), indicated by the rainbow gradient bar. For each detector, the MFI distribution of all positive events is represented by the red/yellow/green/blue rectangle, where red is the highest density of events and greens and blues are lower densities of events. The peak channel is in channel V11, and it has secondary emission in channels UV11, B7, YG4 and R1. Based on this information, expect this dye to introduce spread into dyes emitting at similar wavelengths.*

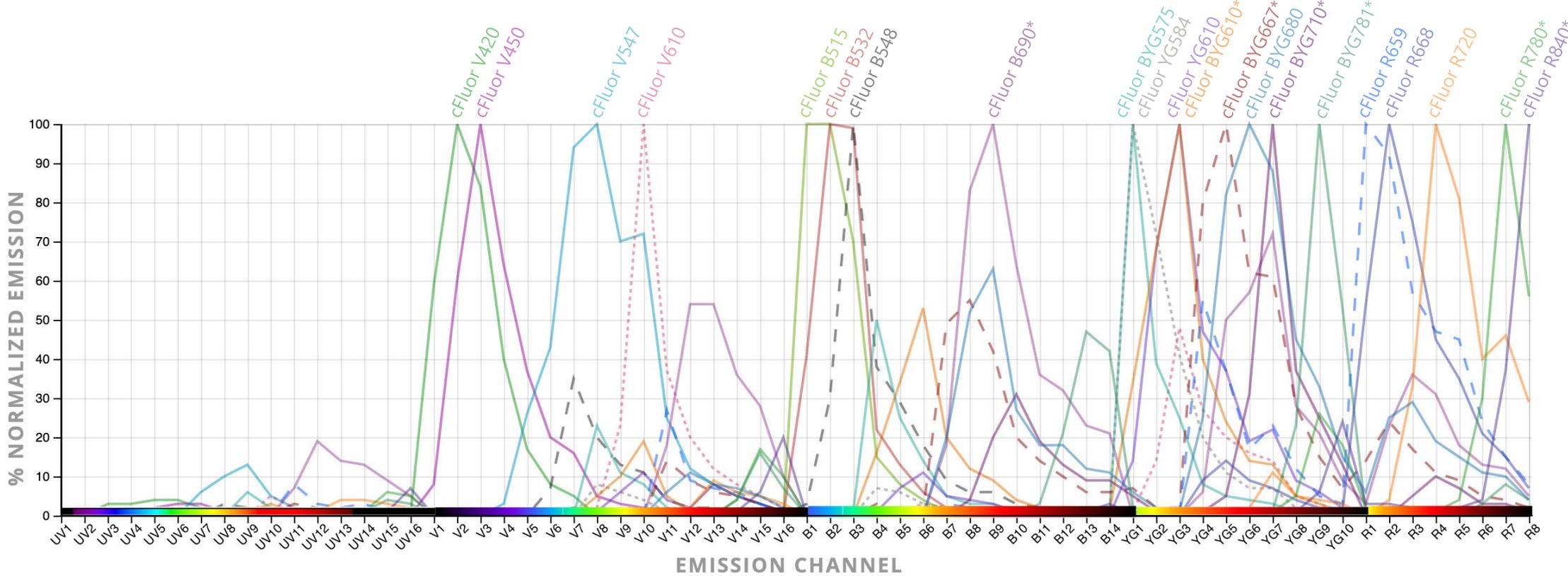
# INTRODUCTION TO CFLUORS

Understanding the cFluor naming scheme:

- cFluor = **C**ytek **F**luoro**c**hrome
- Laser(s) that efficiently excite the fluorochrome, and the fluorochrome's maximum emission wavelength, are given in the name. Here are 2 examples:
  - cFluor R720: Maximally excited by the **R**ed laser, and maximally emits at **720** nm
  - cFluor BYG680: Maximally excited by the **B**lue and **Y**ellow-**G**reen lasers, and maximally emits at **680** nm

# cFluor Normalized Spectra Overlays

Created using Cytek's Spectrum Viewer: [spectrum.cytekbio.com](http://spectrum.cytekbio.com)

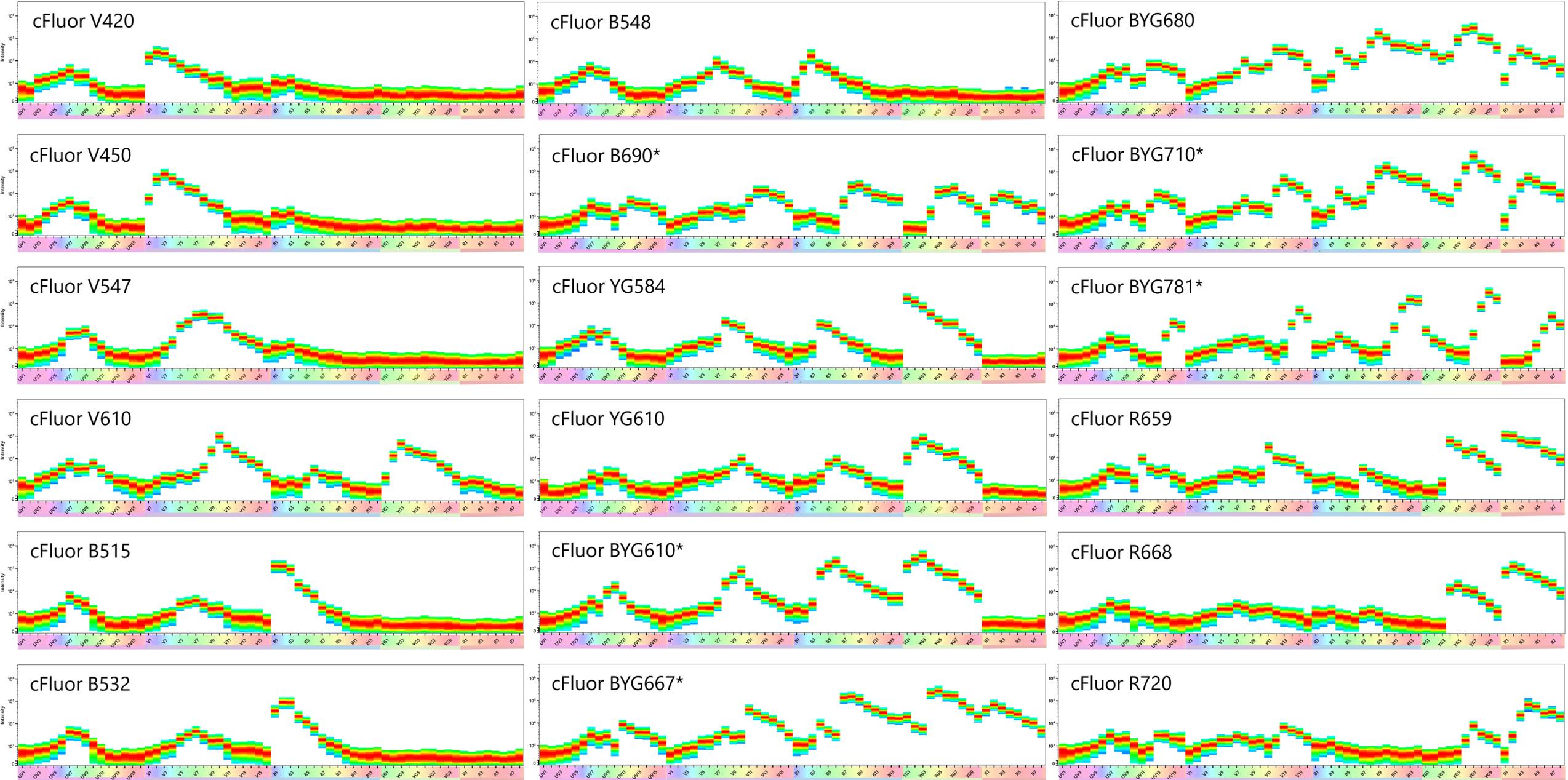


\* Tandem dye

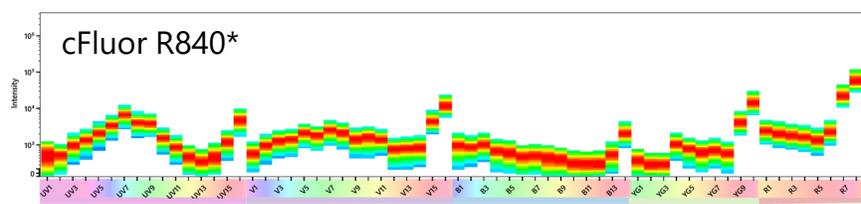
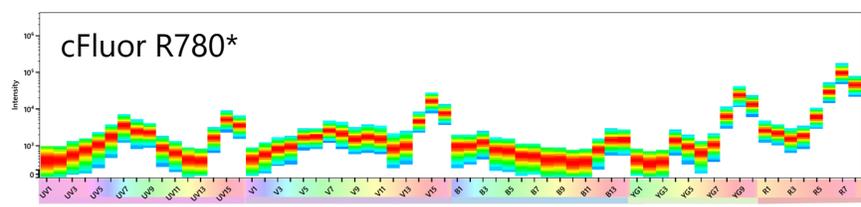
# cFluor Full Spectrum Signatures

*Generated using Human PBMCs Single Stained with CD4*





\* Tandem dye



\* Tandem dye

# Comparison of cFluors and Similar Dyes

# cFluor Equivalent Emission Dyes

| cFluor         | 1° Excitation Laser | Peak Emission | Peak Channel | Dye With Similar Emission | Similarity™ Index |
|----------------|---------------------|---------------|--------------|---------------------------|-------------------|
| cFluor V420    | Violet              | 420 nm        | V2           | Super Bright 436          | 1                 |
| cFluor V450    | Violet              | 450 nm        | V3           | Pacific Blue              | 1                 |
| cFluor V547    | Violet              | 547 nm        | V8           | Pacific Orange            | 1                 |
| cFluor V610    | Violet              | 610 nm        | V10          | No Spectral Match         | N/A               |
| cFluor B515    | Blue                | 515 nm        | B1           | Brilliant Blue™ (BB) 515  | 1                 |
| cFluor B532    | Blue                | 532 nm        | B3           | No Spectral Match         | N/A               |
| cFluor B548    | Blue                | 548 nm        | B3           | Spark Blue™ 550           | 1                 |
| cFluor B690*   | Blue                | 690 nm        | B9           | PerCP-Cy™5.5              | 1                 |
| cFluor YG584   | Yellow-Green        | 584 nm        | YG1          | No Spectral Match         | N/A               |
| cFluor YG610   | Yellow-Green        | 610 nm        | YG3          | No Spectral Match         | N/A               |
| cFluor BYG575  | Blue, Yellow-Green  | 575 nm        | YG1          | PE                        | 1                 |
| cFluor BYG610* | Blue, Yellow-Green  | 610 nm        | YG3, B6      | PE-Dazzle™ 594            | 0.98              |
| cFluor BYG667* | Blue, Yellow-Green  | 667 nm        | YG5, B8      | PE-Cy™5                   | 1                 |
| cFluor BYG680  | Blue, Yellow-Green  | 680 nm        | YG6, B9      | No Spectral Match         | N/A               |
| cFluor BYG710* | Blue, Yellow-Green  | 710 nm        | YG7, B10     | PE/Fire™ 700              | 0.95              |
| cFluor BYG781* | Blue, Yellow-Green  | 781 nm        | YG9, B13     | PE-Cy™7                   | 1                 |
| cFluor R659    | Red                 | 659 nm        | R1           | APC                       | 1                 |
| cFluor R668    | Red                 | 668 nm        | R2           | Alexa Fluor® 647          | 1                 |
| cFluor R720    | Red                 | 720 nm        | R4           | Alexa Fluor® 700          | 0.98              |
| cFluor R780*   | Red                 | 780 nm        | R7           | APC/Fire™ 750             | 1                 |
| cFluor R840*   | Red                 | 840 nm        | R8           | APC/Fire™ 810             | 1                 |

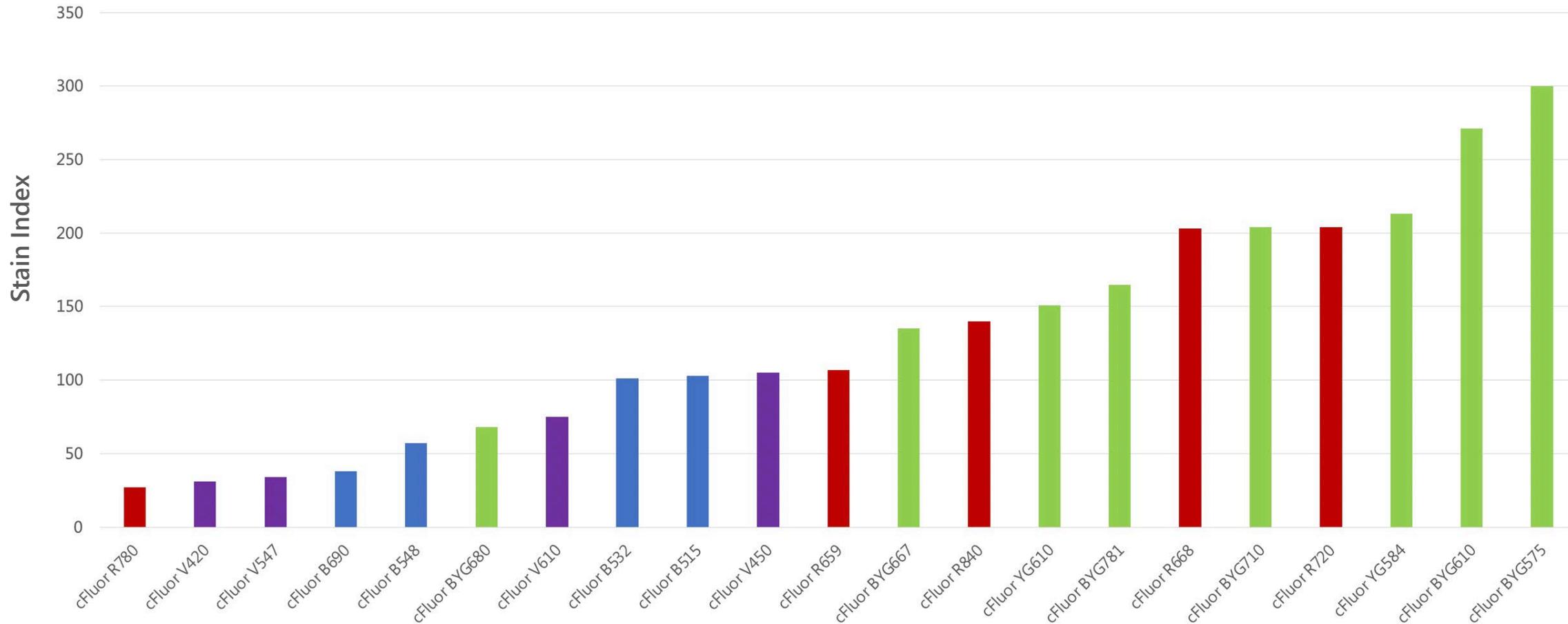
N9-20017 Rev B

\* Tandem dye

# Stain Index Rankings

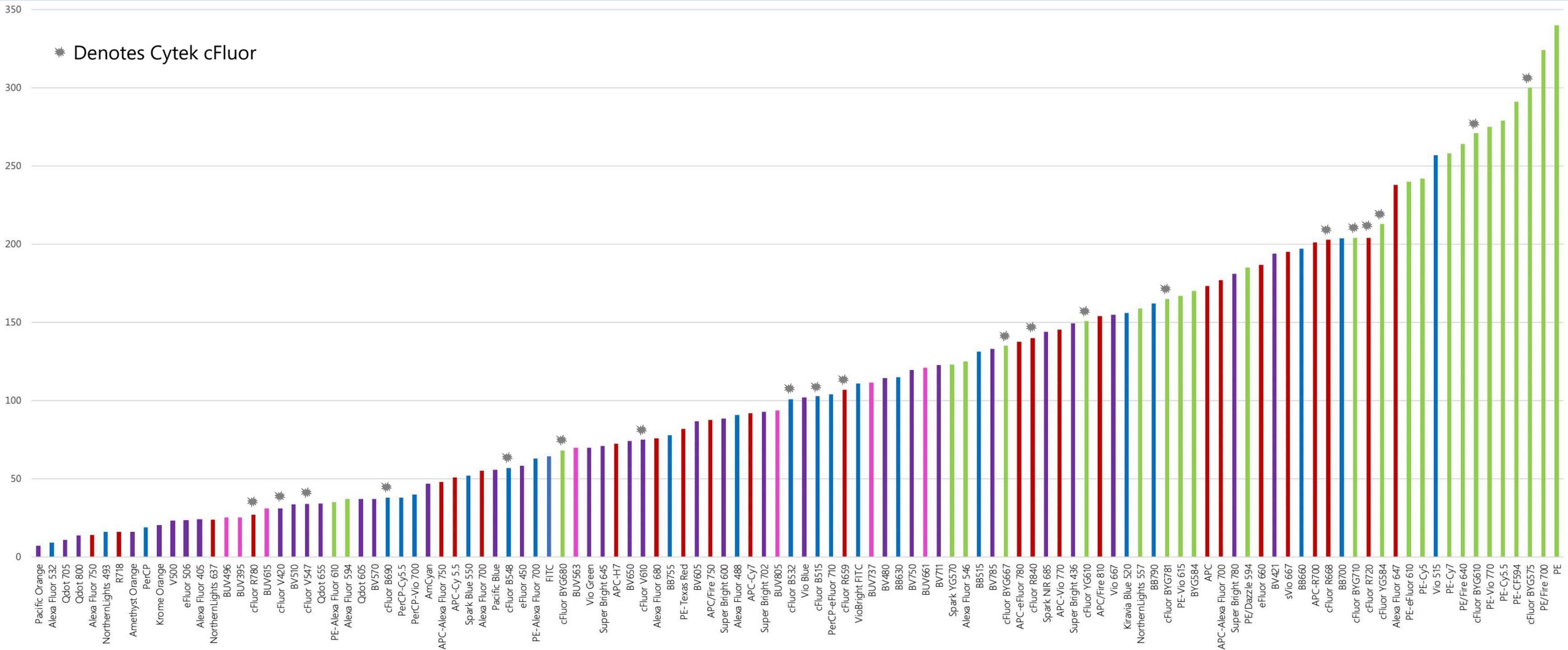
*Each stain index was calculated from single stained CD4 human PBMCs acquired on a Cytex Aurora at CytexAssaySetting*

# cFluor Stain Index Ranking



Bars are color-coded by primary excitation laser(s): Violet, Blue, Yellow-Green, Red

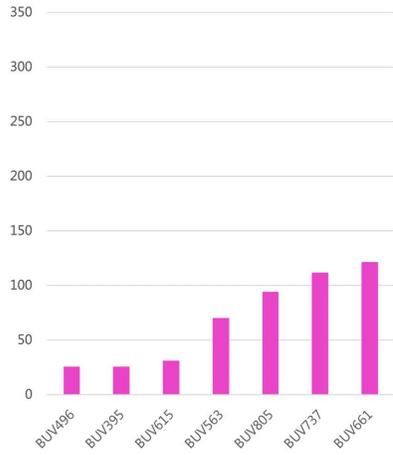
# Stain Index Ranking: 114 Dyes



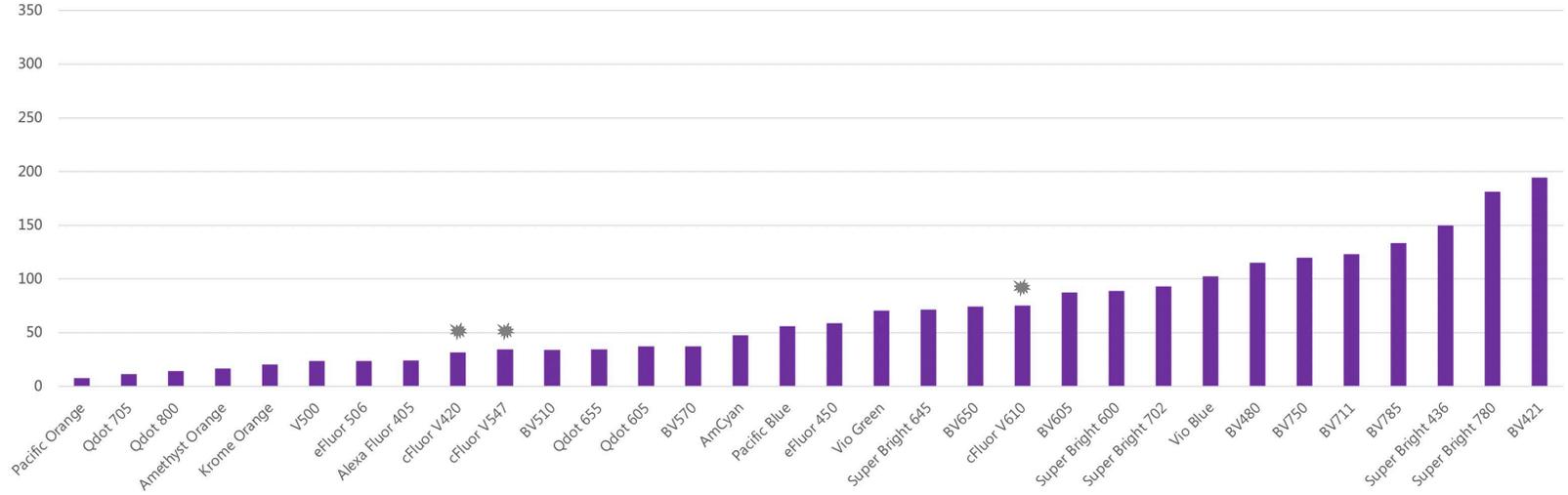
Bars are color-coded by primary excitation laser(s): UV, Violet, Blue, Yellow-Green, Red

# Stain Index by Primary Excitation Laser

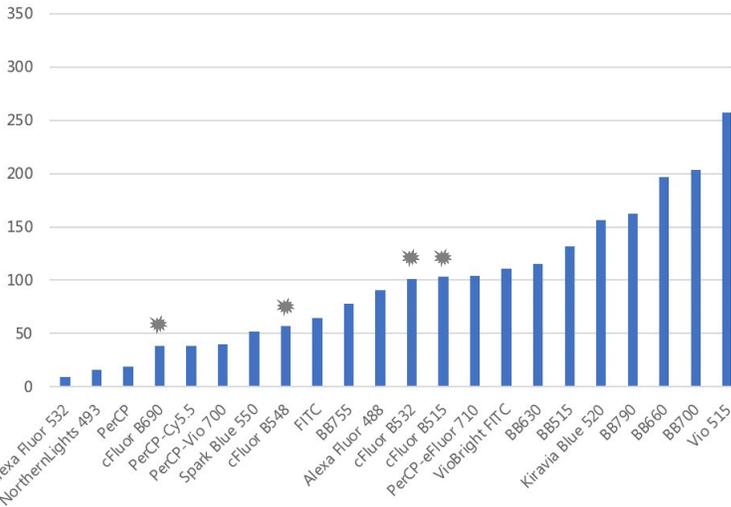
## Stain Index UV Excitable Dyes



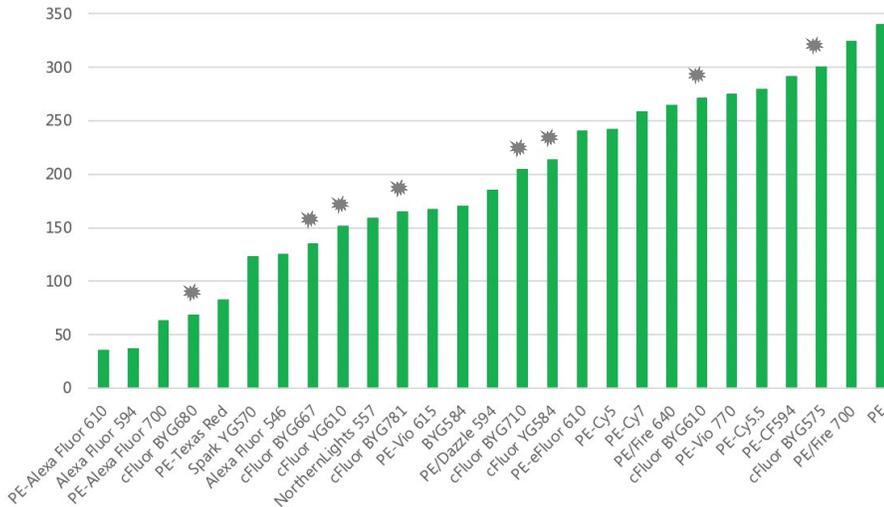
## Stain Index Violet Excitable Dyes



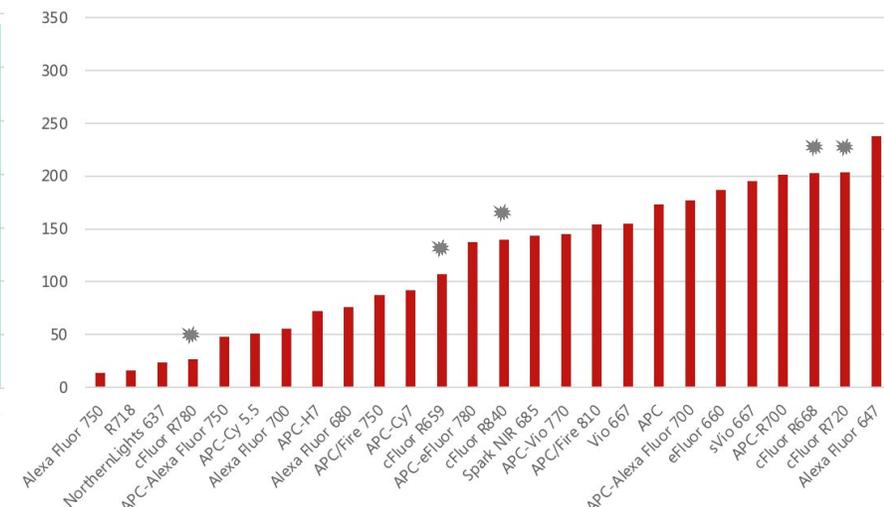
## Stain Index Blue Excitable Dyes



## Stain Index Yellow-Green Excitable Dyes



## Stain Index Red Excitable Dyes



\* Denotes Cytek cFluor

# OMIP-069 40-COLOR PANEL

Download the OMIP-069 paper and supplementary material from [www.cytekbio.com](http://www.cytekbio.com) under [Resources > Publications](#). Search for OMIP, click the icon that appears, and a merged PDF of the paper + supplemental material will download to your computer.

The screenshot displays the Cytek Biosciences Resources website. At the top, the Cytek logo is on the left, and navigation links for Products, Services, About Us, Resources, Careers, and News are in the center. A Spectrum Viewer button is on the right. Below the navigation is the heading "Cytek Biosciences Resources" and a search bar containing "OMIP". A left-hand sidebar lists categories: All Categories, Bead Lots, Blog, CYTO 2020, Data Sheets, Aurora, cFluor, Fluorochrome Guides, Northern Lights, Instructables, Manuals, Posters, and Publications. The main content area shows a search result for "OMIP-069: Forty-Color Full Spectrum Flow Cytometry Panel for Deep Immunophenotyping of Major Cell Subsets in Human Peripheral Blood". The result includes the authors' names, a "PURPOSE AND APPROPRIATE SAMPLE TYPES" section, and a "Human" tag.

# 40 Dyes Used Together in OMIP-069

| Approximate Emission Wavelength (nm) | UV              | Violet           | Blue             | Yellow-Green       | Red             |
|--------------------------------------|-----------------|------------------|------------------|--------------------|-----------------|
| 395                                  | BUV395          |                  |                  |                    |                 |
| 420                                  |                 | BV421            |                  |                    |                 |
| 440                                  |                 | Super Bright 436 |                  |                    |                 |
| 450                                  | LIVE/DEAD™ Blue | eFluor 450       |                  |                    |                 |
| 480                                  |                 | BV480            |                  |                    |                 |
| 500                                  | BUV496          |                  | BB515            |                    |                 |
| 520                                  |                 | BV510            | FITC             |                    |                 |
| 550                                  |                 | Pacific Orange   | Spark Blue 550   |                    |                 |
| 570                                  | BUV563          | BV570            |                  | PE                 |                 |
| 580                                  |                 |                  |                  | cFluor YG584       |                 |
| 600                                  | BUV615          | BV605            |                  | PE/Dazzle 594      |                 |
| 660                                  | BUV661          | BV650            |                  | PE-Alexa Fluor 610 | APC             |
| 680                                  |                 |                  | PerCP            | PE-Cy5             | Alexa Fluor 647 |
| 690                                  |                 |                  | PerCP-Cy5.5      |                    | Spark NIR 685   |
| 700                                  |                 | BV711            | PerCP-eFluor 710 | PE-Alexa Fluor 700 | APC-R700        |
| 730                                  | BUV737          |                  |                  |                    |                 |
| 750                                  |                 | BV750            |                  |                    |                 |
| 780                                  |                 | BV785            |                  | PE-Cy7             | APC-H7          |
| 800                                  | BUV805          |                  |                  | PE/Fire 810        | APC/Fire 810    |

**NOTE: Careful panel design is needed for this fluorophore combination to work optimally.**

LIVE/DEAD is a trademark of Thermo Fisher Scientific, Inc. Trademarks are the property of their respective owners.



# 40 Dyes Including cFluors

| Approximate Emission Wavelength (nm) | UV             | Violet             | Blue               | Yellow-Green         | Red                |
|--------------------------------------|----------------|--------------------|--------------------|----------------------|--------------------|
| 395                                  | BUV395         |                    |                    |                      |                    |
| 420                                  |                | BV421              |                    |                      |                    |
| 440                                  |                | <b>cFluor V420</b> |                    |                      |                    |
| 450                                  | LIVE/DEAD Blue | <b>cFluor V450</b> |                    |                      |                    |
| 480                                  |                | BV480              |                    |                      |                    |
| 500                                  | BUV496         |                    | <b>cFluor B515</b> |                      |                    |
| 520                                  |                | BV510              | FITC               |                      |                    |
| 550                                  |                | <b>cFluor V547</b> | <b>cFluor B548</b> |                      |                    |
| 570                                  | BUV563         | BV570              |                    | PE                   |                    |
| 580                                  |                |                    |                    | cFluor YG584         |                    |
| 600                                  | BUV615         | BV605              |                    | <b>cFluor BYG610</b> |                    |
| 660                                  | BUV661         | BV650              |                    | PE-Alexa Fluor 610   | APC                |
| 680                                  |                |                    | PerCP              | <b>cFluor BYG667</b> | <b>cFluor R668</b> |
| 690                                  |                |                    | PerCP-Cy5.5        |                      | <b>cFluor R685</b> |
| 700                                  |                | BV711              | PerCP-eFluor 710   | <b>cFluor BYG710</b> | APC-R700           |
| 730                                  | BUV737         |                    |                    |                      |                    |
| 750                                  |                | BV750              |                    |                      |                    |
| 780                                  |                | BV785              |                    | PE-Cy7               | APC-H7             |
| 800                                  | BUV805         |                    |                    | PE/Fire 810          | APC/Fire 810       |

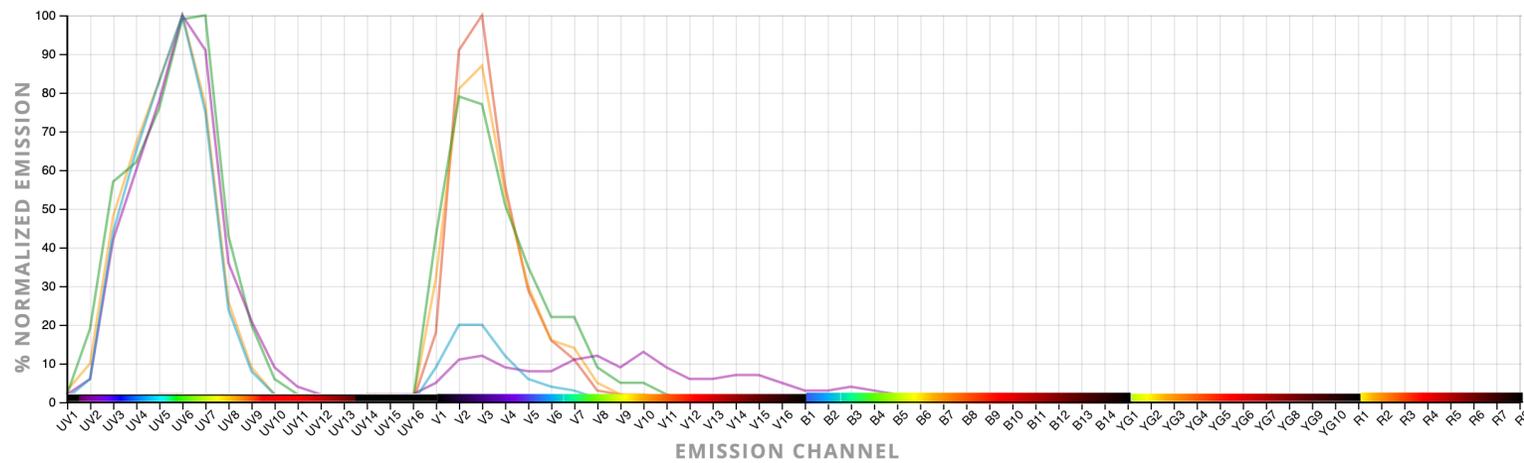


# FLUOROCHROME SIGNATURES

- Dyes can be used in combination if they have unique spectral signatures.
- Look for dyes with unique spectra and consider spread introduced by the dyes when designing multicolor panels (see slide 63).

# Dyes Primarily Excited by the Ultraviolet Laser

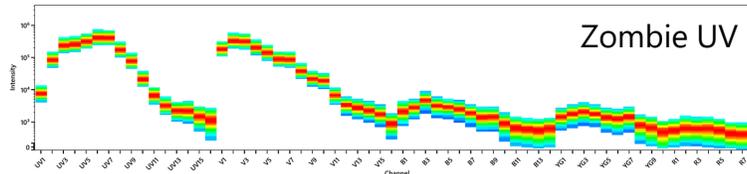
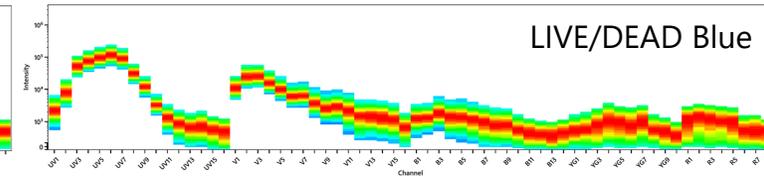
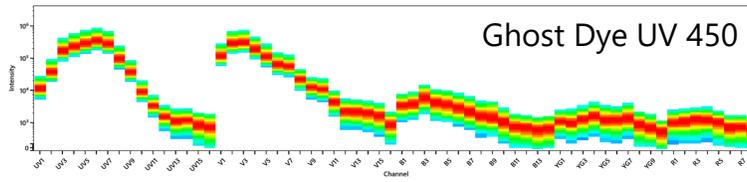
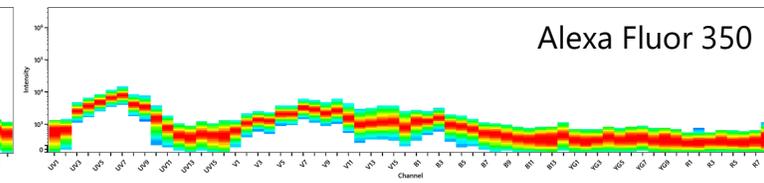
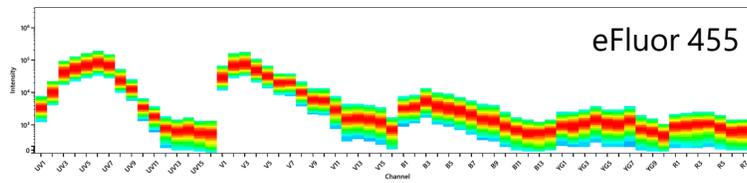
# Ultraviolet Laser Excited Dyes with Similar Signatures



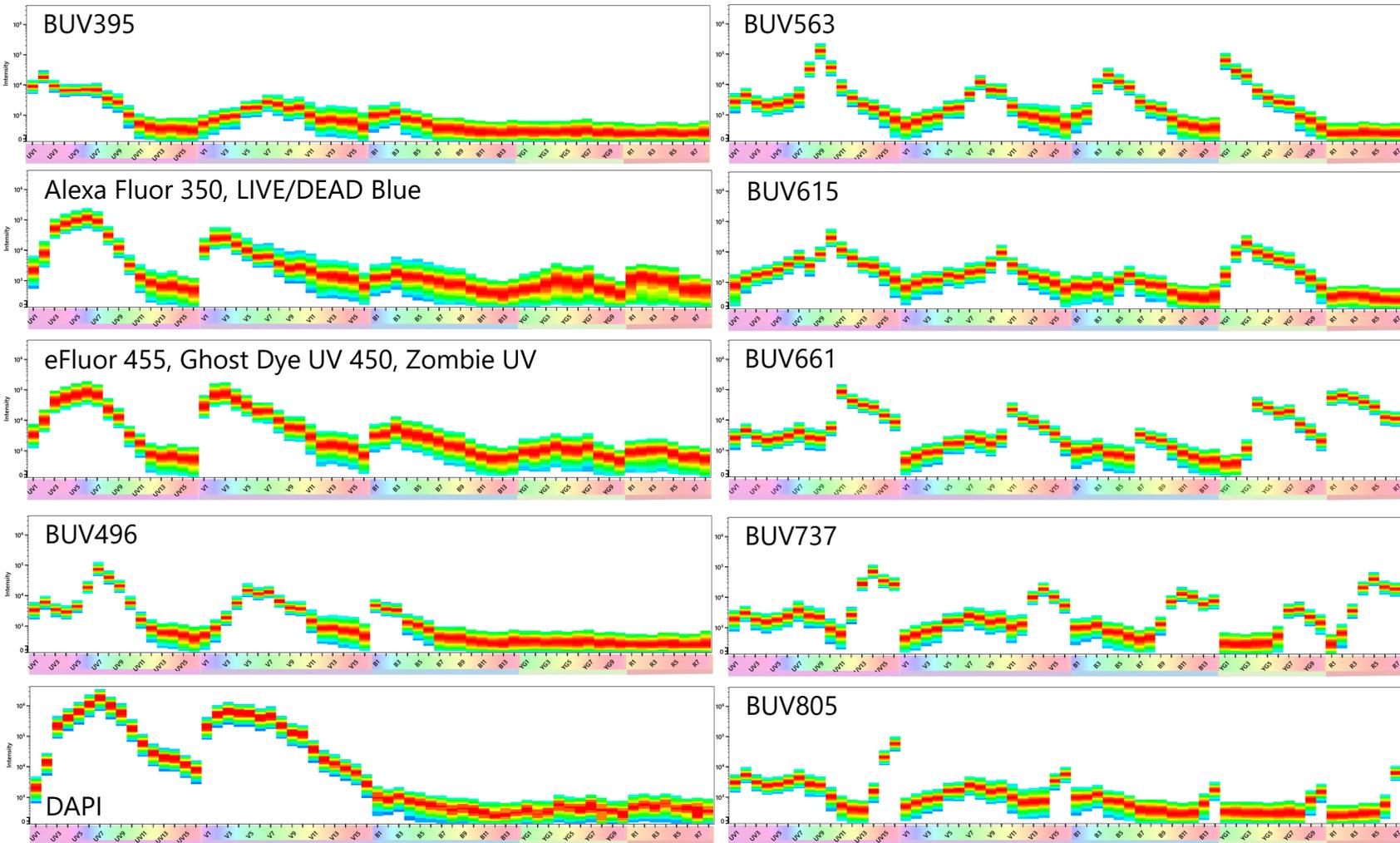
## Similarity™ Indices

|                  |            |                  |           |                 |                |
|------------------|------------|------------------|-----------|-----------------|----------------|
| eFluor 450       | 1          |                  |           |                 |                |
| Ghost Dye UV 450 | 0.63       | 1                |           |                 |                |
| Zombie UV        | 0.59       | 0.99             | 1         |                 |                |
| Alexa Fluor 350  | 0.14       | 0.84             | 0.87      | 1               |                |
| LIVE DEAD Blue   | 0.21       | 0.88             | 0.89      | 0.98            | 1              |
|                  | eFluor 450 | Ghost Dye UV 450 | Zombie UV | Alexa Fluor 350 | LIVE DEAD Blue |

Complexity™ Index: 74.09

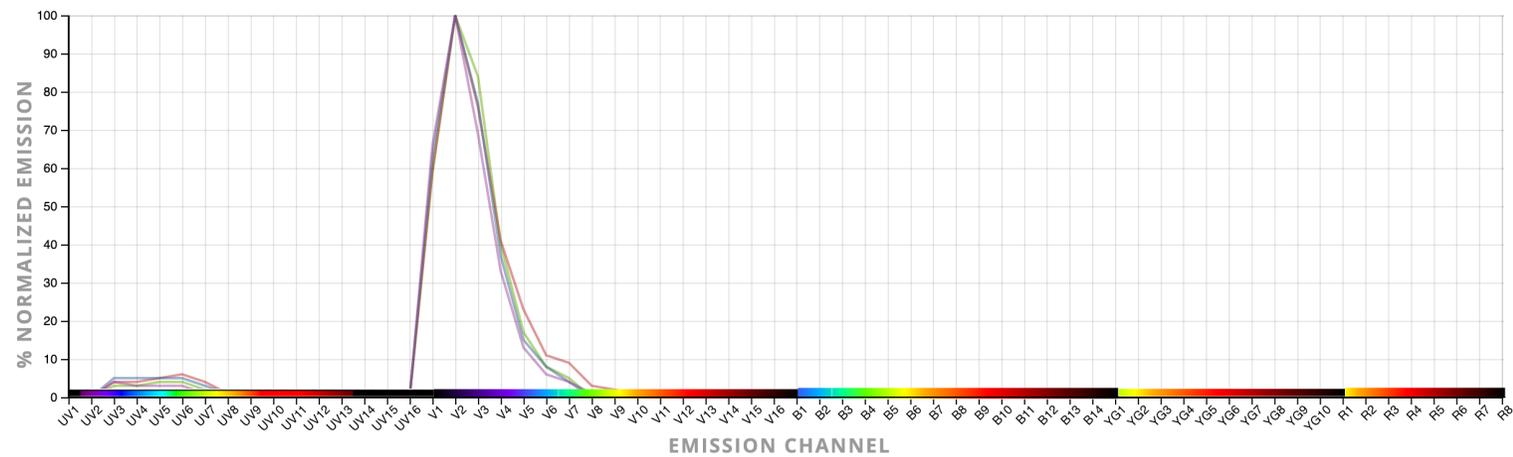


# Ultraviolet Laser Excited Dyes with Unique Signatures



# Dyes Primarily Excited by the Violet Laser

# Violet Laser Excited Dyes with Similar Signatures



While these 4 dyes may look slightly different while acquiring live in SpectroFlo<sup>®</sup>, due to intensity variations, don't be fooled: their normalized spectral overlays from Cytek's<sup>®</sup> Spectrum Viewer above shows that cFluor V420, Super Bright 436, Alexa Fluor 405, and Zombie Violet all have very similar spectra.

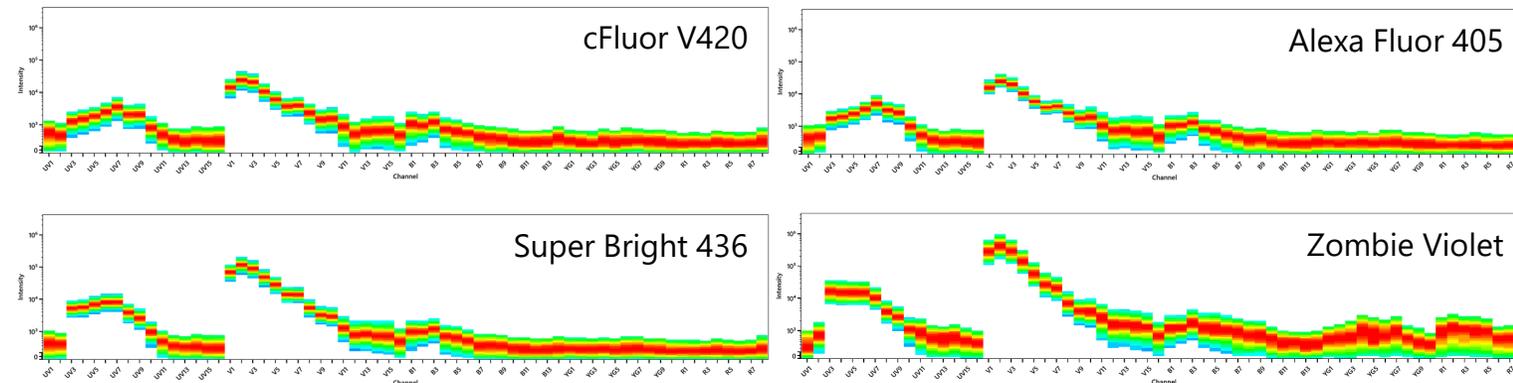
Additionally, the Similarity Indices for each combination of dyes in this set is 0.99 or 1.

Recommendation: choose only 1 of these dyes when designing a multicolor panel.

## Similarity<sup>™</sup> Indices

|                  |             |                  |                 |               |
|------------------|-------------|------------------|-----------------|---------------|
| cFluor V420      | 1           |                  |                 |               |
| Super Bright 436 | 1           | 1                |                 |               |
| Alexa Fluor 405  | 1           | 1                | 1               |               |
| Zombie Violet    | 0.99        | 0.99             | 1               | 1             |
|                  | cFluor V420 | Super Bright 436 | Alexa Fluor 405 | Zombie Violet |

Complexity<sup>™</sup> Index: 97.14

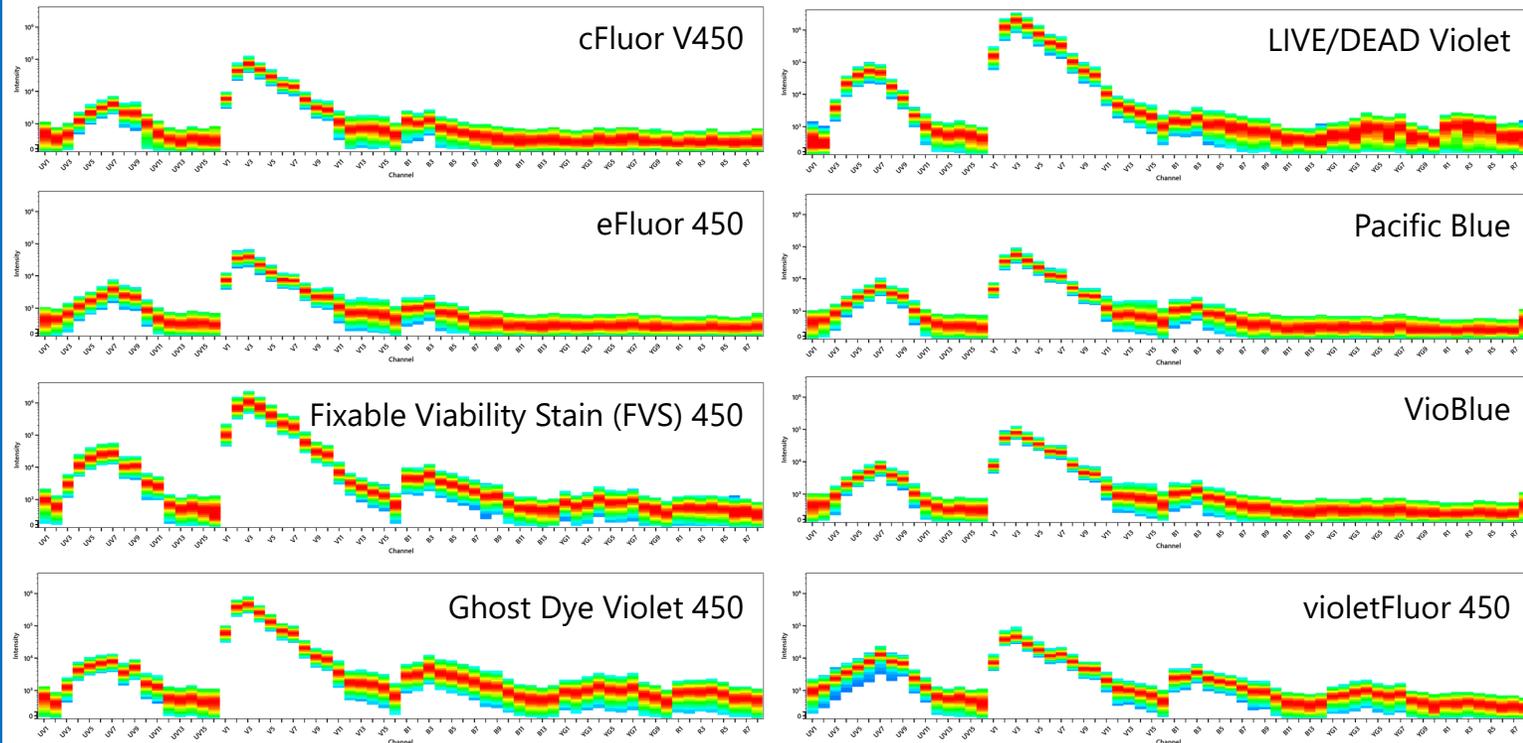
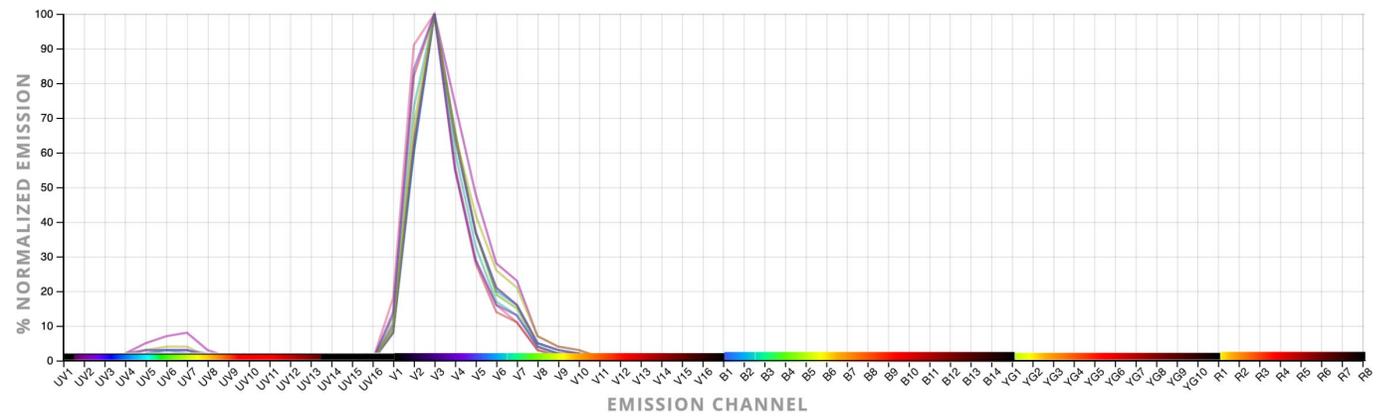


# Violet Laser Excited Dyes with Similar Signatures

## Similarity™ Indices

|                             |                  |             |            |                             |                      |                  |              |      |         |                 |  |  |  |  |  |  |  |  |  |  |
|-----------------------------|------------------|-------------|------------|-----------------------------|----------------------|------------------|--------------|------|---------|-----------------|--|--|--|--|--|--|--|--|--|--|
| CellTrace Violet            | 1                |             |            |                             |                      |                  |              |      |         |                 |  |  |  |  |  |  |  |  |  |  |
| cFluor V450                 | 0.99             | 1           |            |                             |                      |                  |              |      |         |                 |  |  |  |  |  |  |  |  |  |  |
| eFluor 450                  | 0.96             | 0.97        | 1          |                             |                      |                  |              |      |         |                 |  |  |  |  |  |  |  |  |  |  |
| Fixable Viability Stain 450 | 0.99             | 1           | 0.98       | 1                           |                      |                  |              |      |         |                 |  |  |  |  |  |  |  |  |  |  |
| Ghost Dye Violet 450        | 0.96             | 0.98        | 1          | 0.99                        | 1                    |                  |              |      |         |                 |  |  |  |  |  |  |  |  |  |  |
| LIVE DEAD Violet            | 0.99             | 1           | 0.97       | 1                           | 0.98                 | 1                |              |      |         |                 |  |  |  |  |  |  |  |  |  |  |
| Pacific Blue                | 0.99             | 1           | 0.98       | 1                           | 0.98                 | 1                | 1            |      |         |                 |  |  |  |  |  |  |  |  |  |  |
| V450                        | 0.98             | 0.99        | 0.99       | 1                           | 1                    | 0.99             | 1            | 1    |         |                 |  |  |  |  |  |  |  |  |  |  |
| VioBlue                     | 1                | 1           | 0.98       | 1                           | 0.98                 | 1                | 1            | 0.99 | 1       |                 |  |  |  |  |  |  |  |  |  |  |
| violetFluor 450             | 0.97             | 0.98        | 1          | 0.98                        | 1                    | 0.98             | 0.98         | 1    | 0.98    | 1               |  |  |  |  |  |  |  |  |  |  |
|                             | CellTrace Violet | cFluor V450 | eFluor 450 | Fixable Viability Stain 450 | Ghost Dye Violet 450 | LIVE DEAD Violet | Pacific Blue | V450 | VioBlue | violetFluor 450 |  |  |  |  |  |  |  |  |  |  |

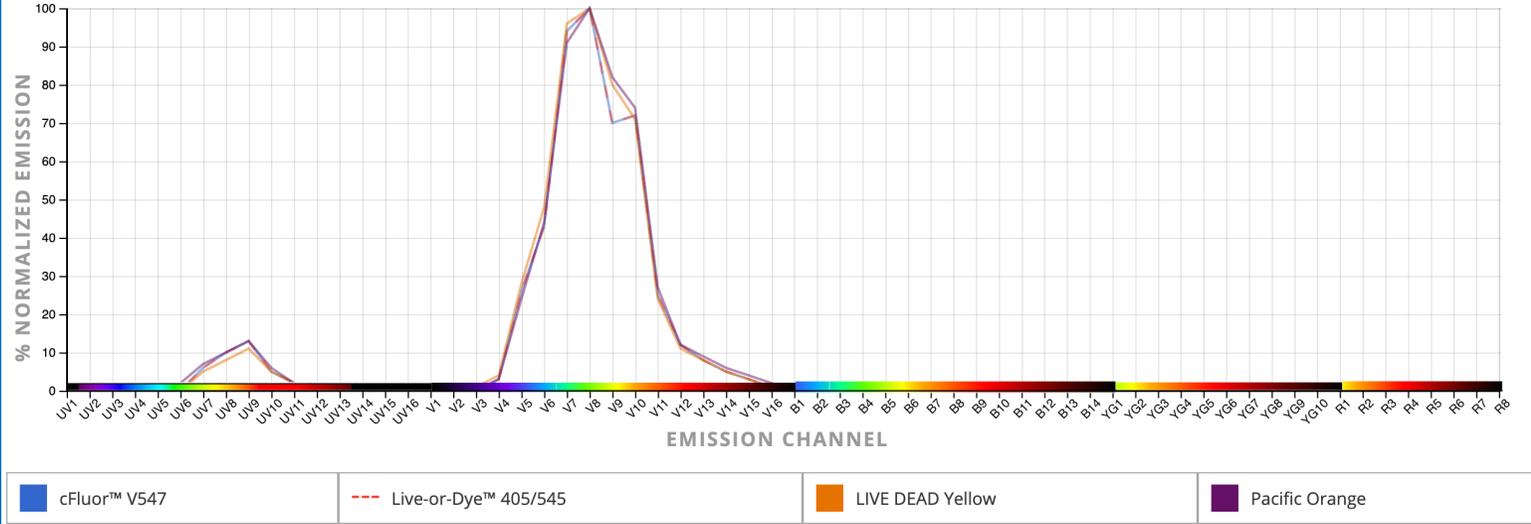
Complexity™ Index: 1421.56



CellTrace Violet, V450 data not shown

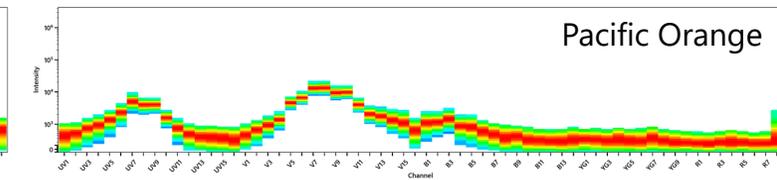
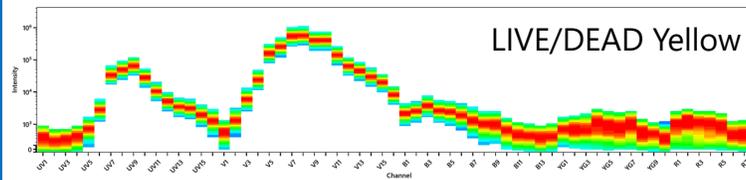
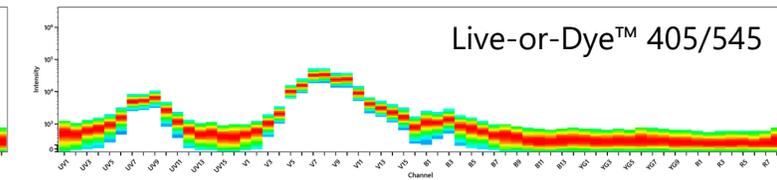
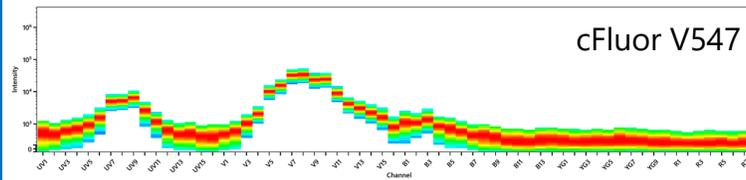


# Violet Laser Excited Dyes with Similar Signatures

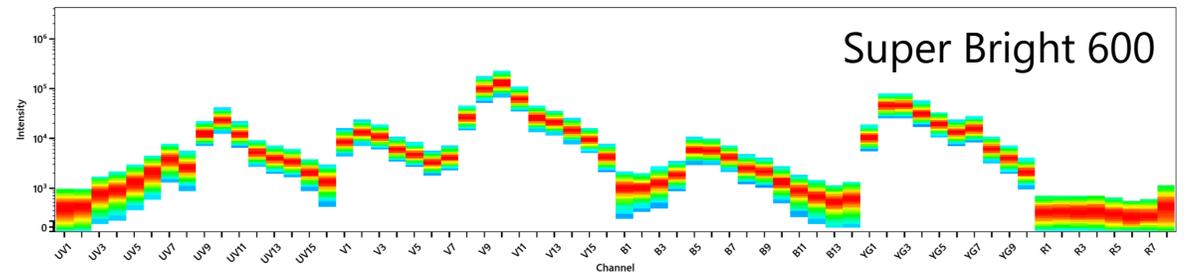
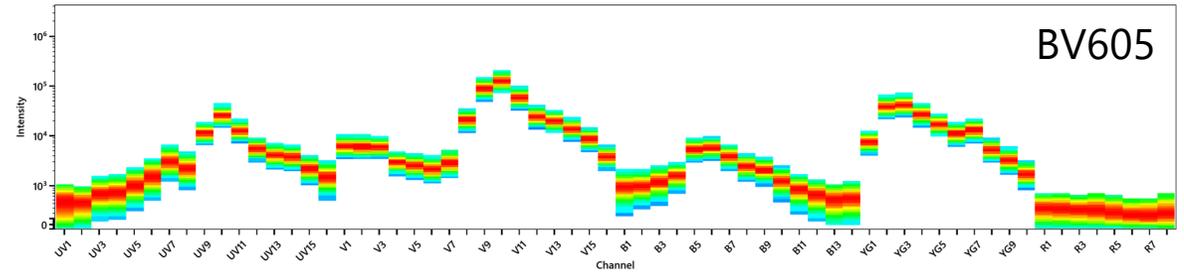
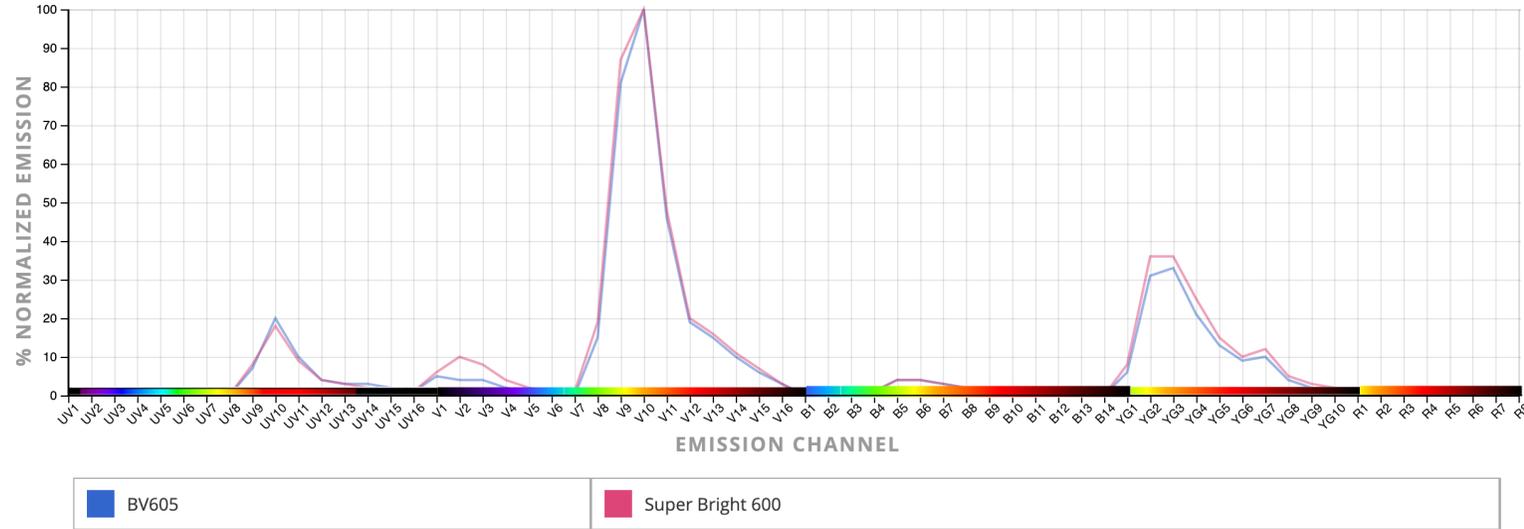


## Similarity™ Indices

|                             |             |                     |                  |                |
|-----------------------------|-------------|---------------------|------------------|----------------|
| cFluor V547                 | 1           |                     |                  |                |
| Live-or-Dye 405/545         | 1           | 1                   |                  |                |
| LIVE DEAD Yellow            | 1           | 1                   | 1                |                |
| Pacific Orange              | 1           | 1                   | 1                | 1              |
|                             | cFluor V547 | Live-or-Dye 405/545 | LIVE DEAD Yellow | Pacific Orange |
| Complexity™ Index: 32611940 |             |                     |                  |                |



# Violet Laser Excited Dyes with Similar Signatures



## Similarity™ Indices

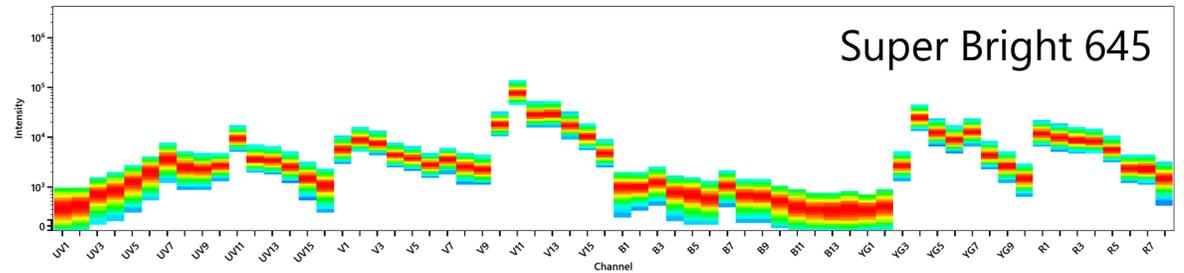
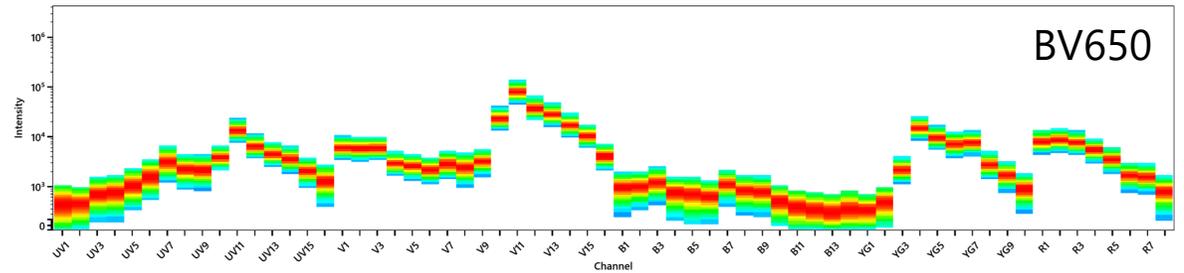
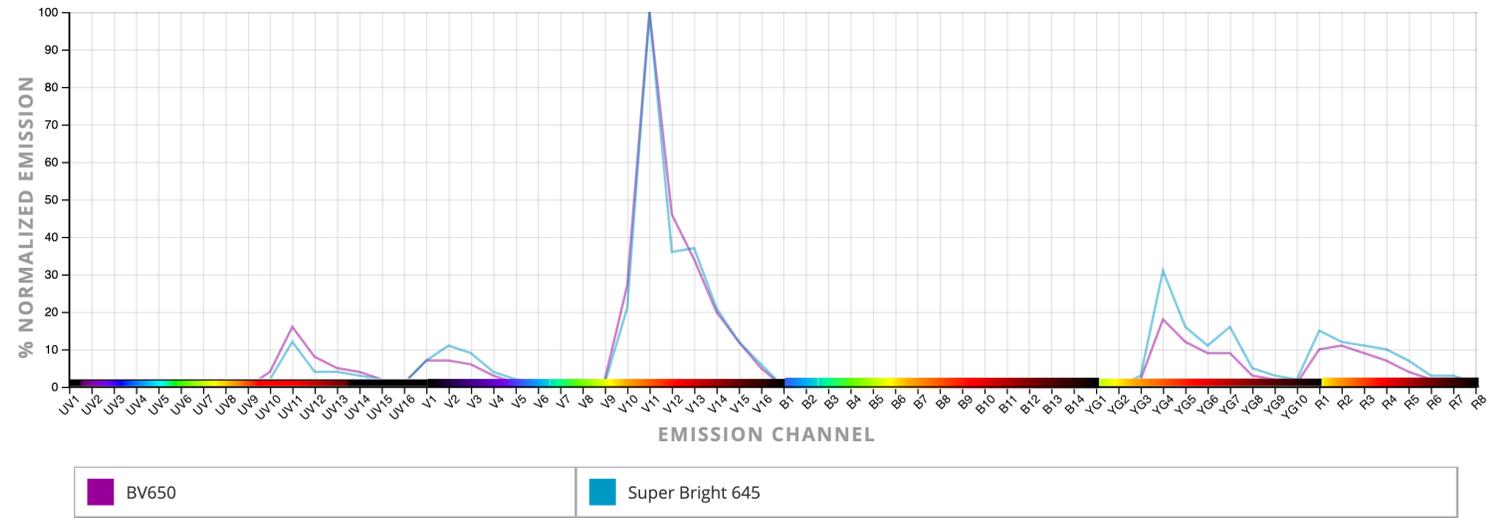
|                          |       |                  |
|--------------------------|-------|------------------|
| BV605                    | 1     |                  |
| Super Bright 600         | 1     | 1                |
|                          | BV605 | Super Bright 600 |
| Complexity™ Index: 26.89 |       |                  |

# Violet Laser Excited Dyes with Similar Signatures

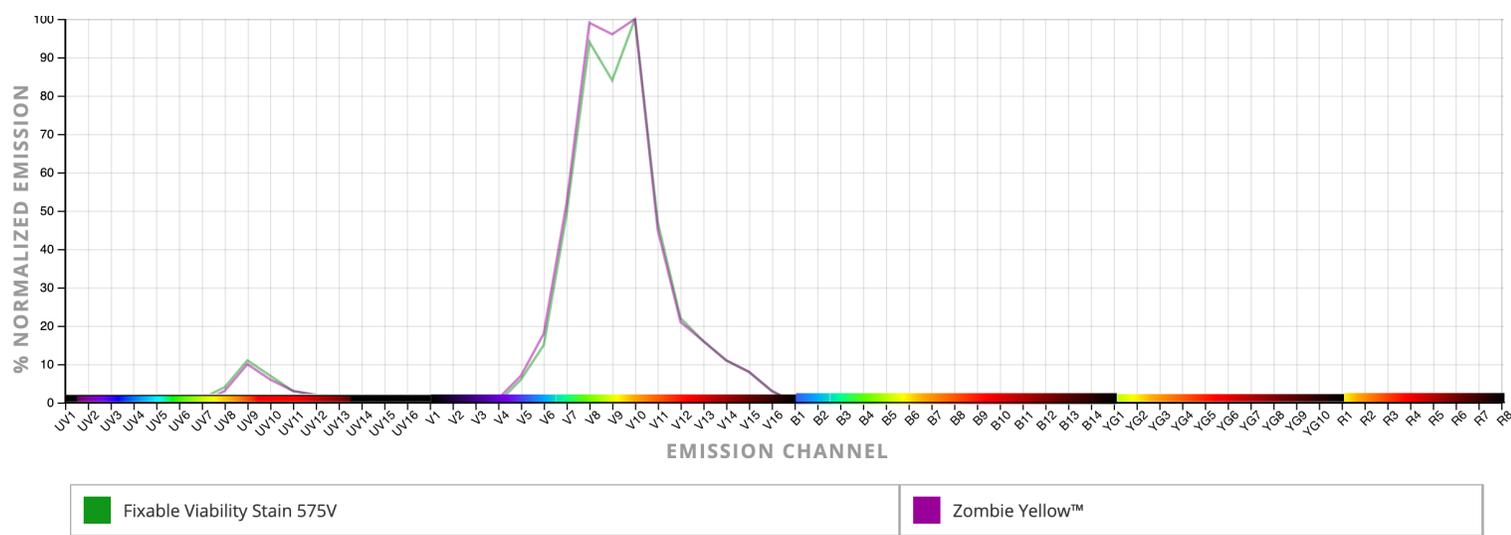
Similarity™ Indices

|                  |       |                  |
|------------------|-------|------------------|
| BV650            | 1     |                  |
| Super Bright 645 | 0.98  | 1                |
|                  | BV650 | Super Bright 645 |

Complexity™ Index: 11.27



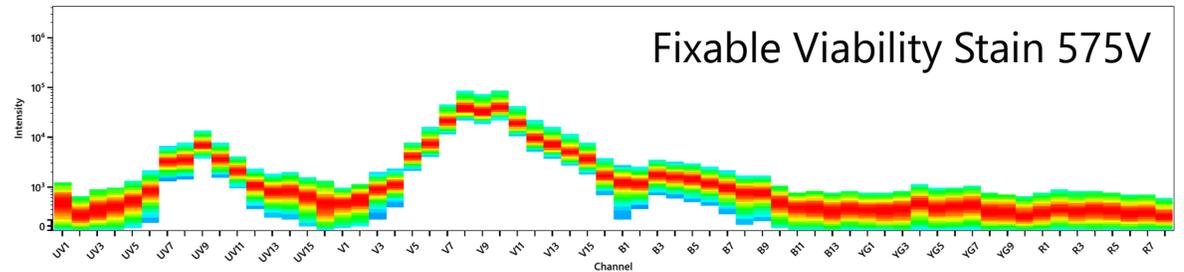
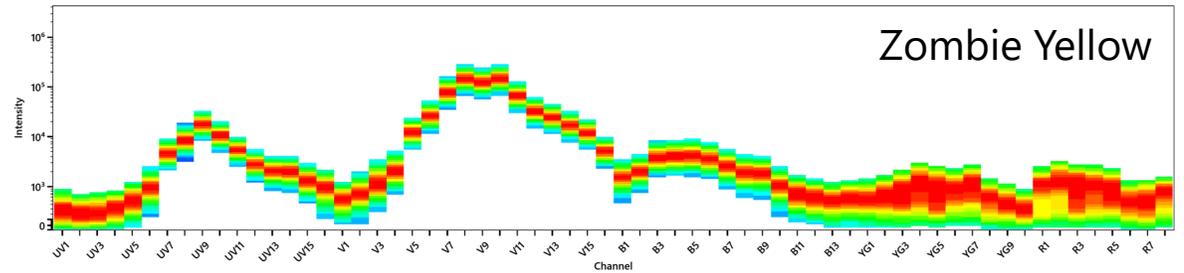
# Violet Laser Excited Dyes with Similar Signatures



Similarity™ Indices

|                              |                              |               |
|------------------------------|------------------------------|---------------|
| Fixable Viability Stain 575V | 1                            |               |
| Zombie Yellow                | 1                            | 1             |
|                              | Fixable Viability Stain 575V | Zombie Yellow |

Complexity™ Index: 32.68

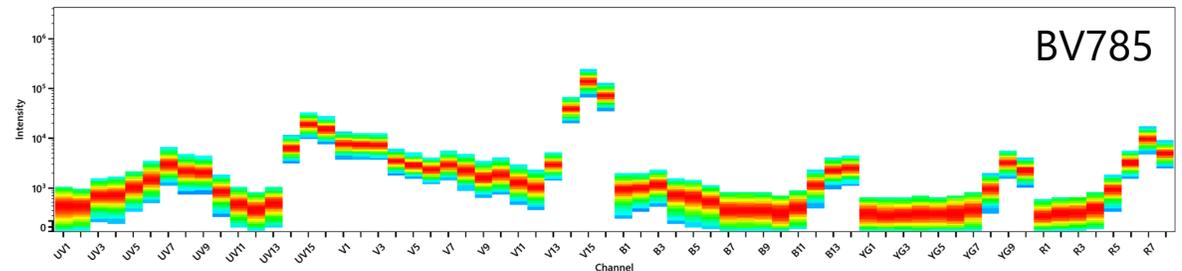
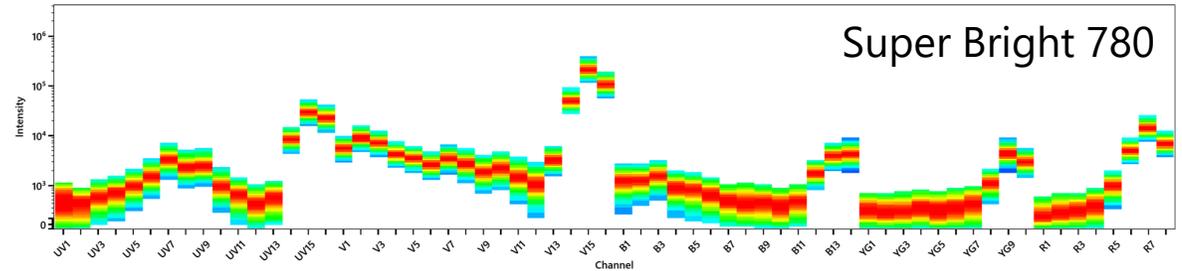
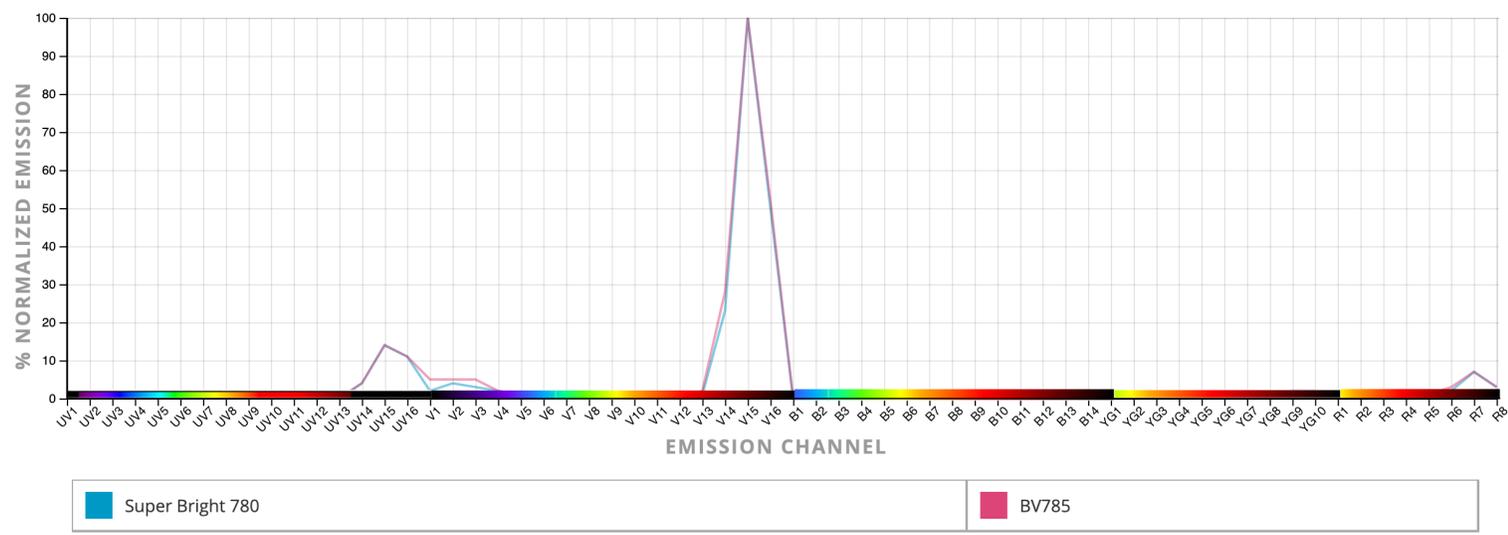


# Violet Laser Excited Dyes with Similar Signatures

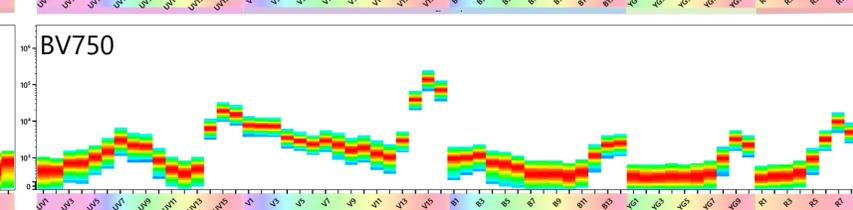
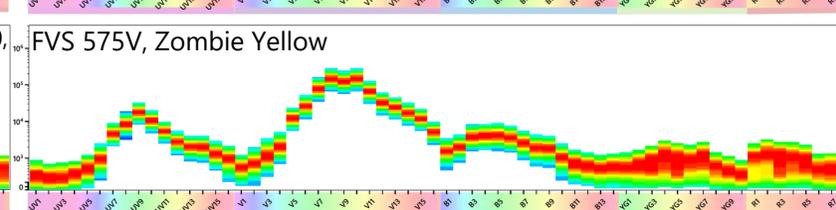
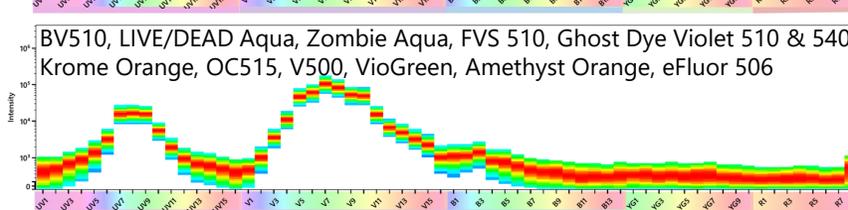
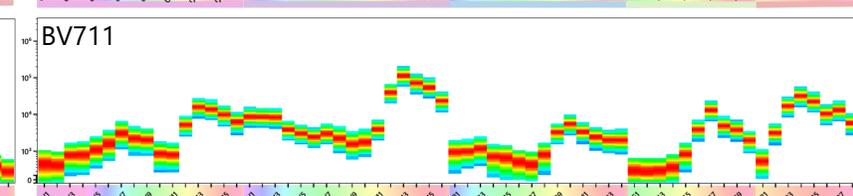
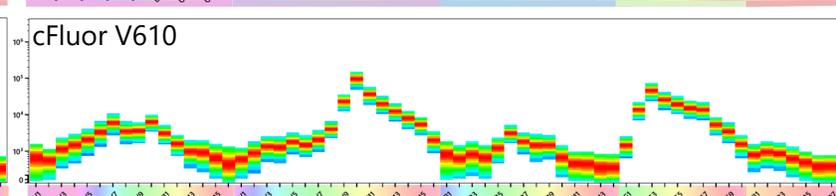
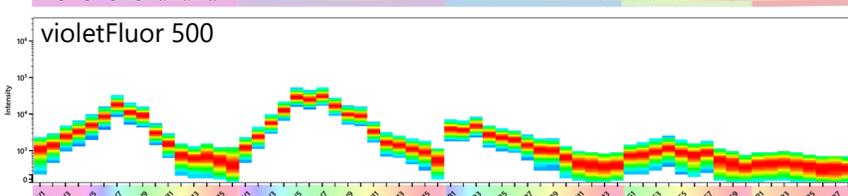
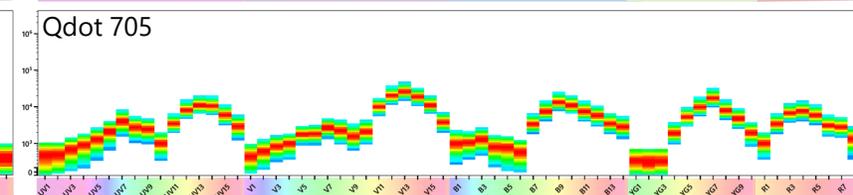
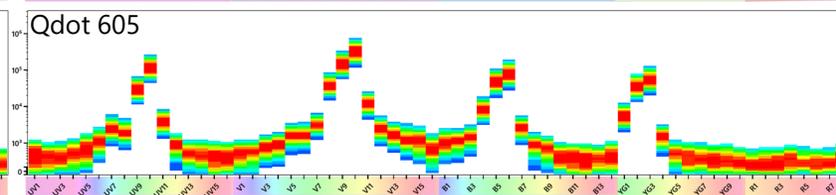
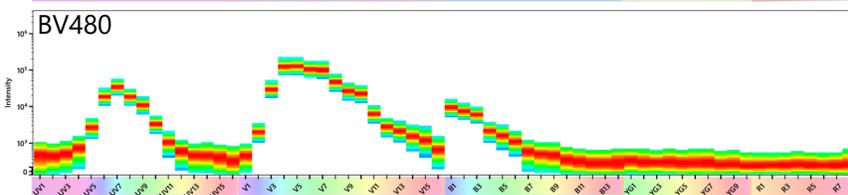
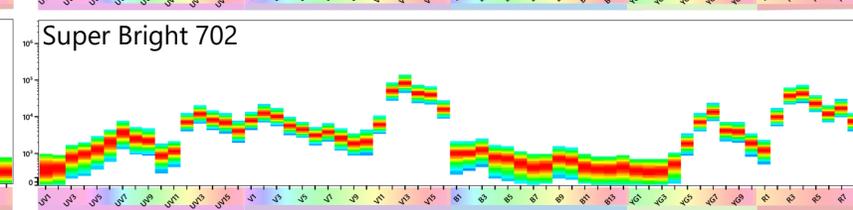
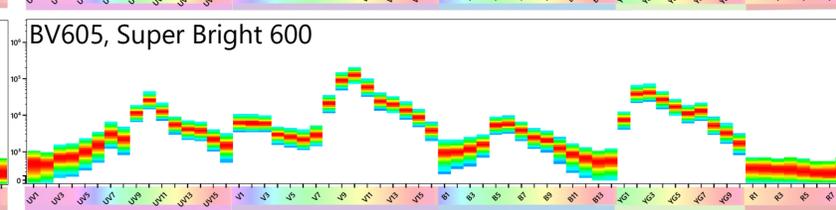
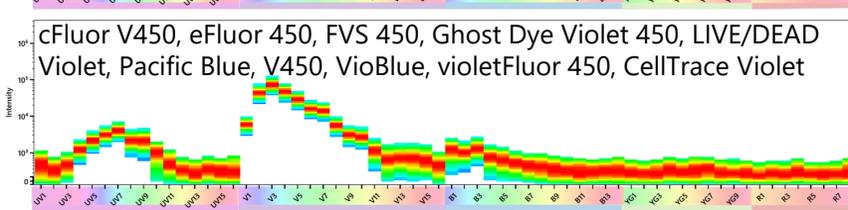
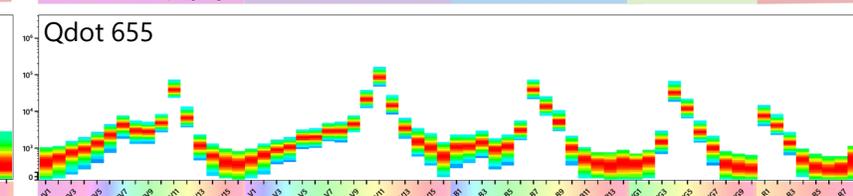
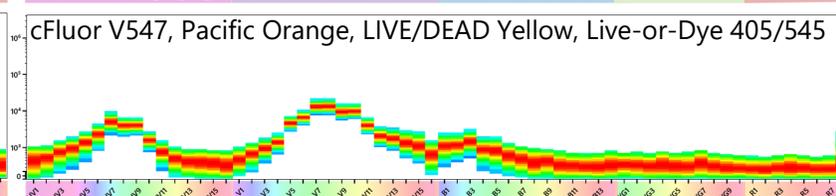
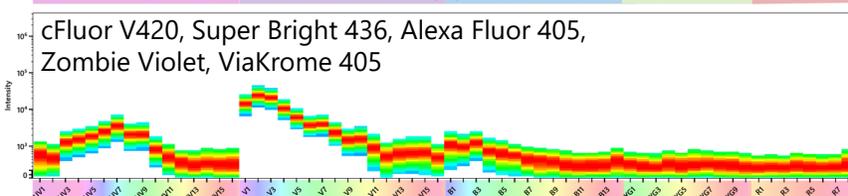
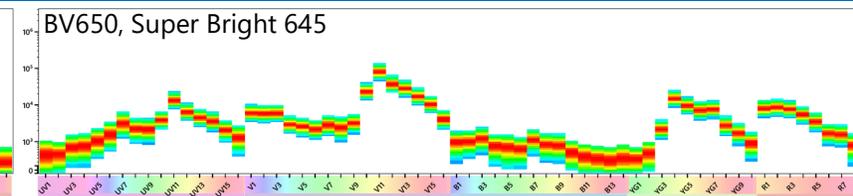
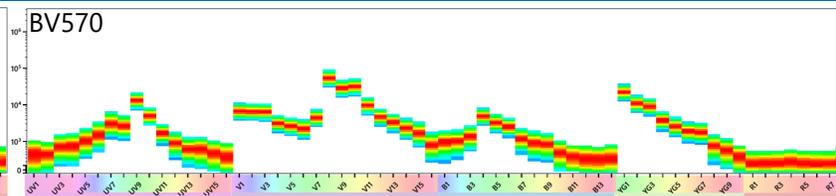
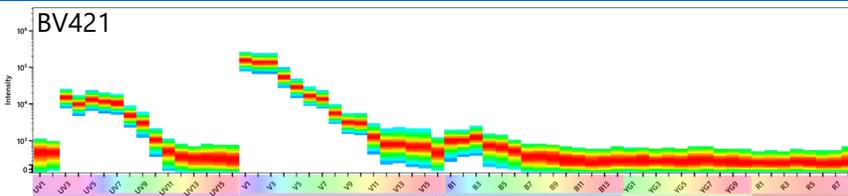
Similarity™ Indices

|                  |                  |       |
|------------------|------------------|-------|
| Super Bright 780 | 1                |       |
| BV785            | 1                | 1     |
|                  | Super Bright 780 | BV785 |

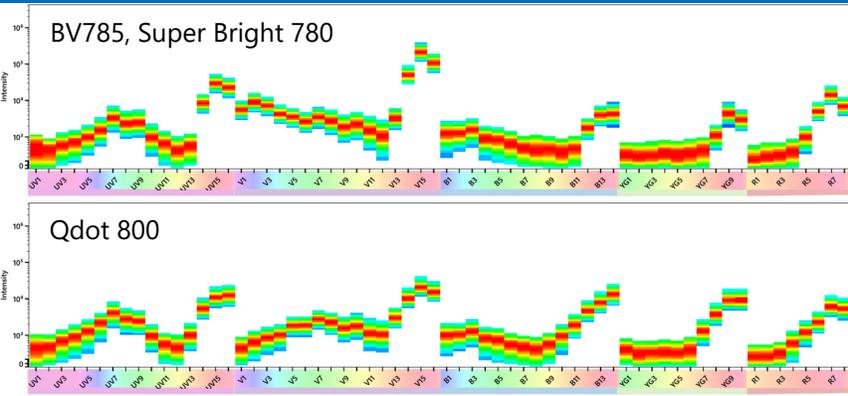
Complexity™ Index: 35.68



# Violet Laser Excited Dyes with Unique Signatures (1 of 2)

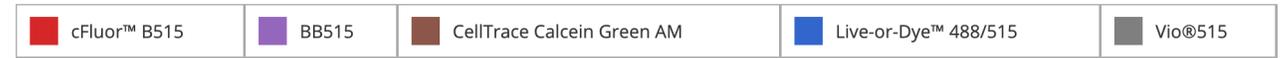
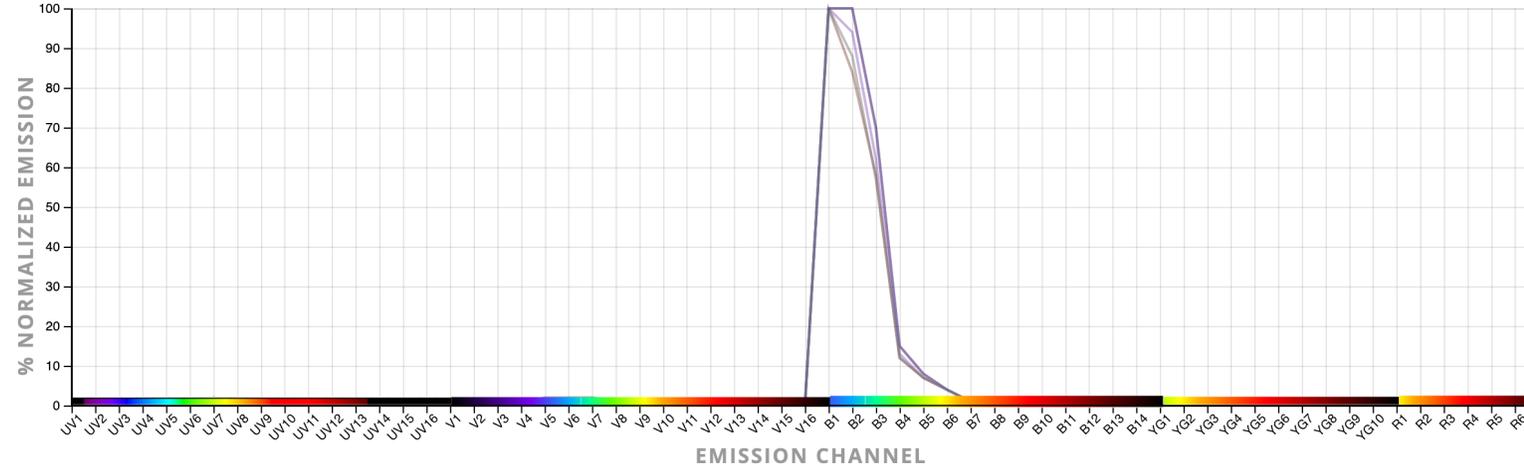


# Violet Laser Excited Dyes with Unique Signatures (2 of 2)



# Dyes Primarily Excited by the Blue Laser

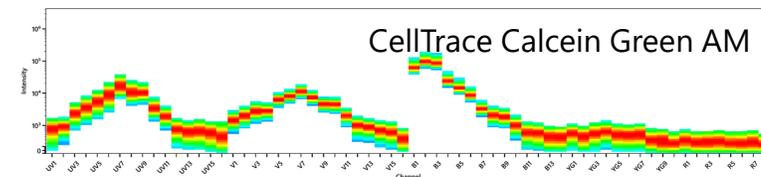
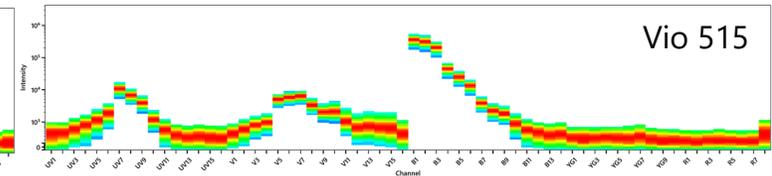
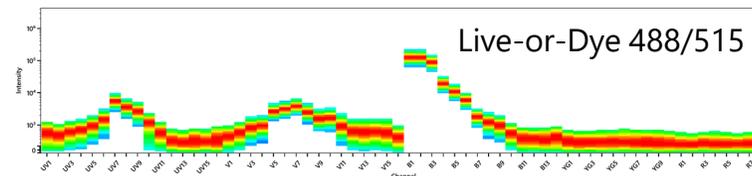
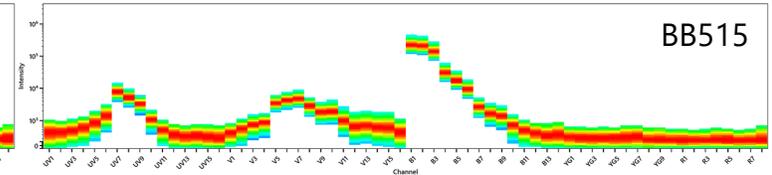
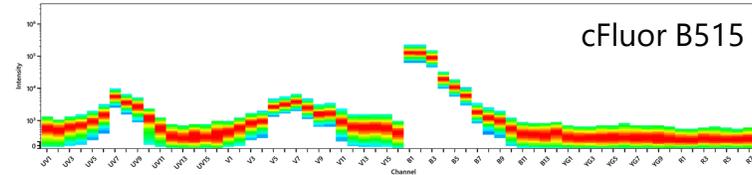
# Blue Laser Excited Dyes with Similar Signatures



## Similarity™ Indices

|                            |             |       |                            |                     |        |
|----------------------------|-------------|-------|----------------------------|---------------------|--------|
| cFluor B515                | 1           |       |                            |                     |        |
| BB515                      | 1           | 1     |                            |                     |        |
| CellTrace Calcein Green AM | 1           | 1     | 1                          |                     |        |
| Live-or-Dye 488/515        | 1           | 1     | 1                          | 1                   |        |
| Vio515                     | 1           | 1     | 1                          | 1                   | 1      |
|                            | cFluor B515 | BB515 | CellTrace Calcein Green AM | Live-or-Dye 488/515 | Vio515 |

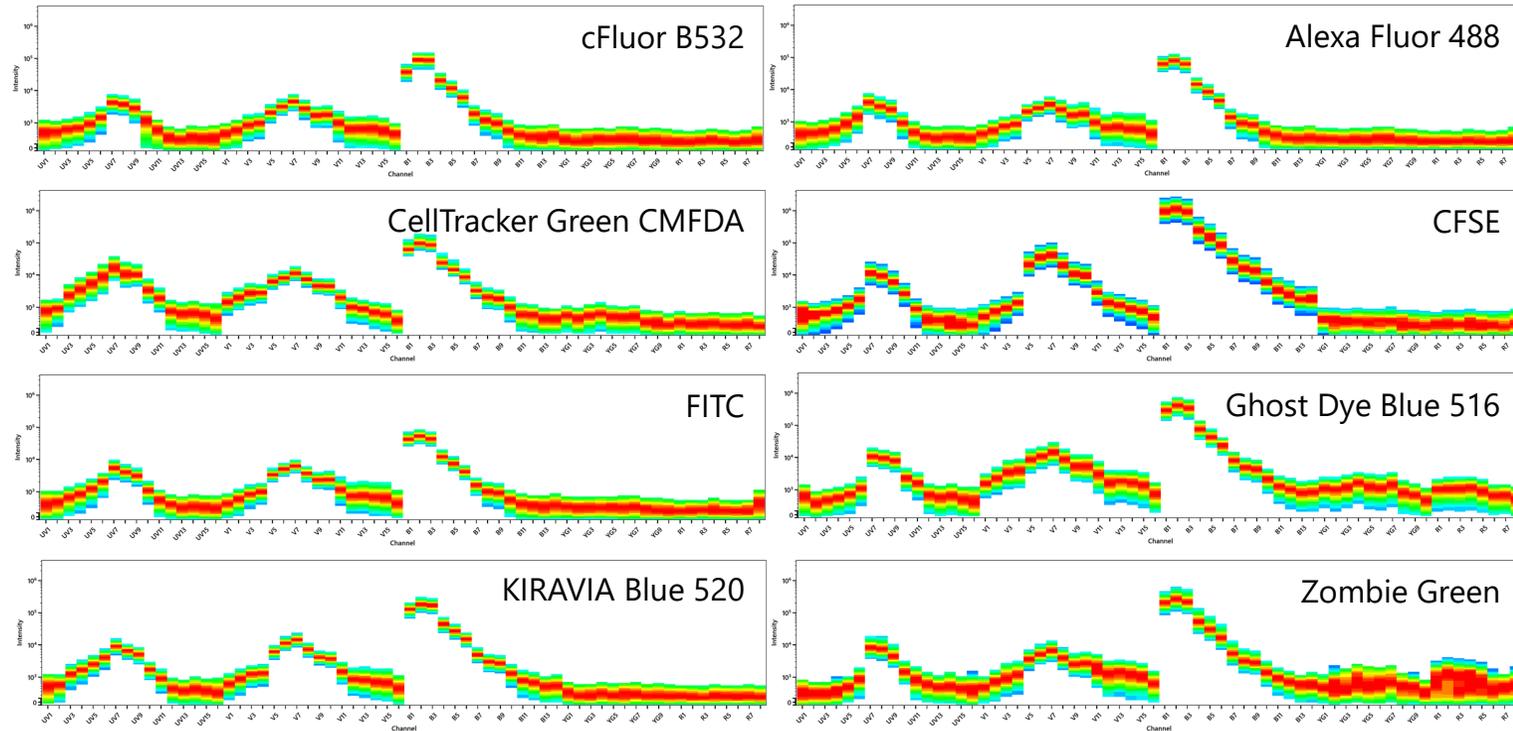
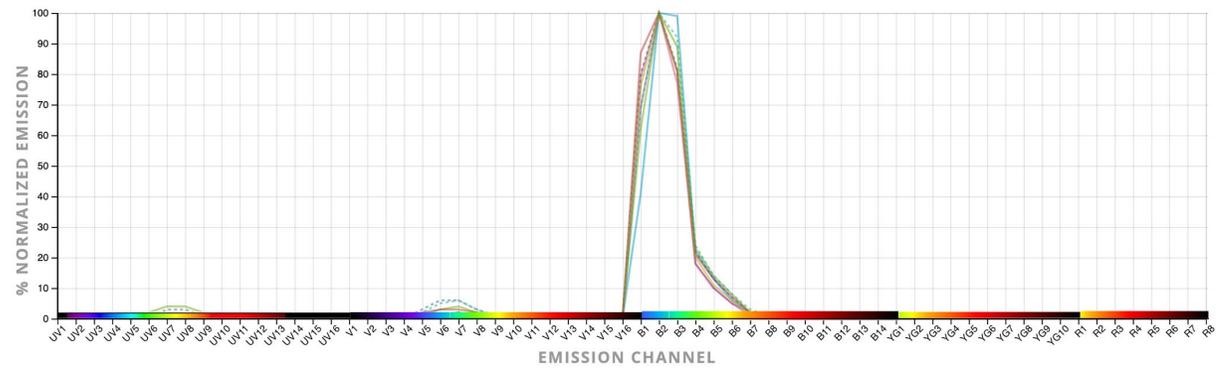
Complexity™ Index: 186159200



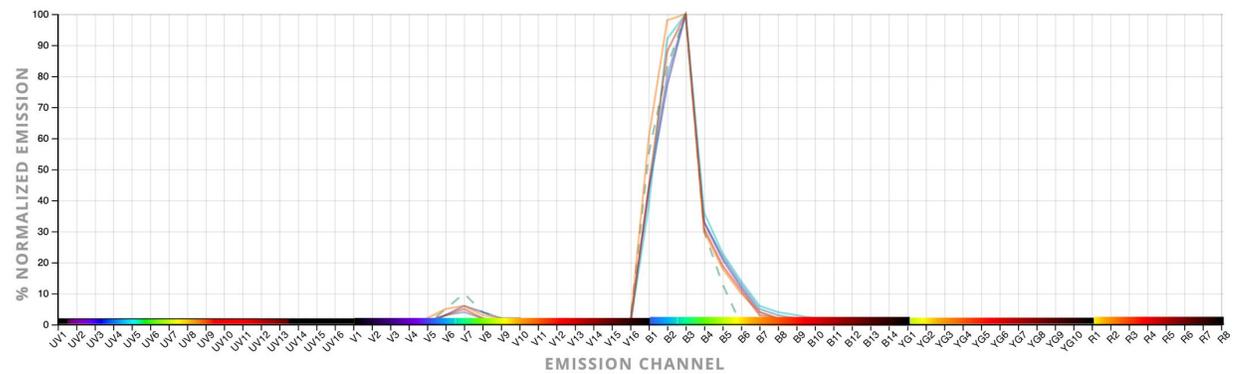
# Blue Laser Excited Dyes with Similar Signatures

## Similarity™ Indices

|                           |             |                 |                         |      |      |                    |                  |              |
|---------------------------|-------------|-----------------|-------------------------|------|------|--------------------|------------------|--------------|
| cFluor B532               | 1           |                 |                         |      |      |                    |                  |              |
| Alexa Fluor 488           | 0.96        | 1               |                         |      |      |                    |                  |              |
| CellTracker Green CMFDA   | 0.99        | 0.99            | 1                       |      |      |                    |                  |              |
| CFSE                      | 0.95        | 1               | 0.99                    | 1    |      |                    |                  |              |
| FITC                      | 0.96        | 1               | 0.99                    | 1    | 1    |                    |                  |              |
| Ghost Dye Blue 516        | 0.97        | 1               | 1                       | 0.99 | 1    | 1                  |                  |              |
| KIRAVIA Blue 520          | 0.98        | 0.99            | 1                       | 0.99 | 1    | 1                  | 1                |              |
| Zombie Green              | 0.97        | 1               | 0.99                    | 1    | 1    | 1                  | 1                | 1            |
|                           | cFluor B532 | Alexa Fluor 488 | CellTracker Green CMFDA | CFSE | FITC | Ghost Dye Blue 516 | KIRAVIA Blue 520 | Zombie Green |
| Complexity™ Index: 367.71 |             |                 |                         |      |      |                    |                  |              |



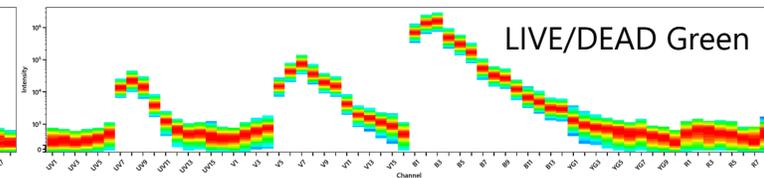
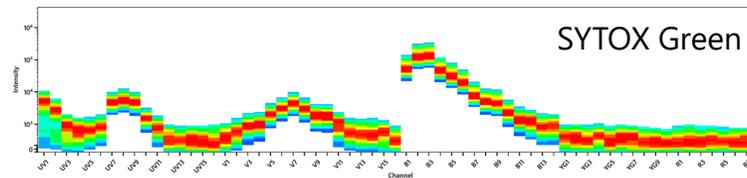
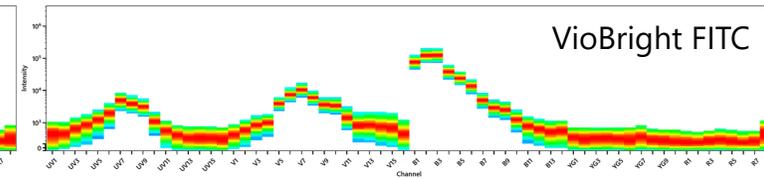
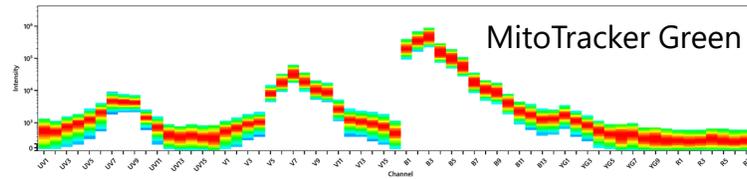
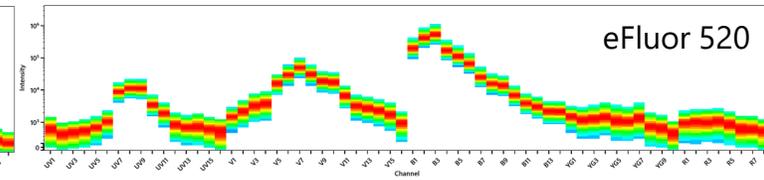
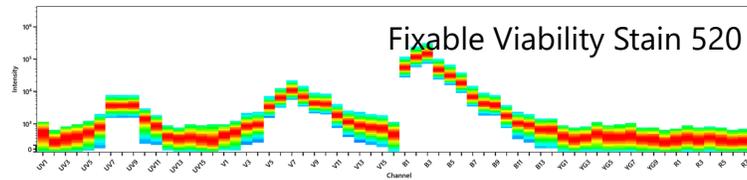
# Blue Laser Excited Dyes with Similar Signatures



## Similarity™ Indices

|                             |                             |            |                   |                |             |                 |
|-----------------------------|-----------------------------|------------|-------------------|----------------|-------------|-----------------|
| Fixable Viability Stain 520 | 1                           |            |                   |                |             |                 |
| eFluor 520                  | 0.99                        | 1          |                   |                |             |                 |
| MitoTracker Green           | 0.99                        | 1          | 1                 |                |             |                 |
| VioBright FITC              | 0.99                        | 0.99       | 0.99              | 1              |             |                 |
| SYTOX Green                 | 0.98                        | 1          | 0.99              | 0.99           | 1           |                 |
| LIVE DEAD Green             | 0.99                        | 1          | 1                 | 0.99           | 1           | 1               |
|                             | Fixable Viability Stain 520 | eFluor 520 | MitoTracker Green | VioBright FITC | SYTOX Green | LIVE DEAD Green |

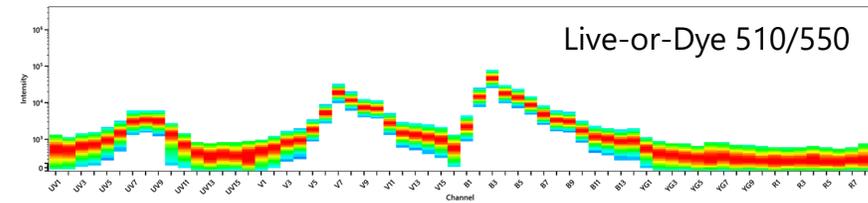
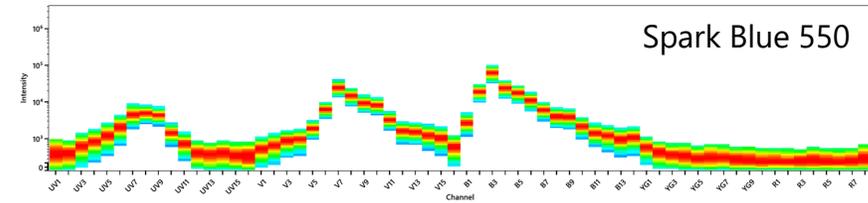
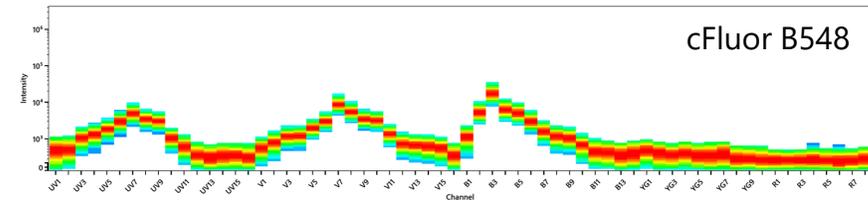
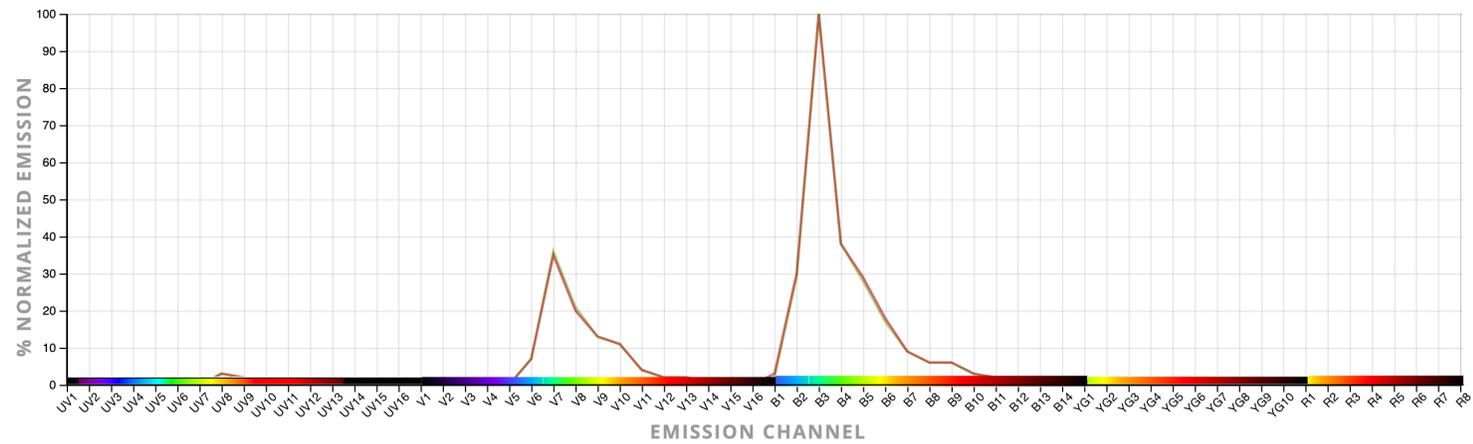
Complexity™ Index: 137.5



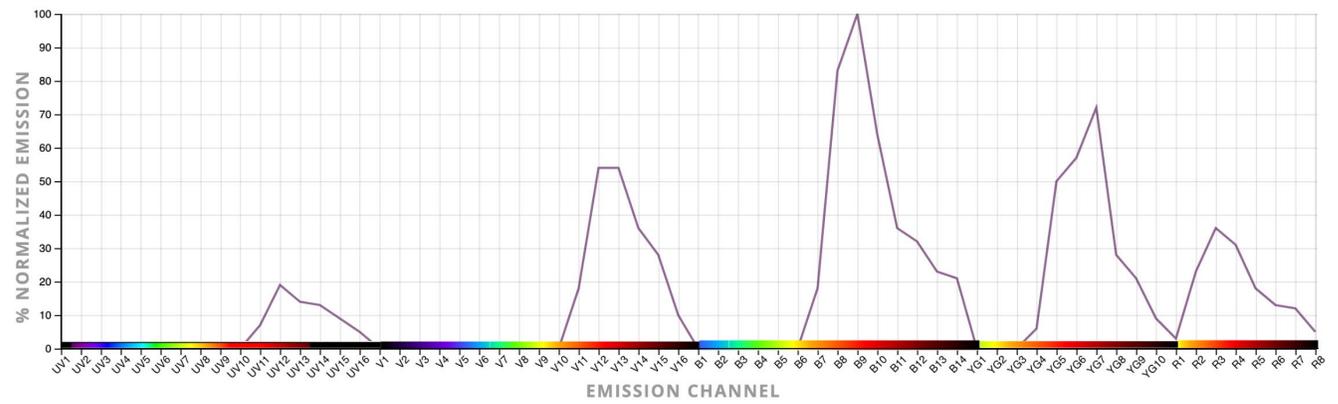
# Blue Laser Excited Dyes with Similar Signatures

## Similarity™ Indices

|                             |             |                |                     |
|-----------------------------|-------------|----------------|---------------------|
| cFluor B548                 | 1           |                |                     |
| Spark Blue 550              | 1           | 1              |                     |
| Live-or-Dye 510/550         | 1           | 1              | 1                   |
|                             | cFluor B548 | Spark Blue 550 | Live-or-Dye 510/550 |
| Complexity™ Index: 78794960 |             |                |                     |

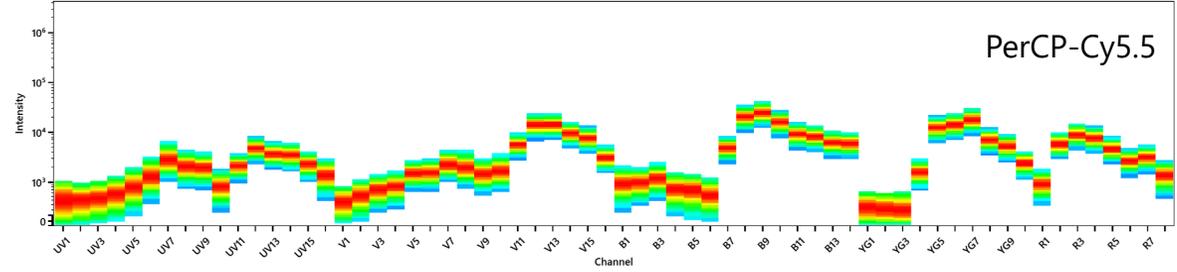
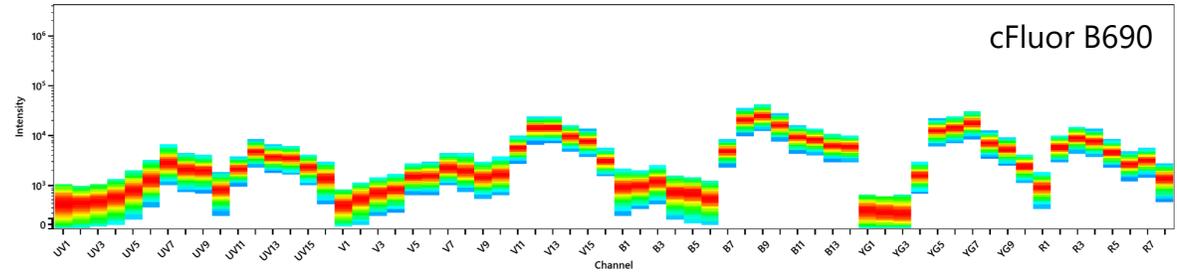


# Blue Laser Excited Dyes with Similar Signatures

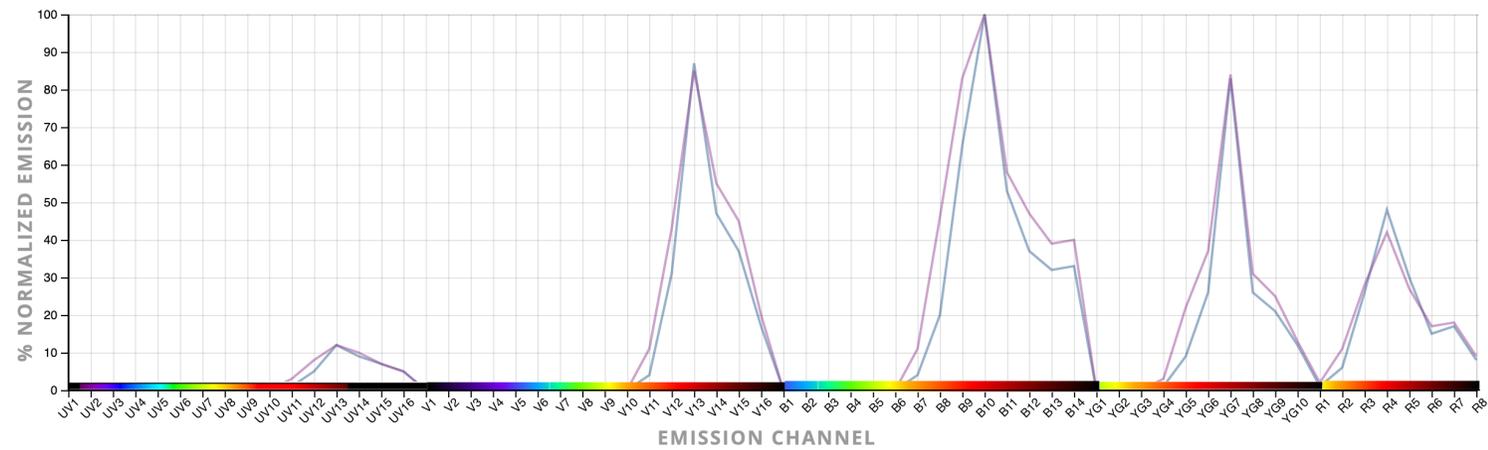


Similarity™ Indices

|                             |             |             |
|-----------------------------|-------------|-------------|
| cFluor B690                 | 1           |             |
| PerCP-Cy5.5                 | 1           | 1           |
|                             | cFluor B690 | PerCP-Cy5.5 |
| Complexity™ Index: 12935960 |             |             |

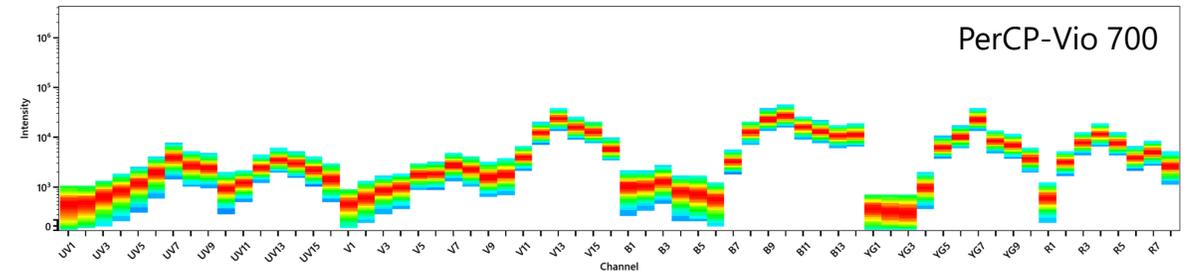
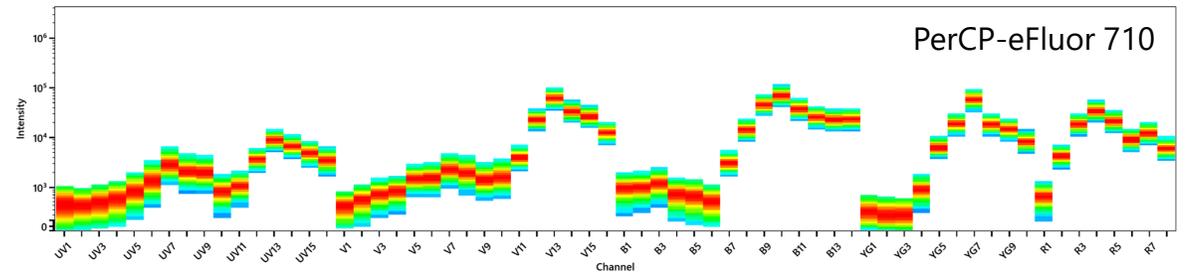


# Blue Laser Excited Dyes with Similar Signatures

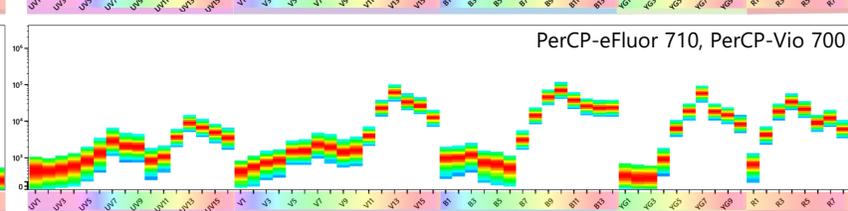
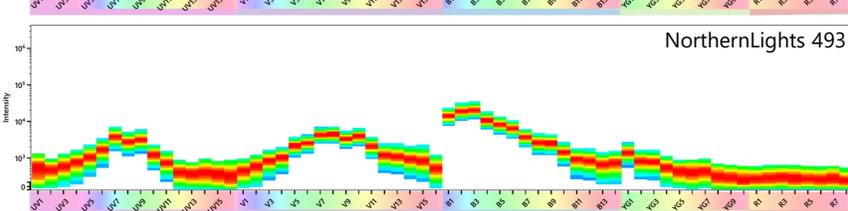
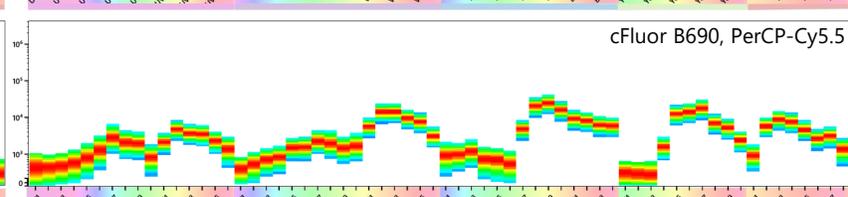
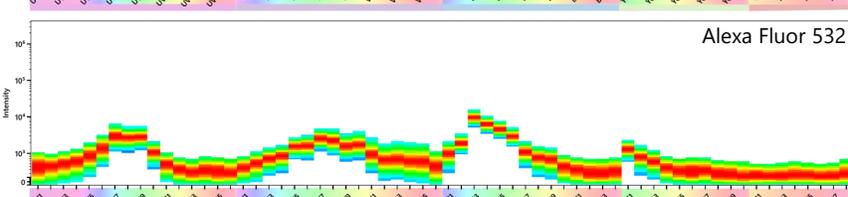
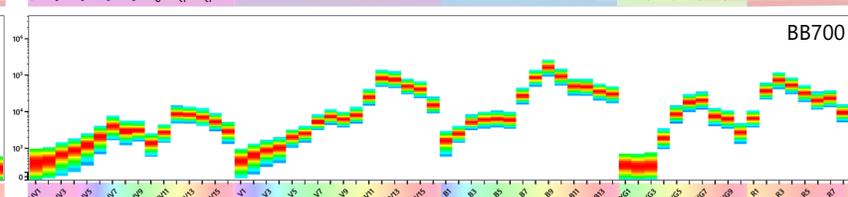
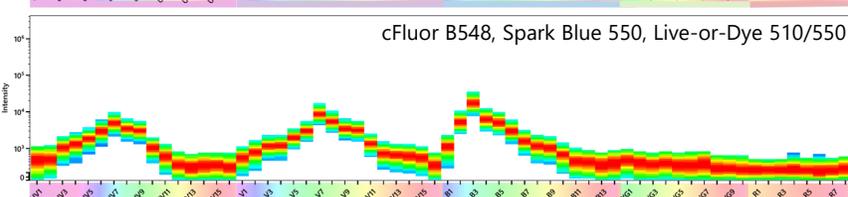
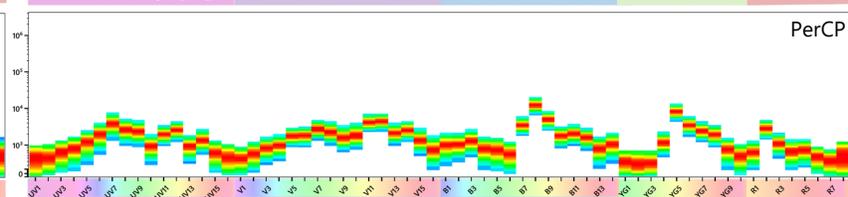
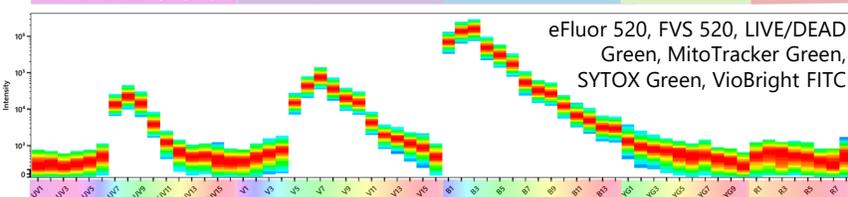
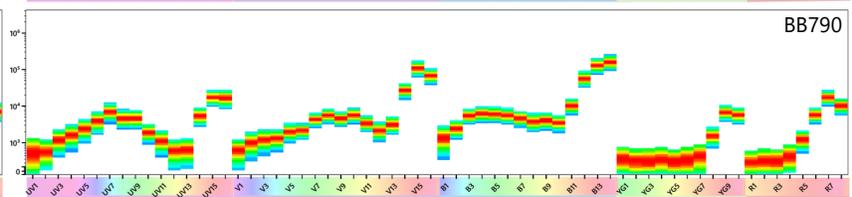
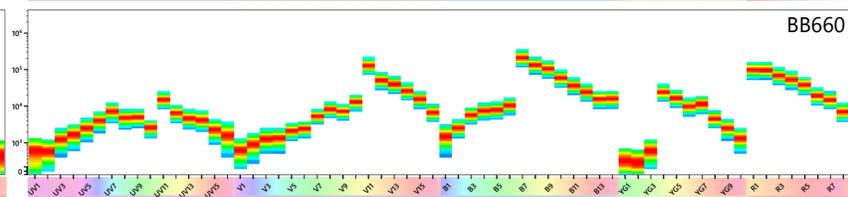
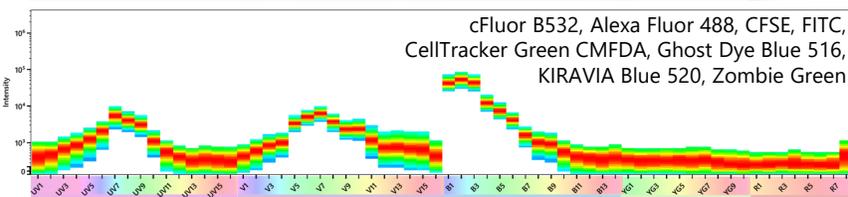
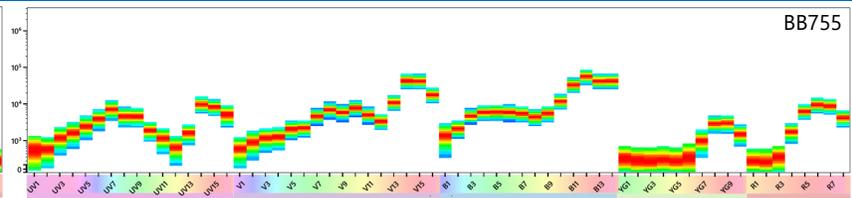
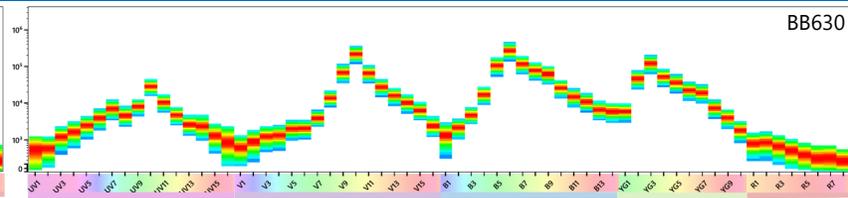
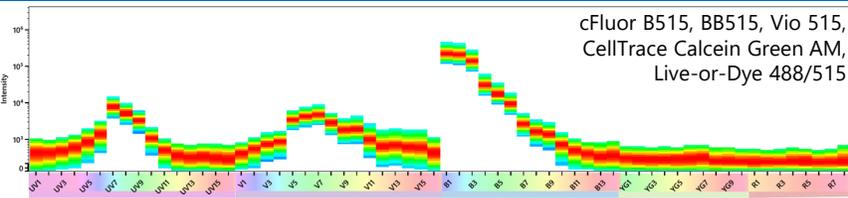


## Similarity™ Indices

|                          |                  |              |
|--------------------------|------------------|--------------|
| PerCP-eFluor 710         | 1                |              |
| PerCP-Vio700             | 0.99             | 1            |
|                          | PerCP-eFluor 710 | PerCP-Vio700 |
| Complexity™ Index: 11.77 |                  |              |



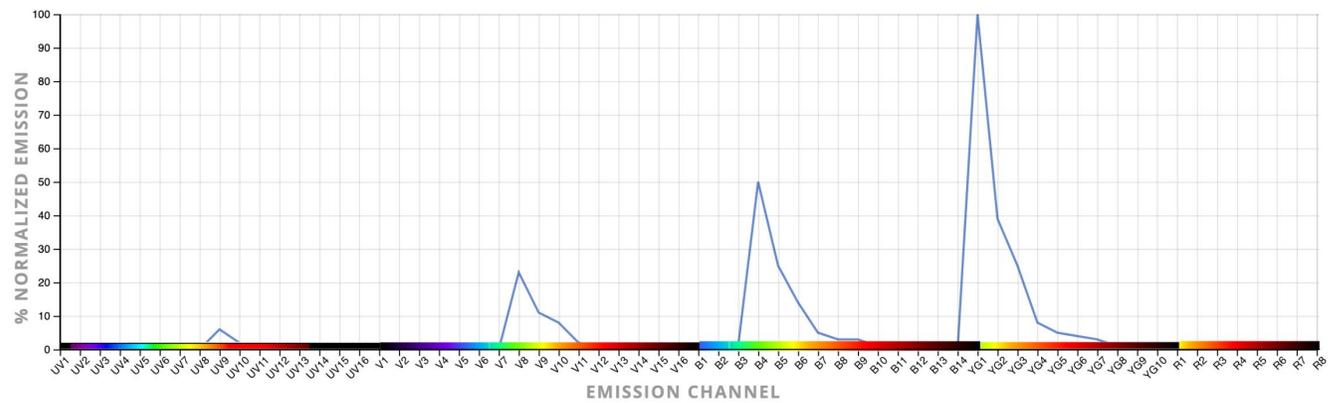
# Blue Laser Excited Dyes with Unique Signatures



# Dyes Primarily Excited by the Yellow-Green Laser



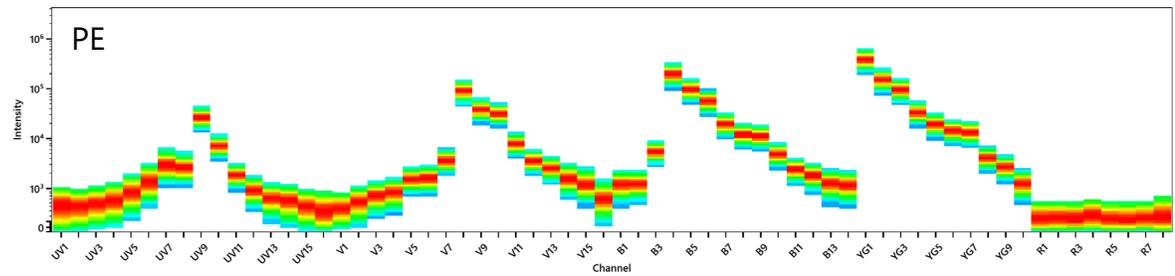
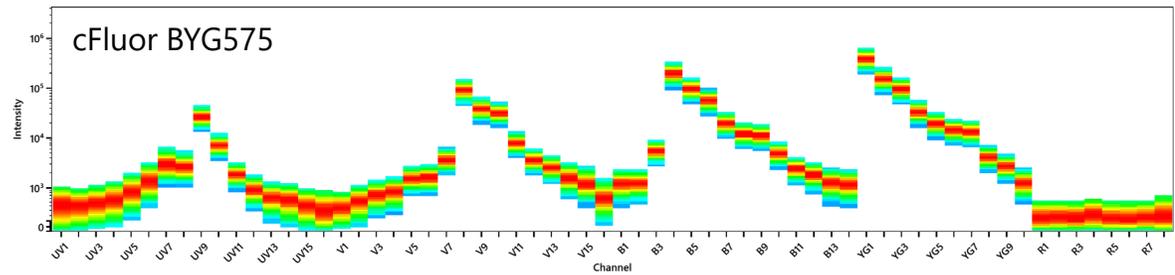
# Yellow-Green Laser Excited Dyes with Similar Signatures



Similarity™ Indices

|               |    |               |
|---------------|----|---------------|
| PE            | 1  |               |
| cFluor BYG575 | 1  | 1             |
|               | PE | cFluor BYG575 |

Complexity™ Index: 43314510

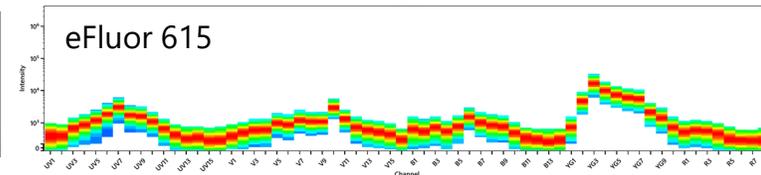
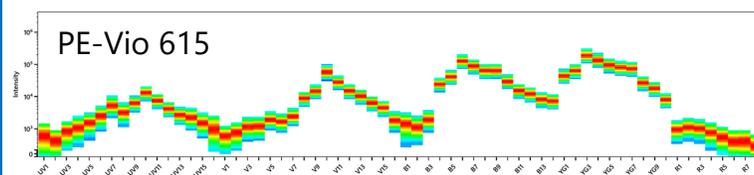
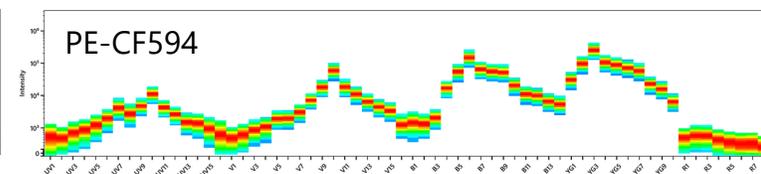
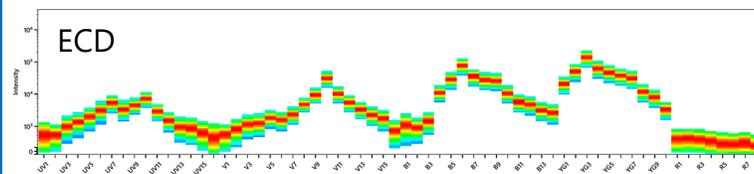
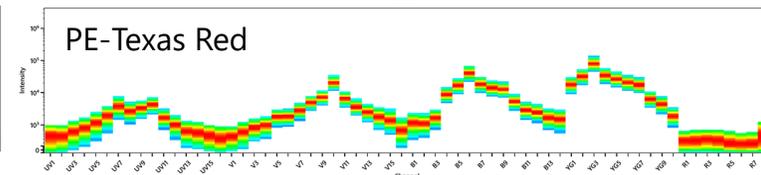
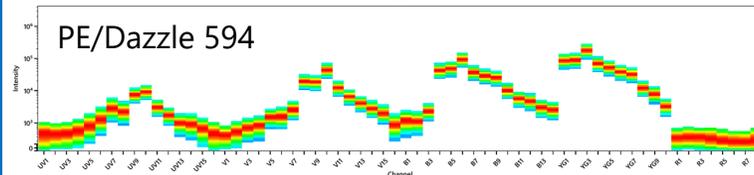
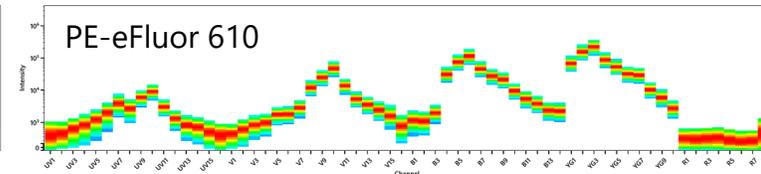
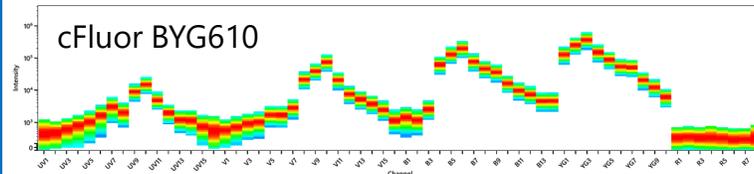
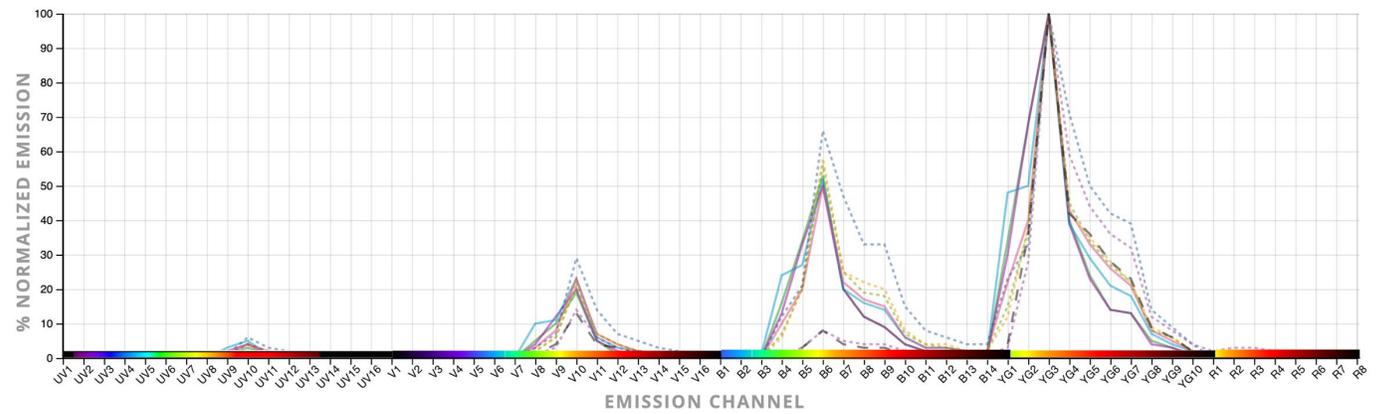


# Yellow-Green Laser Excited Dyes with Similar Signatures

## Similarity™ Indices

|                     |               |               |              |              |      |          |            |            |                     |  |
|---------------------|---------------|---------------|--------------|--------------|------|----------|------------|------------|---------------------|--|
| cFluor BYG610       | 1             |               |              |              |      |          |            |            |                     |  |
| PE-eFluor 610       | 1             | 1             |              |              |      |          |            |            |                     |  |
| PE/Dazzle594        | 0.98          | 0.98          | 1            |              |      |          |            |            |                     |  |
| PE-Texas Red        | 0.97          | 0.97          | 0.98         | 1            |      |          |            |            |                     |  |
| ECD                 | 0.95          | 0.95          | 0.96         | 1            | 1    |          |            |            |                     |  |
| PE-CF594            | 0.95          | 0.95          | 0.95         | 0.99         | 1    | 1        |            |            |                     |  |
| PE-Vio 615          | 0.89          | 0.89          | 0.92         | 0.96         | 0.97 | 0.97     | 1          |            |                     |  |
| eFluor 615          | 0.82          | 0.83          | 0.83         | 0.9          | 0.9  | 0.89     | 0.87       | 1          |                     |  |
| Live-or-Dye 594/614 | 0.86          | 0.87          | 0.86         | 0.92         | 0.91 | 0.9      | 0.85       | 0.99       | 1                   |  |
|                     | cFluor BYG610 | PE-eFluor 610 | PE/Dazzle594 | PE-Texas Red | ECD  | PE-CF594 | PE-Vio 615 | eFluor 615 | Live-or-Dye 594/614 |  |

Complexity™ Index: 253.17

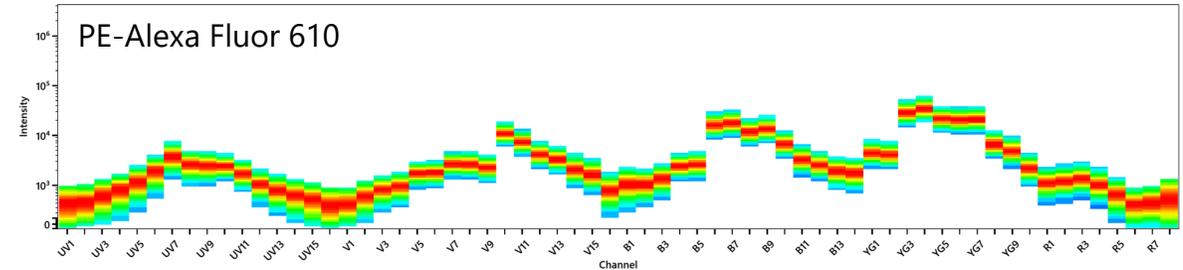
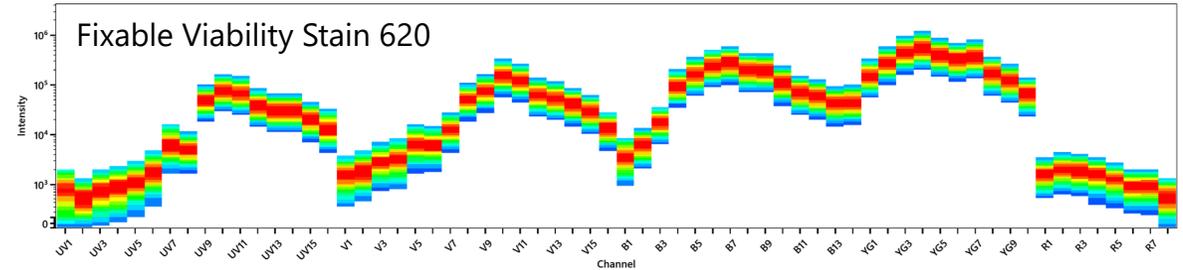
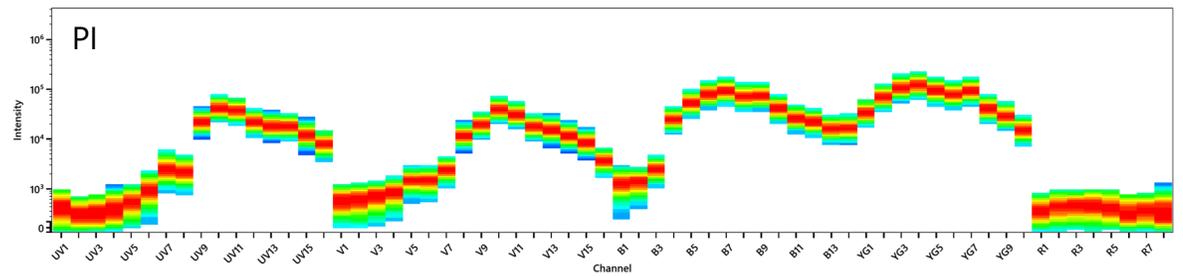
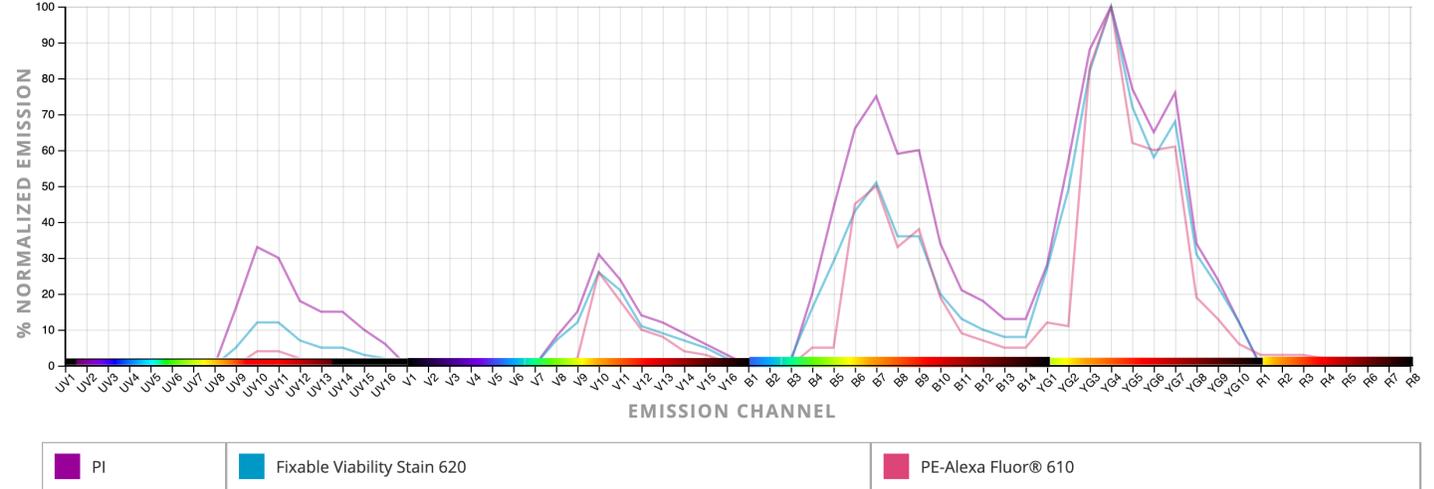


# Yellow-Green Laser Excited Dyes with Similar Signatures

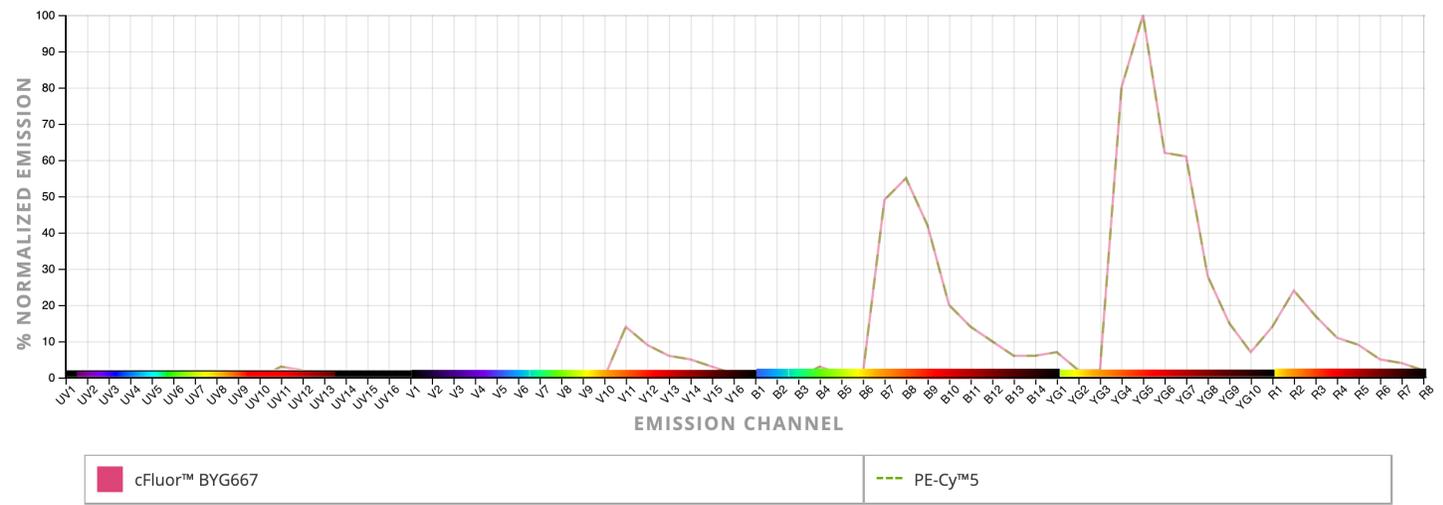
Similarity™ Indices

|                             |      |                             |                    |
|-----------------------------|------|-----------------------------|--------------------|
| PI                          | 1    |                             |                    |
| Fixable Viability Stain 620 | 0.98 | 1                           |                    |
| PE-Alexa Fluor 610          | 0.93 | 0.97                        | 1                  |
|                             | PI   | Fixable Viability Stain 620 | PE-Alexa Fluor 610 |

Complexity™ Index: 14.46

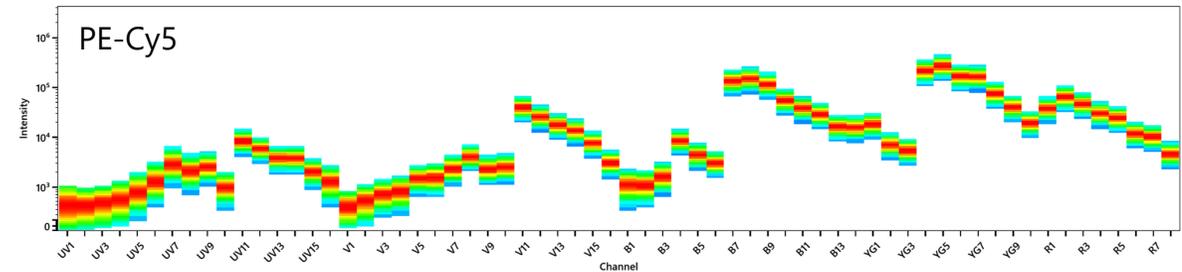
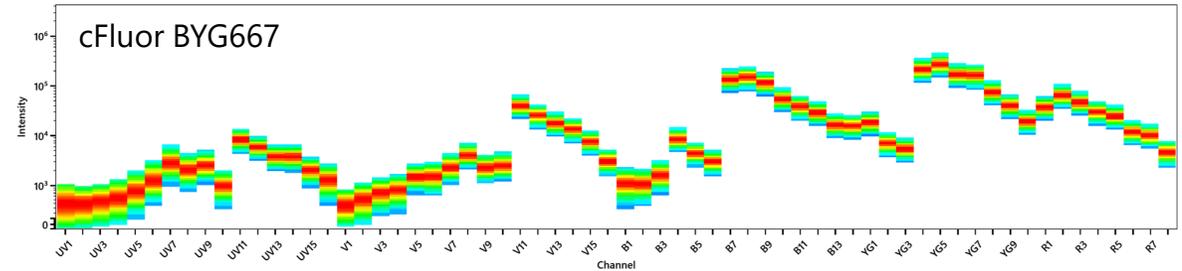


# Yellow-Green Laser Excited Dyes with Similar Signatures

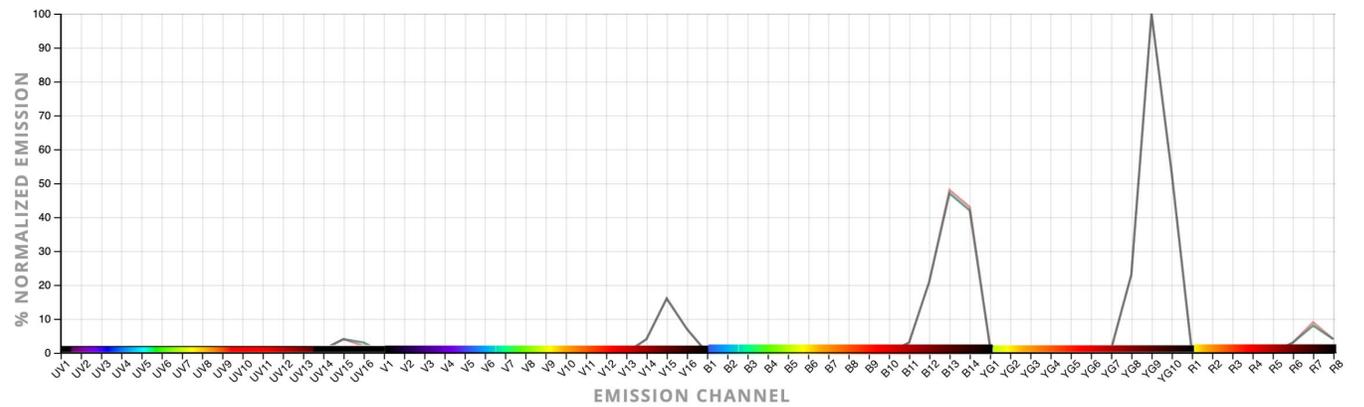


## Similarity™ Indices

|                             |               |        |
|-----------------------------|---------------|--------|
| cFluor BYG667               | 1             |        |
| PE-Cy5                      | 1             | 1      |
|                             | cFluor BYG667 | PE-Cy5 |
| Complexity™ Index: 33911970 |               |        |

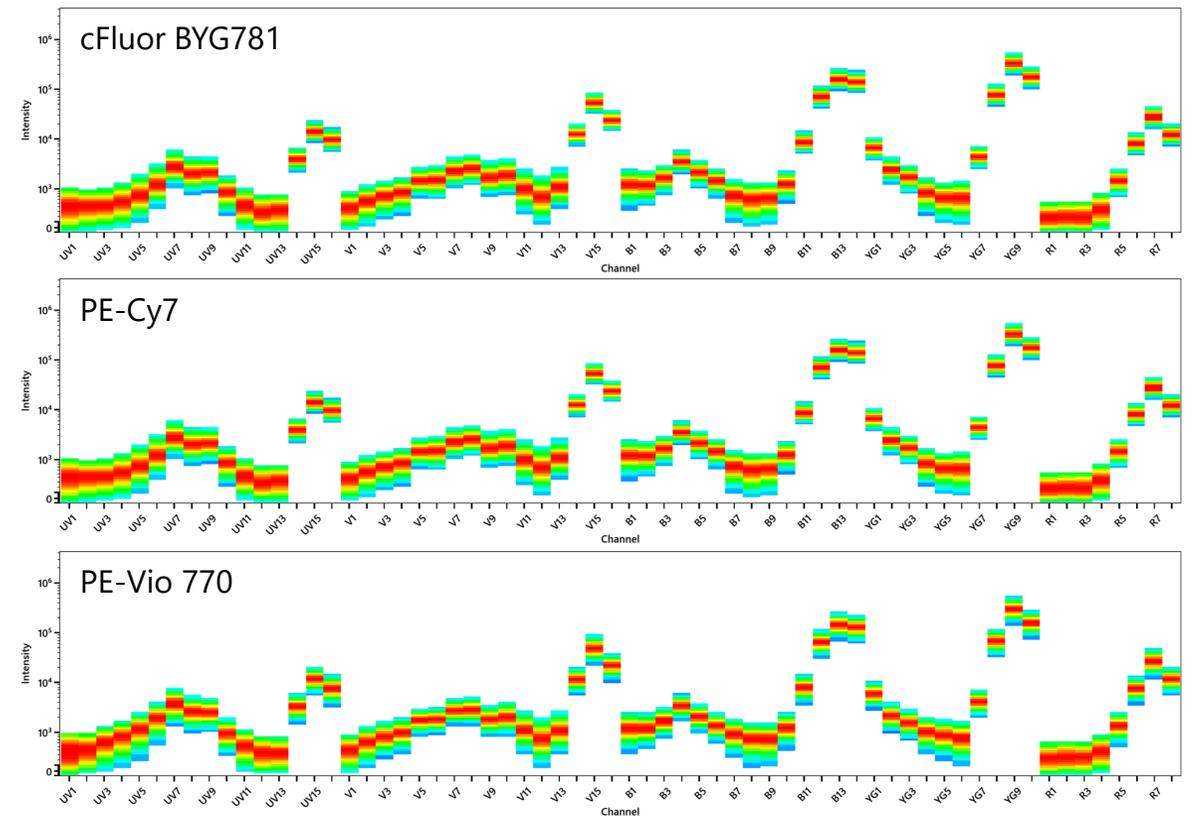


# Yellow-Green Laser Excited Dyes with Similar Signatures

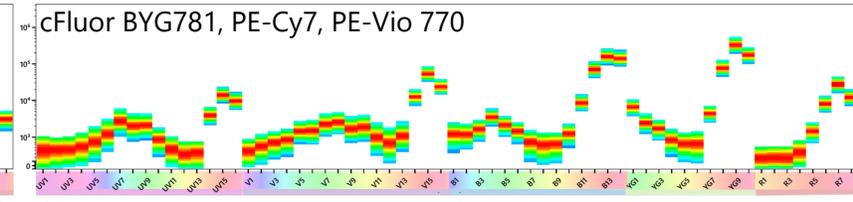
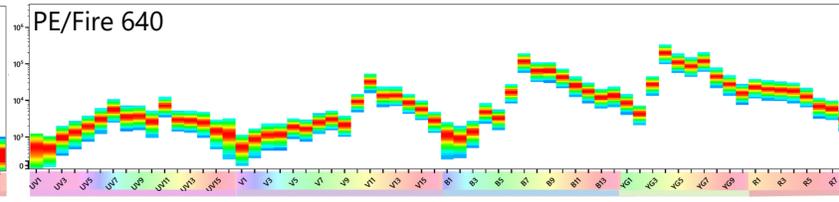
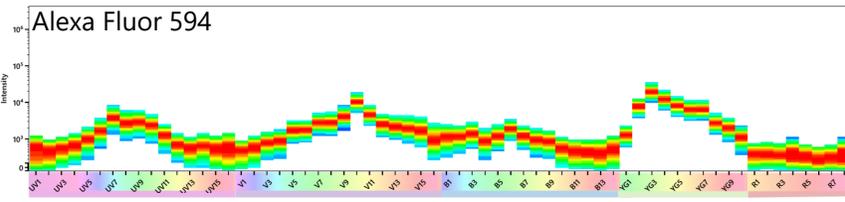
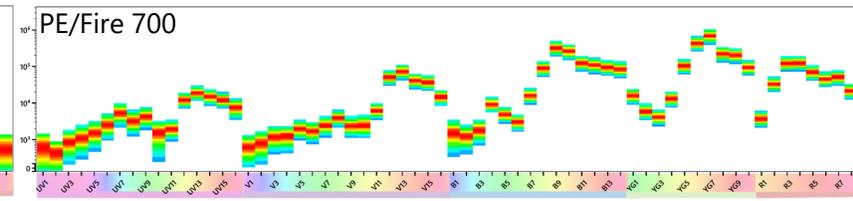
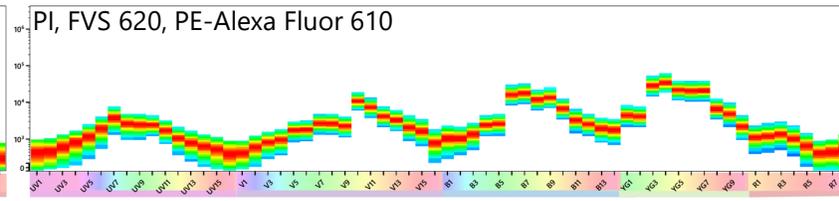
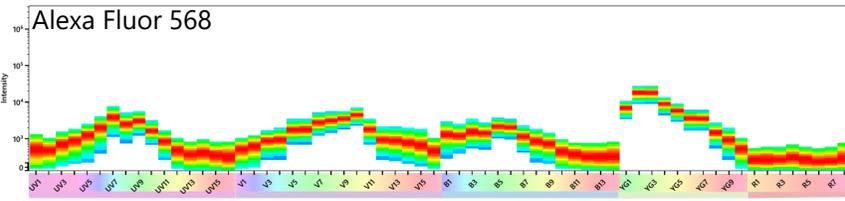
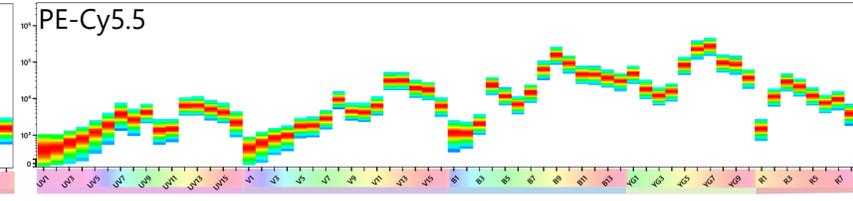
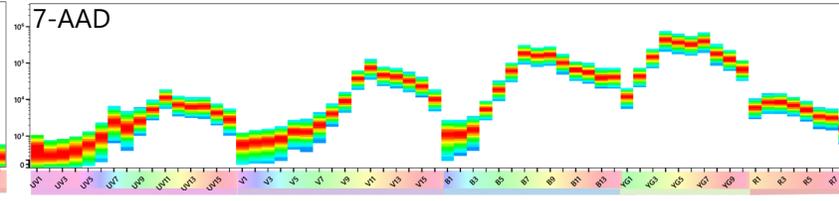
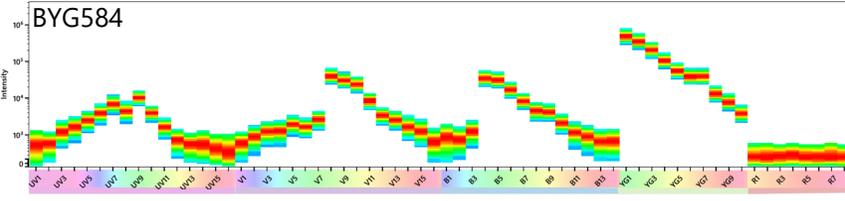
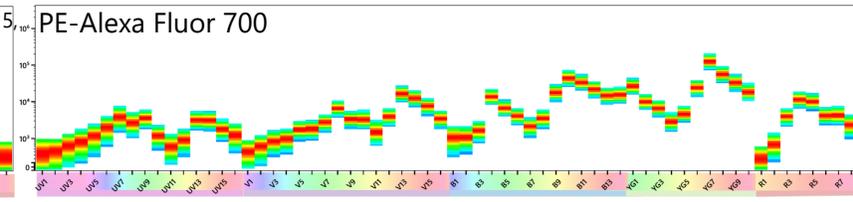
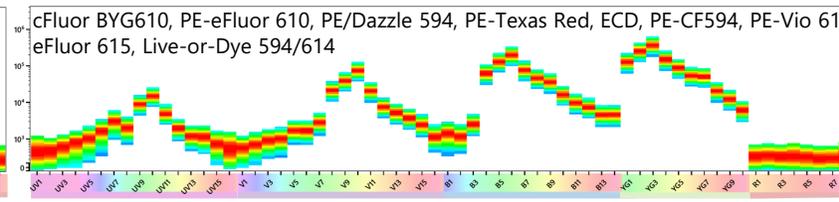
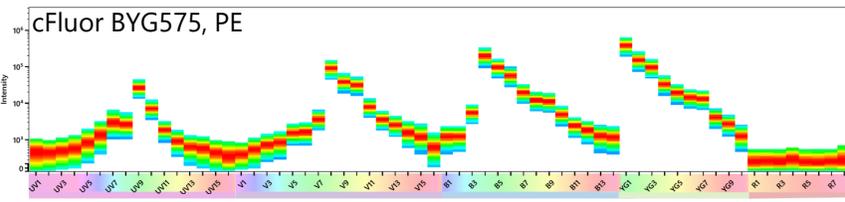
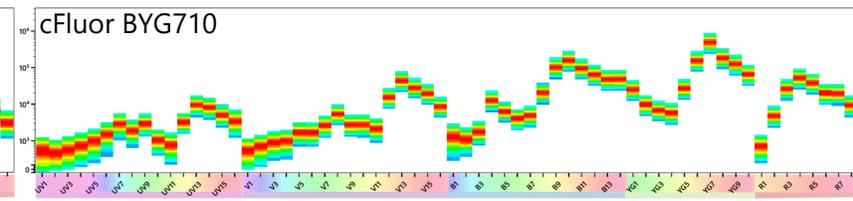
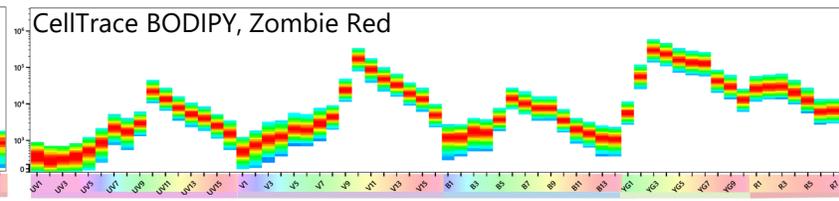
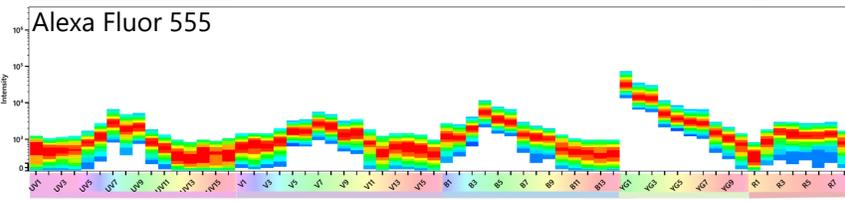
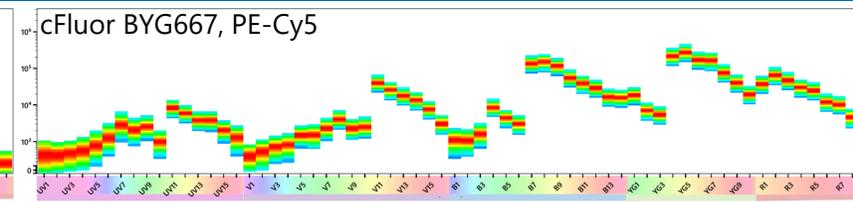
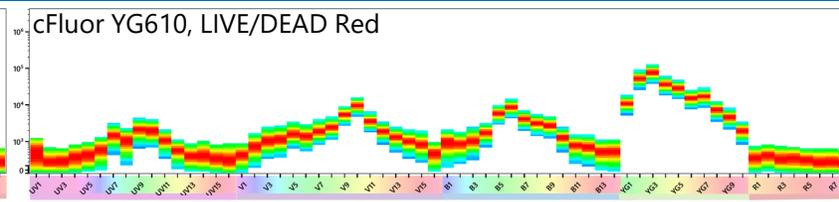
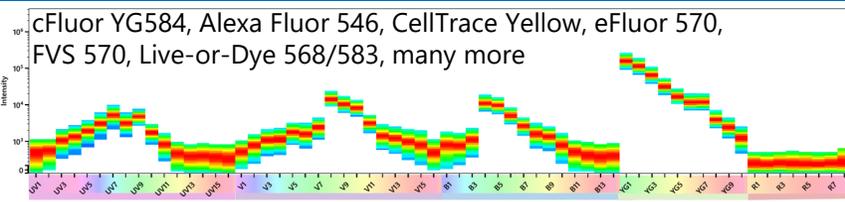


## Similarity™ Indices

|                             |               |           |        |
|-----------------------------|---------------|-----------|--------|
| cFluor BYG781               | 1             |           |        |
| PE-Vio770                   | 1             | 1         |        |
| PE-Cy7                      | 1             | 1         | 1      |
|                             | cFluor BYG781 | PE-Vio770 | PE-Cy7 |
| Complexity™ Index: 60912570 |               |           |        |

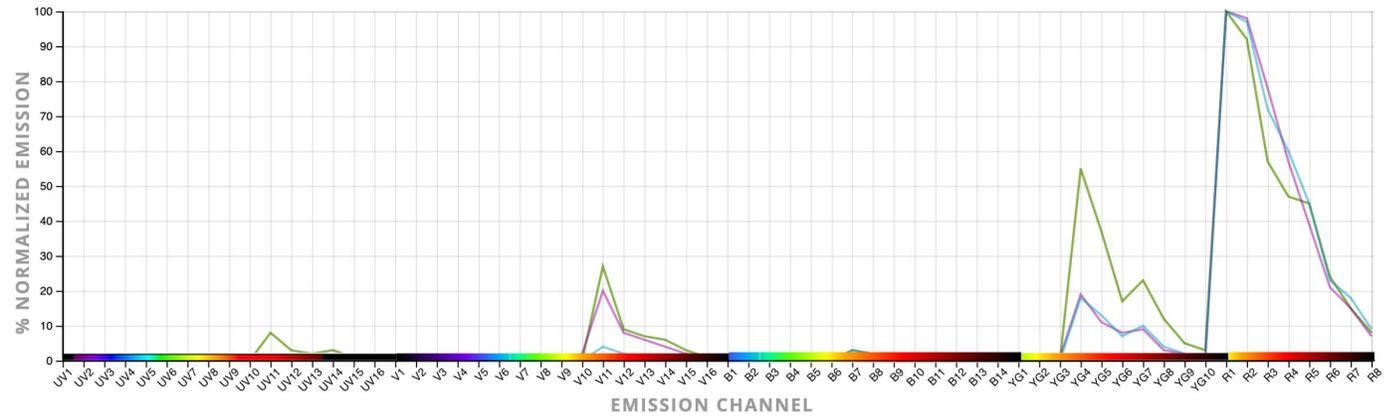


# Yellow-Green Laser Excited Dyes with Unique Signatures



# Dyes Primarily Excited by the Red Laser

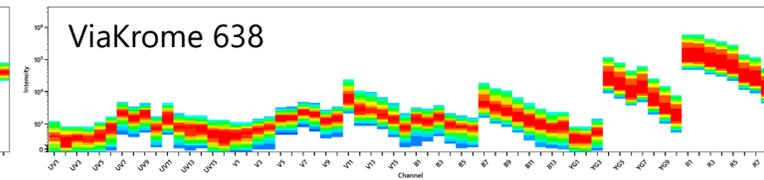
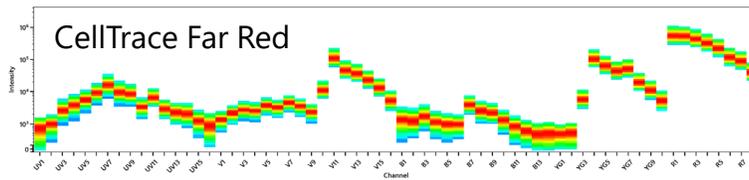
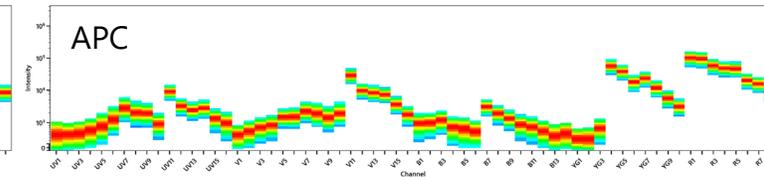
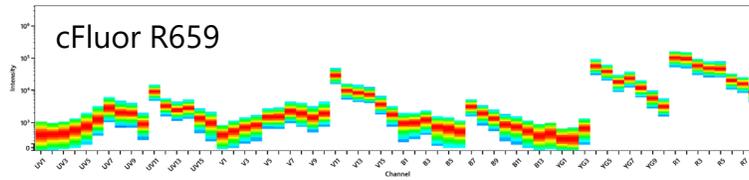
# Red Laser Excited Dyes with Similar Signatures



Similarity™ Indices

|                   |      |                   |              |
|-------------------|------|-------------------|--------------|
| APC               | 1    |                   |              |
| CellTrace Far Red | 0.95 | 1                 |              |
| ViaKrome 638      | 0.95 | 0.99              | 1            |
|                   | APC  | CellTrace Far Red | ViaKrome 638 |

Complexity™ Index: 20.67

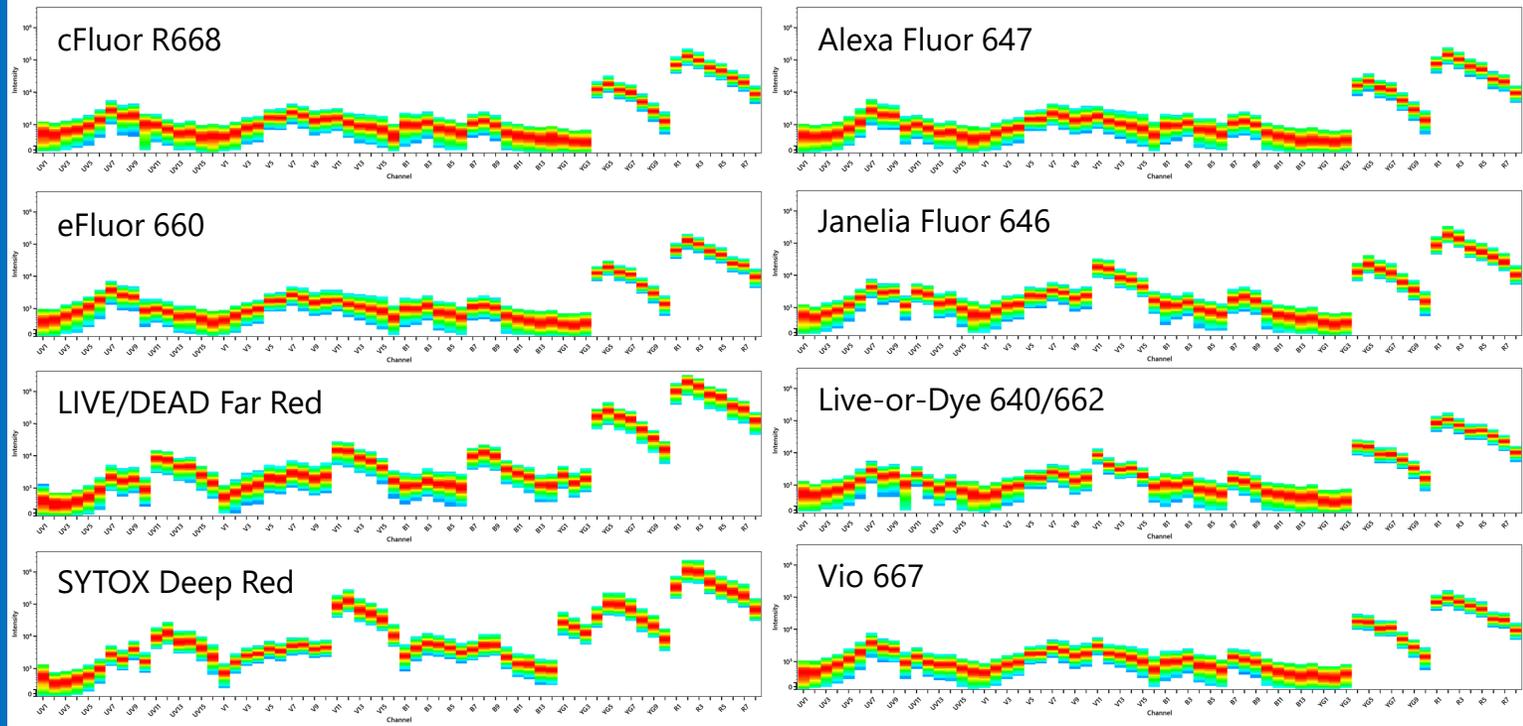
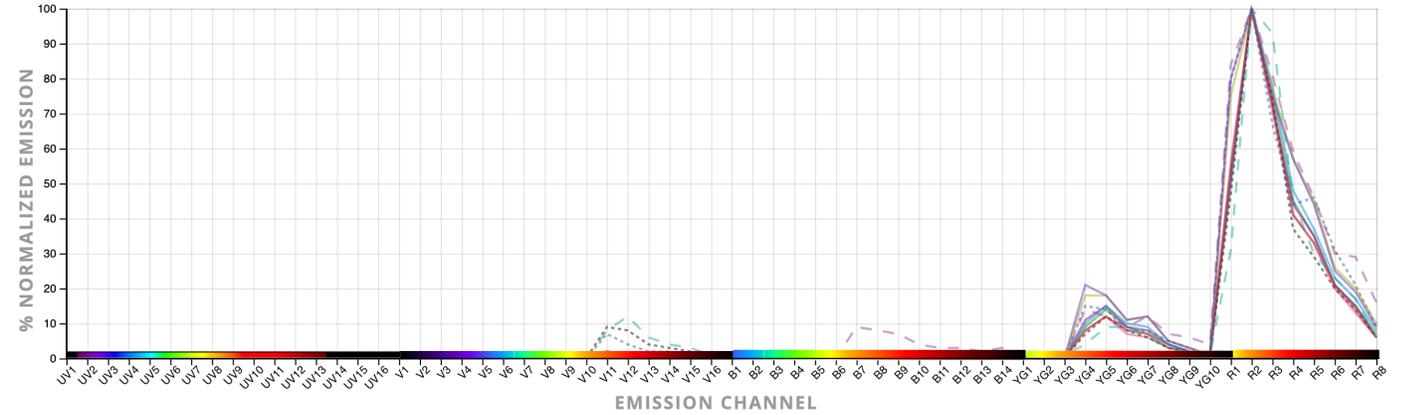


# Red Laser Excited Dyes with Similar Signatures

## Similarity™ Indices

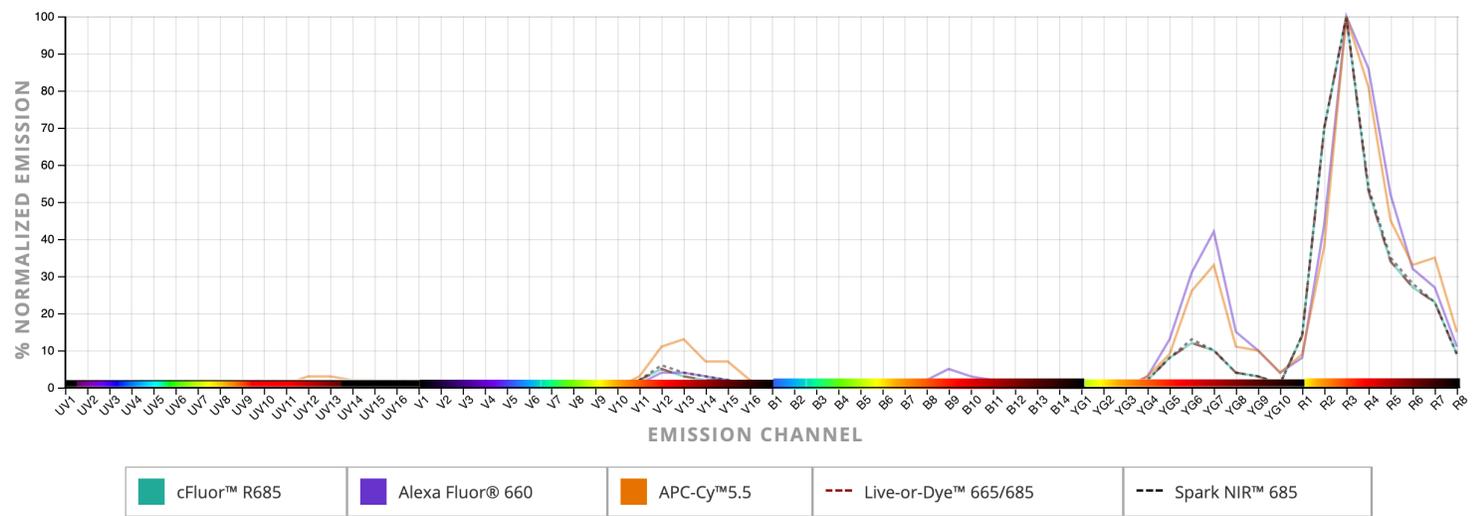
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|-----------------------------|-------------|-----------------|------------|-----------------------------|-------------------|-------------------|---------------------|---------------------|----------------|--------|---------------|--|--|--|--|--|--|--|--|--|
| cFluor R668                 | 1           |                 |            |                             |                   |                   |                     |                     |                |        |               |  |  |  |  |  |  |  |  |  |
| Alexa Fluor 647             | 1           | 1               |            |                             |                   |                   |                     |                     |                |        |               |  |  |  |  |  |  |  |  |  |
| eFluor 660                  | 1           | 1               | 1          |                             |                   |                   |                     |                     |                |        |               |  |  |  |  |  |  |  |  |  |
| Fixable Viability Stain 660 | 1           | 1               | 1          | 1                           |                   |                   |                     |                     |                |        |               |  |  |  |  |  |  |  |  |  |
| Janelia Fluor 646           | 0.99        | 0.99            | 0.99       | 0.99                        | 1                 |                   |                     |                     |                |        |               |  |  |  |  |  |  |  |  |  |
| LIVE DEAD Far Red           | 1           | 1               | 1          | 1                           | 1                 | 1                 |                     |                     |                |        |               |  |  |  |  |  |  |  |  |  |
| Live-or-Dye 640/662         | 0.98        | 0.98            | 0.98       | 0.98                        | 0.97              | 0.98              | 1                   |                     |                |        |               |  |  |  |  |  |  |  |  |  |
| Northern Lights 637         | 0.98        | 0.98            | 0.98       | 0.98                        | 0.96              | 0.97              | 0.99                | 1                   |                |        |               |  |  |  |  |  |  |  |  |  |
| SYTOX Deep Red              | 0.97        | 0.97            | 0.98       | 0.97                        | 0.99              | 0.98              | 0.93                | 0.93                | 1              |        |               |  |  |  |  |  |  |  |  |  |
| Vio667                      | 0.99        | 0.99            | 0.99       | 0.99                        | 0.98              | 0.99              | 0.99                | 0.99                | 0.95           | 1      |               |  |  |  |  |  |  |  |  |  |
| VioBright 667               | 0.99        | 0.99            | 0.98       | 0.98                        | 0.97              | 0.98              | 0.99                | 0.99                | 0.94           | 1      | 1             |  |  |  |  |  |  |  |  |  |
|                             | cFluor R668 | Alexa Fluor 647 | eFluor 660 | Fixable Viability Stain 660 | Janelia Fluor 646 | LIVE DEAD Far Red | Live-or-Dye 640/662 | Northern Lights 637 | SYTOX Deep Red | Vio667 | VioBright 667 |  |  |  |  |  |  |  |  |  |

Complexity™ Index: 738.6



Fixable Viability Stain 660, NorthernLights 637, VioBright 667 data not shown

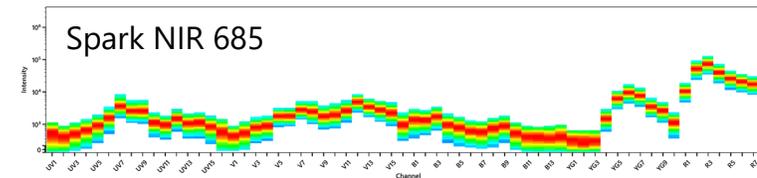
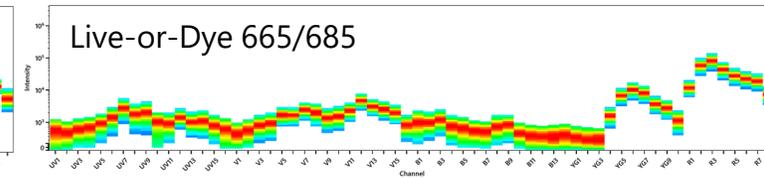
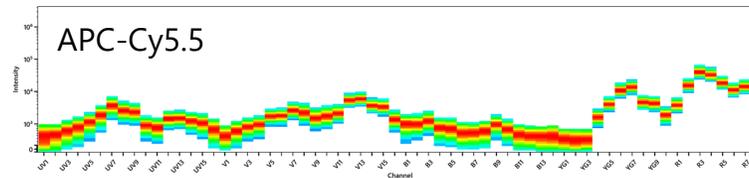
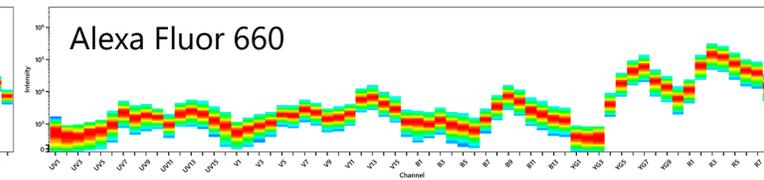
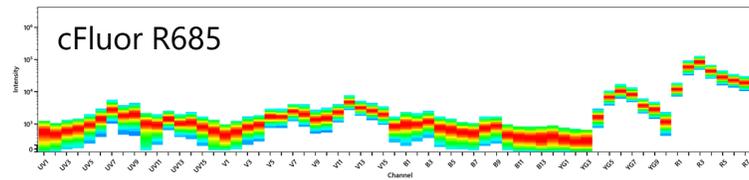
# Red Laser Excited Dyes with Similar Signatures



## Similarity™ Indices

|                     |             |                 |           |                     |               |
|---------------------|-------------|-----------------|-----------|---------------------|---------------|
| cFluor R685         | 1           |                 |           |                     |               |
| Alexa Fluor 660     | 0.93        | 1               |           |                     |               |
| APC-Cy5.5           | 0.93        | 0.99            | 1         |                     |               |
| Live-or-Dye 665/685 | 1           | 0.93            | 0.93      | 1                   |               |
| Spark NIR 685       | 1           | 0.93            | 0.94      | 1                   | 1             |
|                     | cFluor R685 | Alexa Fluor 660 | APC-Cy5.5 | Live-or-Dye 665/685 | Spark NIR 685 |

Complexity™ Index: 58742980

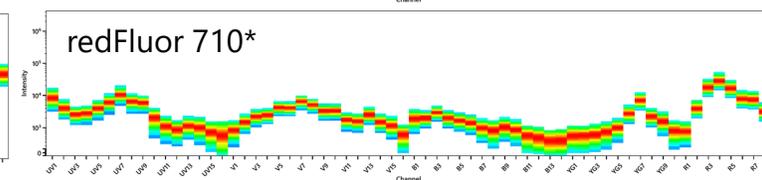
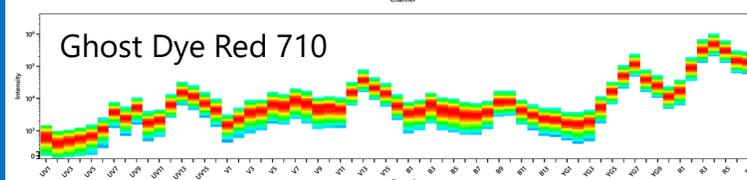
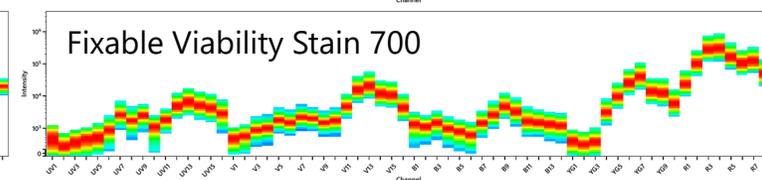
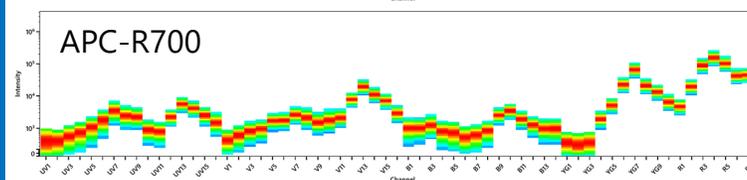
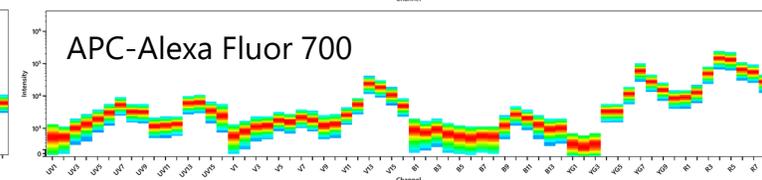
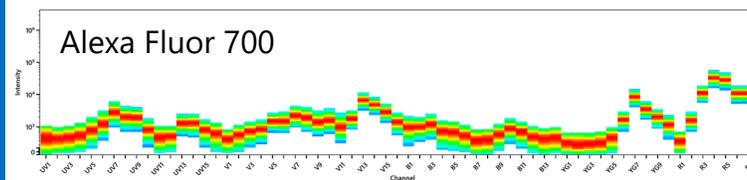
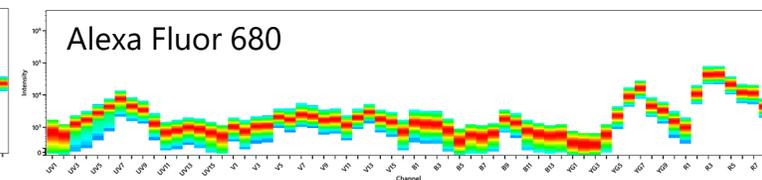
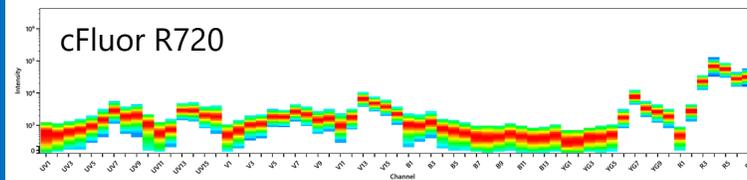
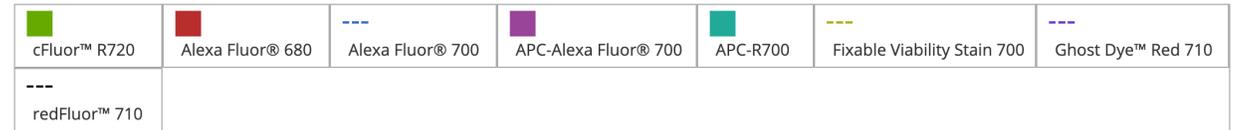
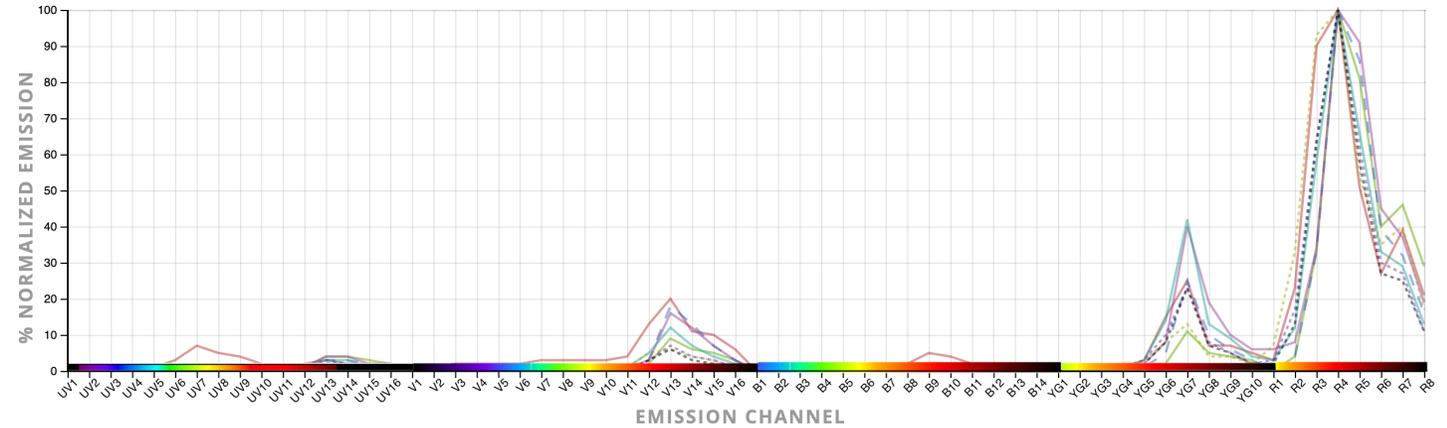


# Red Laser Excited Dyes with Similar Signatures

## Similarity™ Indices

|                             |             |                 |                 |                     |          |                             |                   |              |
|-----------------------------|-------------|-----------------|-----------------|---------------------|----------|-----------------------------|-------------------|--------------|
| cFluor R720                 | 1           |                 |                 |                     |          |                             |                   |              |
| Alexa Fluor 680             | 0.88        | 1               |                 |                     |          |                             |                   |              |
| Alexa Fluor 700             | 0.98        | 0.89            | 1               |                     |          |                             |                   |              |
| APC-Alexa Fluor 700         | 0.97        | 0.88            | 0.99            | 1                   |          |                             |                   |              |
| APC-R700                    | 0.94        | 0.95            | 0.96            | 0.97                | 1        |                             |                   |              |
| Fixable Viability Stain 700 | 0.89        | 0.98            | 0.88            | 0.87                | 0.94     | 1                           |                   |              |
| Ghost Dye Red 710           | 0.94        | 0.97            | 0.95            | 0.94                | 0.99     | 0.97                        | 1                 |              |
| redFluor 710                | 0.94        | 0.97            | 0.95            | 0.94                | 0.99     | 0.97                        | 1                 | 1            |
|                             | cFluor R720 | Alexa Fluor 680 | Alexa Fluor 700 | APC-Alexa Fluor 700 | APC-R700 | Fixable Viability Stain 700 | Ghost Dye Red 710 | redFluor 710 |

Complexity™ Index: 153.26

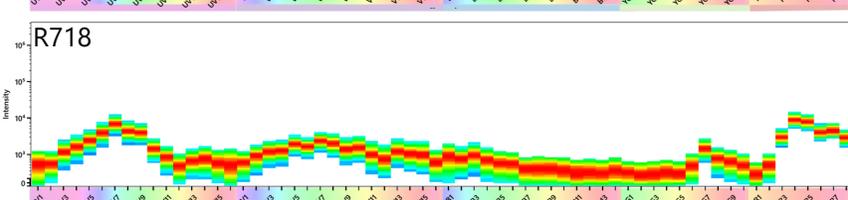
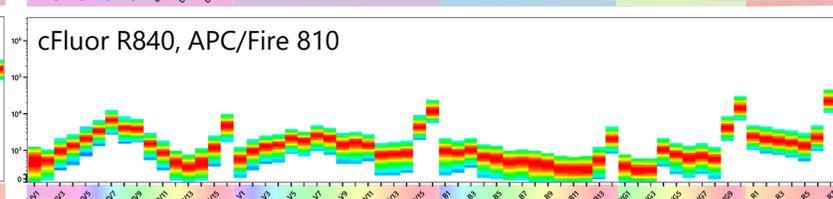
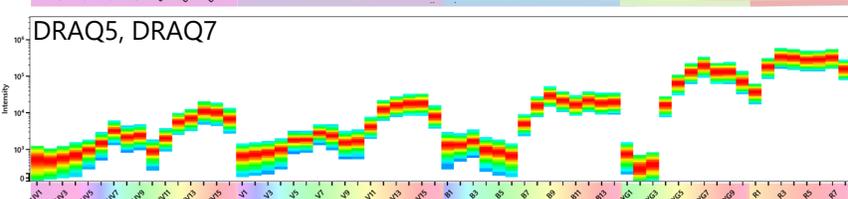
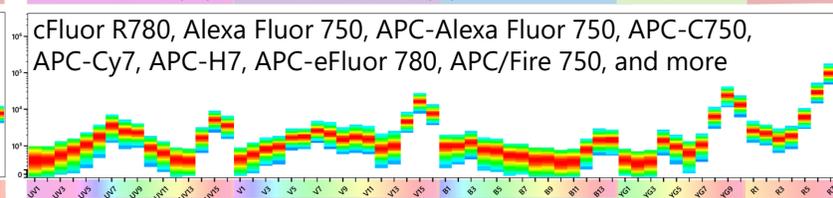
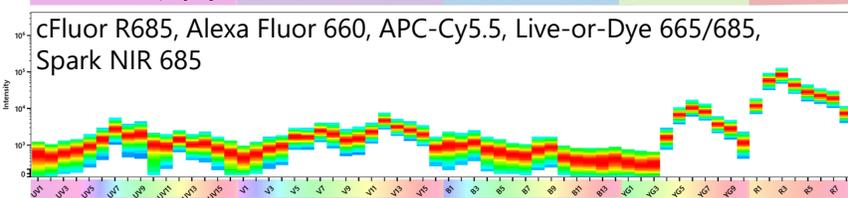
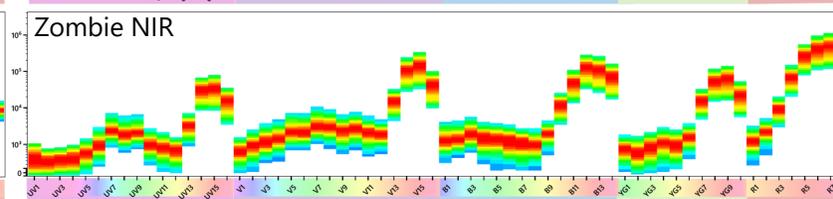
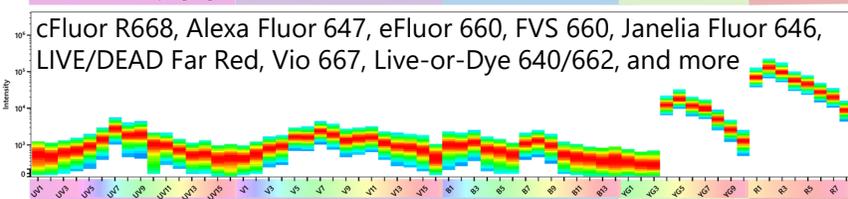
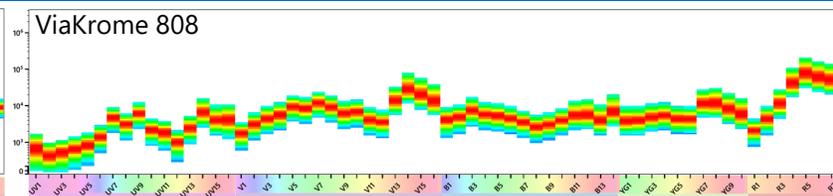
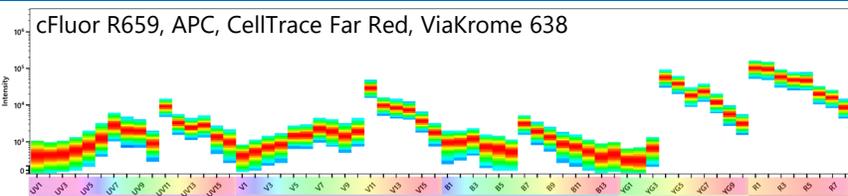


\*Signature obtained from single stained Jurkat cells, which have higher autofluorescence in the UV channels when compared to PBMCs which were used to generate the other signatures on this page.

redFluor is a trademark of Tonbo Biosciences. Trademarks are the property of their respective owners.

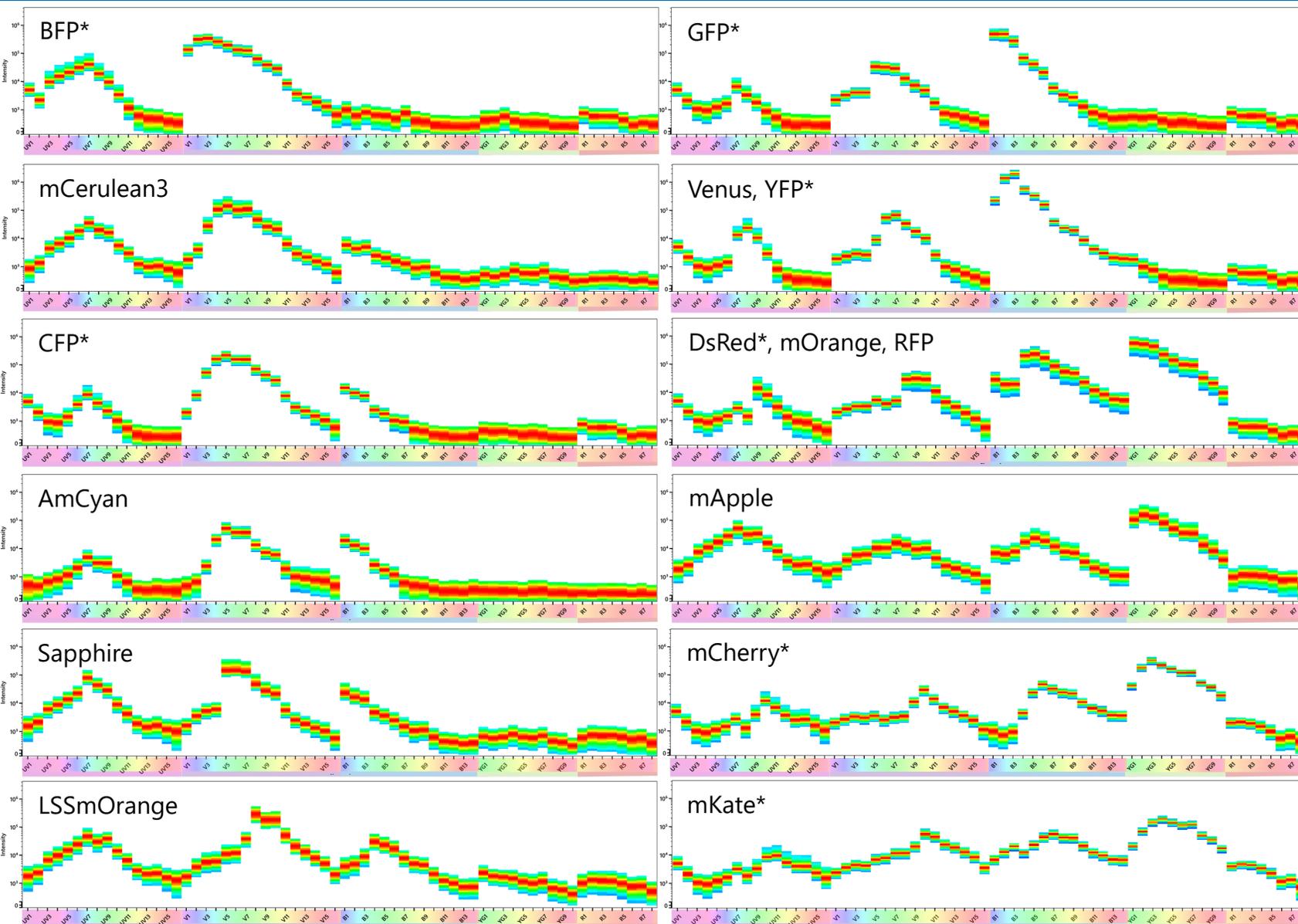


# Red Laser Excited Dyes with Unique Signatures

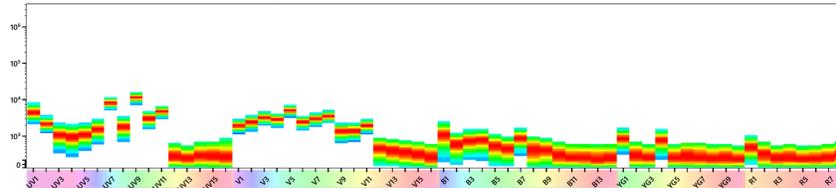


# Fluorescent Proteins

# Fluorescent Proteins with Unique Signatures



\*Beads were used to generate these spectrum plots. The beads have a lot of autofluorescence in many UV and Violet channels, as shown below in the spectrum plot for the unstained bead:



# FLUOROCHROME PEAK CHANNELS

| Peak Channel | UV Excited Fluorochromes                                      |
|--------------|---|
| UV2          | BUV395  |
| UV6          | Alexa Fluor 350, LIVE/DEAD Blue, eFluor 455, Ghost Dye UV 450 |
| UV7          | BUV496, DAPI, Zombie UV                                       |
| UV9          | BUV563  |
| UV10         | BUV615  |
| UV11         | BUV661  |
| UV14         | BUV737  |
| UV16         | BUV805  |

| Peak Channel | Violet Excited Fluorochromes  |
|--------------|---|
| V1           | BV421   |
| V2           | cFluor V420, Super Bright 436, Alexa Fluor 405, Zombie Violet, ViaKrome 405   |
| V3           | cFluor V450, eFluor 450, Pacific Blue, V450, VioBlue, BFP, LIVE/DEAD Violet, CellTrace Violet, Fixable Viability Stain 450, Ghost Dye Violet 450, violetFluor 450 |
| V5           | BV480, AmCyan, mCerulean3, violetFluor 500  |
| V6           | CFP, Sapphire   |
| V7           | BV510, eFluor 506, Amethyst Orange, VioGreen, Zombie Aqua, OC515, V500, LIVE/DEAD Aqua, Krome Orange, Ghost Dye Violet 510 & 540, Fixable Viability Stain 510     |
| V8           | cFluor V547, BV570, Pacific Orange, LSSmOrange, LIVE/DEAD Yellow, Live-or-Dye 405/545   |
| V10          | cFluor V610, BV605, Qdot 605, Super Bright 600, Zombie Yellow, Fixable Viability Stain 575V   |
| V11          | BV650, Qdot 655, Super Bright 645   |
| V13          | BV711, Qdot 705, Super Bright 702   |
| V14          | BV750   |
| V15          | BV785, Qdot 800, Super Bright 780   |

| Peak Channel | Blue Excited Fluorochromes   |
|--------------|--|
| B1           | cFluor B515, Vio 515, BB515, CellTrace Calcein Green AM, Live-or-Dye 488/515   |
| B2           | cFluor B532, Alexa Fluor 488, CFSE, CellTracker Green CMFDA, FITC, GFP, Ghost Dye Blue 516, Kiravia Blue 520, Zombie Green   |
| B3           | cFluor B548, Alexa Fluor 532, eFluor 520, Fixable Viability Stain 520, LIVE/DEAD Green, Live-or-Dye 510/550, MitoTracker Green, Northern Lights 493, Spark Blue 550, SYTOX Green, Venus, VioBright FITC, YFP |
| B6           | BB630, MitoSOX Red   |
| B7           | BB660  |
| B8           | PerCP  |
| B9           | cFluor B690, PerCP-Cy5.5, BB700  |
| B10          | PerCP-eFluor 710, PerCP-Vio 700  |
| B12          | BB755  |
| B14          | BB790  |

| Peak Channel | Red Excited Fluorochromes   |
|--------------|---|
| R1           | cFluor R659, APC, CellTrace Far Red, ViaKrome 638   |
| R2           | cFluor R668, Alexa Fluor 647, eFluor 660, Fixable Viability Stain 660, Janelia Fluor 646, LIVE/DEAD Far Red, Live-or-Dye 640/662, Northern Lights 637, SYTOX Deep Red, Vio 667, VioBright 667                           |
| R4           | cFluor R720, Alexa Fluor 680, Alexa Fluor 700, APC-Alexa Fluor 700, APC-R700, Fixable Viability Stain 700, Ghost Dye Red 710, R718, redFluor 710  |
| R5           | ViaKrome 808  |
| R6           | Zombie NIR  |
| R7           | cFluor R780, Alexa Fluor 750, APC-Alexa Fluor 750, APC-C750, APC-Cy7, APC-eFluor 780, APC/Fire 750, APC-H7, APC-Vio 770, eFluor 780, Fixable Viability Stain 780, Ghost Dye Red 780, LIVE/DEAD NIR, Live-or-Dye 750/777 |
| R8           | cFluor R840, APC/Fire 810   |

| Peak Channel | Yellow-Green Excited Fluorochromes  |
|--------------|---|
| YG1          | cFluor BYG575, cFluor YG584, Alexa Fluor 546, Alexa Fluor 555, BYG584, CellTrace Yellow, Cy3, DsRed, eFluor 570, Fixable Viability Stain 570, Live-or-Dye 568/583, MitoTracker Orange, mOrange, Northern Lights 557, PE, RFP, Spark YG 570, SYTOX Orange, TAMRA, TMRE, TMRM, ViaKrome 561 |
| YG2          | mApple  |
| YG3          | cFluor BYG610, cFluor YG610, mCherry, Alexa Fluor 568, Alexa Fluor 594, CellTrace BODIPY, ECD, eFluor 615, LIVE/DEAD Red, Live-or-Dye 594/614, PE-CF594, PE/Dazzle 594, PE-eFluor 610, PE-Texas Red, PE-Vio 615, Zombie Red   |
| YG4          | 7-AAD, Fixable Viability Stain 620, mKate, PE-Alexa Fluor 610, PE/Fire 640, PI  |
| YG5          | cFluor BYG667, PE-Cy5   |
| YG6          | cFluor BYG680   |
| YG7          | cFluor BYG710, PE-Alexa Fluor 700, PE-Cy5.5, PE/Fire 700  |
| YG9          | cFluor BYG781, PE-Cy7, PE-Vio 770   |

# SPILOVER SPREADING MATRICES (SSM)

# SSM: OMIP-069 40 Fluorochromes - CD4 Stained Human PBMCs\*

|                  | BUV395 | LIVE/DEAD Blue | BUV496 | BUV563 | BUV615 | BUV661 | BUV737 | BUV805 | BV421 | Super Bright 436 | eFluor 450 | BV480 | BV510 | Pacific Orange | BV570 | BV605 | BV650 | BV711 | BV750 | BV785 | BB515 | FITC  | Spark Blue 550 | PerCP | PerCP-Cy5.5 | PerCP-eFluor 710 | PE   | cFluor YG584 | PE/Dazzle 594 | PE-Alexa Fluor 610 | PE-Cy5 | PE-Alexa Fluor 700 | PE-Cy7 | PE/Fire 810 | APC  | Alexa Fluor 647 | Spark NIR 685 | APC-R700 | APC-H7 | APC/Fire 810 | Sum    |
|------------------|--------|----------------|--------|--------|--------|--------|--------|--------|-------|------------------|------------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|-------|-------------|------------------|------|--------------|---------------|--------------------|--------|--------------------|--------|-------------|------|-----------------|---------------|----------|--------|--------------|--------|
| BUV395           |        | 1.97           | 5.06   | 3.27   | 0.44   | 0.21   | 0.17   | 0.65   | 1.18  | 2.75             | 1.22       | 1.10  | 3.78  | 2.76           | 1.08  | 0.78  | 0.67  | 1.35  | 1.05  | 0.36  | 5.46  | 5.89  | 0.83           | 0.67  | 1.79        | 0.70             | 1.27 | 0.90         | 1.05          | 1.32               | 1.58   | 0.87               | 0.40   | 0.45        | 1.23 | 1.22            | 2.03          | 0.76     | 0.47   | 0.15         | 58.90  |
| LIVE/DEAD Blue   | 5.01   |                | 9.17   | 0.61   | 0.15   | 1.00   | 0.27   | 0.44   | 3.14  | 4.29             | 5.68       | 2.13  | 10.94 | 7.55           | 2.62  | 1.05  | 1.34  | 0.61  | 0.07  | 0.54  | 2.23  | 2.19  | 2.40           | 0.81  | 0.38        | 0.28             | 0.92 | 0.37         | 2.98          | 0.44               | 1.14   | 0.44               | 0.43   | 0.18        | 0.87 | 1.61            | 0.85          | 0.62     | 0.27   | 0.41         | 76.44  |
| BUV496           | 0.83   | 0.94           |        | 1.44   | 0.05   | 0.45   | 0.32   | 0.40   | 0.43  | 1.70             | 0.66       | 1.44  | 6.21  | 4.87           | 2.10  | 0.71  | 0.39  | 0.25  | 0.12  | 0.37  | 4.89  | 4.13  | 0.64           | 0.62  | 0.73        | 0.40             | 0.67 | 0.38         | 0.41          | 0.57               | 0.91   | 0.39               | 0.31   | 0.04        | 0.57 | 1.13            | 0.50          | 0.17     | 0.32   | 0.08         | 41.53  |
| BUV563           | 0.47   | 0.17           | 1.29   |        | 0.42   | 0.70   | 0.44   | 0.64   | 0.55  | 0.89             | 0.44       | 0.89  | 3.04  | 3.25           | 1.76  | 0.96  | 0.42  | 0.23  | 0.23  | 0.49  | 1.22  | 2.52  | 1.23           | 2.09  | 1.22        | 0.71             | 7.79 | 2.56         | 4.81          | 4.27               | 2.85   | 0.61               | 0.31   | 0.16        | 1.00 | 0.99            | 0.81          | 0.32     | 0.28   | 0.12         | 53.17  |
| BUV615           | 0.85   | 0.74           | 3.82   |        | 3.00   | 3.07   | 2.39   | 3.40   | 0.99  | 1.18             | 0.61       | 1.23  | 4.08  | 4.43           | 1.62  | 1.21  | 1.13  | 1.03  | 1.22  | 1.15  | 2.27  | 6.08  | 2.23           | 1.92  | 2.06        | 1.47             | 3.32 | 2.54         | 3.04          | 2.97               | 3.17   | 1.84               | 0.99   | 0.32        | 1.38 | 2.59            | 1.18          | 1.52     | 0.48   | 0.50         | 79.02  |
| BUV661           | 0.55   | 0.55           | 1.34   | 0.87   | 0.23   |        | 3.40   | 3.22   | 0.67  | 0.99             | 0.40       | 0.32  | 1.84  | 4.32           | 0.78  | 0.43  | 2.69  | 1.42  | 1.46  | 1.31  | 3.98  | 5.07  | 1.69           | 3.18  | 2.53        | 1.99             | 1.07 | 0.76         | 4.80          | 4.92               | 5.52   | 2.50               | 1.27   | 0.53        | 4.47 | 8.66            | 5.33          | 2.88     | 2.85   | 0.68         | 91.48  |
| BUV737           | 0.83   | 0.90           | 1.68   | 1.07   | 0.09   | 0.71   |        | 6.24   | 0.95  | 0.97             | 0.34       | 0.20  | 1.41  | 3.85           | 1.04  | 0.40  | 1.41  | 1.85  | 3.14  | 2.54  | 0.62  | 4.05  | 0.90           | 2.86  | 3.30        | 3.97             | 0.13 | 0.41         | 0.75          | 1.22               | 1.61   | 2.20               | 1.16   | 1.02        | 3.11 | 5.60            | 4.13          | 3.20     | 2.37   | 1.10         | 73.32  |
| BUV805           | 1.16   | 1.00           | 1.66   | 1.20   | 0.16   | 0.13   | 1.27   |        | 0.94  | 0.50             | 0.41       | 0.21  | 1.15  | 3.00           | 0.37  | 0.74  | 0.87  | 0.68  | 0.30  | 1.26  | 1.30  | 1.66  | 0.31           | 1.17  | 0.44        | 0.83             | 0.15 | 0.03         | 1.28          | 0.50               | 0.43   | 0.20               | 0.58   | 0.62        | 1.05 | 2.39            | 2.01          | 0.31     | 2.18   | 1.18         | 35.59  |
| BV421            | 0.24   | 0.89           | 1.35   | 0.75   | 0.11   | 0.15   | 0.15   | 0.08   |       | 9.62             | 5.31       | 2.47  | 6.39  | 5.35           | 1.58  | 0.76  | 0.04  | 0.27  | 0.39  | 0.21  | 0.71  | 0.02  | 0.30           | 0.44  | 0.50        | 0.36             | 0.26 | 0.21         | 0.99          | 0.57               | 0.62   | 0.18               | 0.08   | 0.17        | 0.38 | 0.44            | 0.19          | 0.40     | 0.09   | 0.05         | 43.06  |
| Super Bright 436 | 0.14   | 0.73           | 0.37   | 0.44   | 0.09   | 0.15   | 0.15   | 0.11   | 5.17  |                  | 4.66       | 2.64  | 6.88  | 5.83           | 1.82  | 0.91  | 0.30  | 0.20  | 0.32  | 0.17  | 1.04  | 1.85  | 0.83           | 0.62  | 0.76        | 0.41             | 0.27 | 0.25         | 0.69          | 0.92               | 0.62   | 0.25               | 0.27   | 0.16        | 0.60 | 0.80            | 0.71          | 0.32     | 0.34   | 0.13         | 42.93  |
| eFluor 450       | 0.59   | 0.95           | 2.27   | 0.95   | 0.08   | 0.36   | 0.24   | 0.44   | 5.34  | 10.54            |            | 2.89  | 7.24  | 5.93           | 1.78  | 0.92  | 0.38  | 0.45  | 0.07  | 0.61  | 1.25  | 3.87  | 0.40           | 1.09  | 0.55        | 0.62             | 0.17 | 0.19         | 0.98          | 1.03               | 0.44   | 0.64               | 0.12   | 0.08        | 0.98 | 1.48            | 0.89          | 0.24     | 0.58   | 0.45         | 58.07  |
| BV480            | 0.34   | 0.80           | 3.44   | 1.92   | 0.39   | 0.22   | 0.07   | 0.26   | 1.99  | 3.82             | 2.50       |       | 12.68 | 11.33          | 4.71  | 2.50  | 0.65  | 0.62  | 0.50  | 0.49  | 6.62  | 7.16  | 1.89           | 0.78  | 0.38        | 0.27             | 1.29 | 0.51         | 1.21          | 0.54               | 0.40   | 0.15               | 0.29   | 0.18        | 0.41 | 0.71            | 0.55          | 0.33     | 0.39   | 0.15         | 73.46  |
| BV510            | 0.24   | 0.78           | 2.22   | 2.35   | 0.63   | 0.54   | 0.07   | 0.65   | 1.30  | 2.55             | 1.76       | 2.36  |       | 9.87           | 5.17  | 3.37  | 1.37  | 0.83  | 0.89  | 0.98  | 5.56  | 5.49  | 2.14           | 1.31  | 1.06        | 0.30             | 1.39 | 0.49         | 2.52          | 1.36               | 0.17   | 0.34               | 0.35   | 0.28        | 0.23 | 0.94            | 1.17          | 0.60     | 0.34   | 0.39         | 64.35  |
| Pacific Orange   | 0.18   | 2.13           | 2.89   | 1.24   | 0.57   | 0.32   | 0.81   | 0.62   | 1.85  | 2.81             | 0.31       | 2.40  | 2.67  |                | 5.13  | 3.77  | 2.12  | 1.01  | 0.95  | 1.99  | 5.31  | 2.92  | 2.45           | 3.06  | 2.15        | 0.90             | 1.41 | 0.68         | 2.71          | 3.50               | 0.71   | 0.78               | 0.61   | 0.18        | 1.17 | 1.08            | 1.96          | 0.77     | 0.11   | 1.56         | 67.79  |
| BV570            | 0.48   | 0.95           | 1.49   | 1.63   | 0.71   | 0.42   | 0.38   | 0.58   | 2.00  | 2.89             | 1.75       | 1.26  | 3.67  | 4.99           |       | 3.30  | 1.61  | 0.46  | 1.01  | 0.66  | 4.92  | 6.49  | 2.24           | 1.77  | 1.27        | 0.37             | 3.44 | 1.51         | 4.23          | 3.34               | 2.20   | 1.03               | 0.10   | 0.32        | 0.77 | 2.16            | 0.31          | 0.72     | 0.12   | 0.29         | 67.84  |
| BV605            | 0.17   | 0.75           | 0.99   | 0.59   | 0.84   | 1.00   | 0.85   | 1.04   | 1.16  | 1.67             | 0.86       | 0.78  | 4.05  | 5.73           | 2.21  |       | 2.28  | 1.23  | 1.49  | 1.60  | 6.23  | 7.50  | 2.69           | 1.86  | 1.51        | 1.25             | 2.94 | 2.44         | 5.30          | 3.94               | 3.15   | 1.53               | 0.87   | 0.37        | 1.43 | 2.66            | 1.65          | 0.89     | 1.01   | 0.30         | 78.79  |
| BV650            | 0.14   | 0.95           | 1.72   | 1.14   | 0.34   | 1.20   | 0.96   | 1.18   | 1.14  | 2.52             | 1.44       | 0.78  | 3.50  | 1.93           | 0.76  | 0.83  |       | 1.87  | 2.18  | 2.01  | 2.87  | 3.58  | 1.23           | 1.53  | 1.39        | 0.93             | 0.97 | 0.59         | 3.43          | 3.14               | 2.97   | 1.42               | 0.78   | 0.34        | 2.34 | 4.38            | 2.98          | 1.54     | 1.54   | 0.53         | 65.07  |
| BV711            | 0.22   | 0.79           | 1.06   | 0.67   | 0.17   | 0.46   | 1.83   | 2.28   | 1.42  | 2.53             | 1.21       | 0.79  | 2.02  | 1.13           | 0.93  | 0.81  | 0.95  |       | 4.05  | 4.16  | 2.16  | 2.37  | 1.07           | 1.27  | 1.90        | 1.96             | 0.49 | 0.09         | 0.15          | 0.99               | 1.24   | 2.96               | 1.16   | 0.53        | 2.00 | 2.89            | 3.44          | 3.08     | 1.92   | 1.18         | 60.33  |
| BV750            | 0.21   | 0.90           | 1.70   | 0.89   | 0.03   | 0.15   | 2.47   | 2.80   | 1.29  | 2.12             | 0.96       | 0.72  | 2.85  | 1.84           | 0.85  | 0.22  | 0.48  | 1.65  |       | 6.14  | 2.75  | 2.10  | 0.70           | 0.52  | 0.88        | 1.15             | 0.44 | 0.23         | 0.99          | 0.82               | 0.81   | 0.56               | 0.69   | 0.62        | 1.16 | 1.99            | 1.78          | 0.97     | 1.70   | 1.54         | 50.68  |
| BV785            | 0.29   | 0.72           | 0.85   | 0.83   | 0.07   | 0.12   | 1.17   | 2.99   | 1.49  | 2.05             | 1.19       | 0.56  | 0.78  | 0.41           | 0.65  | 0.30  | 0.53  | 0.81  | 2.93  |       | 1.52  | 0.90  | 0.64           | 1.06  | 0.61        | 0.39             | 0.23 | 0.09         | 0.96          | 0.74               | 0.86   | 0.30               | 0.71   | 0.50        | 0.83 | 1.58            | 1.37          | 0.05     | 1.88   | 2.11         | 36.04  |
| BB515            | 0.15   | 0.53           | 0.73   | 0.51   | 0.38   | 0.12   | 0.08   | 0.10   | 0.36  | 0.84             | 0.66       | 0.89  | 5.22  | 7.12           | 2.27  | 1.67  | 0.56  | 0.47  | 0.49  | 0.74  |       | 21.91 | 4.37           | 1.02  | 0.72        | 0.73             | 1.05 | 0.69         | 2.46          | 1.52               | 1.19   | 0.54               | 0.33   | 0.26        | 0.55 | 1.09            | 0.70          | 0.17     | 0.24   | 0.07         | 63.48  |
| FITC             | 0.22   | 0.53           | 1.25   | 1.05   | 0.44   | 0.22   | 0.45   | 0.20   | 0.60  | 1.30             | 0.73       | 0.66  | 4.24  | 7.20           | 2.21  | 1.71  | 0.57  | 0.67  | 0.60  | 1.05  | 18.20 |       | 3.58           | 0.29  | 0.47        | 1.13             | 1.08 | 0.97         | 2.53          | 2.17               | 1.23   | 0.33               | 0.19   | 0.26        | 1.10 | 0.60            | 0.71          | 0.60     | 0.39   | 0.44         | 62.21  |
| Spark Blue 550   | 0.65   | 0.70           | 2.29   | 3.78   | 2.54   | 1.33   | 2.27   | 0.98   | 0.33  | 1.79             | 2.07       | 0.17  | 6.47  | 8.24           | 3.85  | 1.07  | 1.03  | 0.42  | 0.74  | 0.49  | 12.41 | 16.94 |                | 2.69  | 2.09        | 1.48             | 3.67 | 2.47         | 3.80          | 2.43               | 2.41   | 0.33               | 0.12   | 0.61        | 0.41 | 3.34            | 2.04          | 1.73     | 0.54   | 0.13         | 100.89 |
| PerCP            | 0.58   | 0.27           | 5.15   | 2.60   | 0.25   | 1.24   | 1.22   | 1.01   | 1.10  | 4.52             | 2.00       | 1.29  | 3.74  | 3.85           | 0.82  | 1.54  | 2.86  | 1.54  | 1.03  | 1.28  | 1.38  | 4.87  | 0.69           |       | 5.34        | 2.82             | 2.00 | 1.45         | 7.45          | 7.81               | 7.90   | 1.65               | 1.07   | 0.84        | 3.21 | 4.03            | 2.71          | 2.12     | 1.27   | 0.89         | 97.38  |
| PerCP-Cy5.5      | 0.69   | 1.50           | 3.48   | 2.23   | 0.45   | 1.10   | 1.86   | 2.41   | 0.92  | 3.31             | 0.82       | 0.60  | 3.44  | 2.26           | 0.43  | 1.52  | 2.75  | 2.83  | 2.79  | 2.56  | 0.45  | 5.08  | 1.04           | 9.87  |             | 5.90             | 1.51 | 1.46         | 6.44          | 7.63               | 7.47   | 4.91               | 2.60   | 1.44        | 3.03 | 6.52            | 6.05          | 3.34     | 3.28   | 1.15         | 117.14 |
| PerCP-eFluor 710 | 0.36   | 1.02           | 1.49   | 1.03   | 0.21   | 0.66   | 1.78   | 2.06   | 0.76  | 1.31             | 0.48       | 0.11  | 3.00  | 3.20           | 1.32  | 0.23  | 1.53  | 4.24  | 3.60  | 3.30  | 4.15  | 4.85  | 1.74           | 6.61  | 7.36        |                  | 0.56 | 0.81         | 3.36          | 3.78               | 3.71   | 8.49               | 2.95   | 1.92        | 2.48 | 4.98            | 5.57          | 4.18     | 2.93   | 1.36         | 103.48 |
| PE               | 0.17   | 0.37           | 0.58   | 1.16   | 0.54   | 0.36   | 0.13   | 0.18   | 0.34  | 0.45             | 0.39       | 0.45  | 2.44  | 3.04           | 2.46  | 1.62  | 0.76  | 0.40  | 0.36  | 0.38  | 3.52  | 3.91  | 1.83           | 2.85  | 1.72        | 1.12             |      | 3.62         | 6.60          | 5.90               | 3.86   | 0.94               | 0.50   | 0.26        | 0.92 | 1.65            | 0.78          | 0.37     | 0.39   | 0.09         | 57.41  |
| cFluor YG584     | 0.12   | 0.22           | 1.39   | 1.48   | 1.75   | 1.11   | 0.73   | 0.22   | 0.76  | 1.14             | 0.46       | 0.20  | 2.07  | 1.92           | 1.38  | 0.95  | 0.60  | 0.38  | 0.45  | 0.16  | 1.12  | 1.95  | 0.41           | 1.70  | 1.38        | 0.99             | 4.13 |              | 2.83          | 3.55               | 2.38   | 1.24               | 0.71   | 0.33        | 1.03 |                 |               |          |        |              |        |

# SSM: 40C with cFluors Dyes\* (see page 19)

|                    | BUV395 | LIVE/DEAD Blue | BUV496 | BUV563 | BUV615 | BUV661 | BUV737 | BUV805 | cFluor V420 | BV421 | cFluor V450 | BV480 | BV510 | cFluor V547 | BV570 | BV605 | BV650 | BV711 | BV750 | BV785 | cFluor B515 | FITC  | cFluor B548 | PerCP | PerCP-Cy5.5 | PerCP-eFluor 710 | PE   | cFluor YG584 | cFluor BYG610 | PE-Alexa Fluor 610 | cFluor BYG667 | cFluor BYG710 | PE-Cy7 | PE/Fire 810 | APC  | cFluor R668 | cFluor R685 | APC-R700 | APC-H7 | APC/Fire 810 | SUM    |       |
|--------------------|--------|----------------|--------|--------|--------|--------|--------|--------|-------------|-------|-------------|-------|-------|-------------|-------|-------|-------|-------|-------|-------|-------------|-------|-------------|-------|-------------|------------------|------|--------------|---------------|--------------------|---------------|---------------|--------|-------------|------|-------------|-------------|----------|--------|--------------|--------|-------|
| BUV395             |        | 3.62           | 6.10   | 1.60   | 1.11   | 0.30   | 0      | 0      | 3.60        | 2.71  | 0.39        | 2.00  | 5.50  | 4.82        | 1.05  | 0.61  | 0     | 0.35  | 0     | 0     | 0           | 0     | 0           | 0.23  | 0.37        | 0.67             | 0.94 | 0.22         | 0             | 0                  | 0.27          | 0             | 0.19   | 0.31        | 0.25 | 0.94        | 0           | 0.48     | 0.12   | 0.47         | 39.23  |       |
| LIVE/DEAD Blue     | 1.80   |                | 9.73   | 2.83   | 0.61   | 0      | 0      | 0.93   | 6.87        | 3.90  | 5.31        | 3.52  | 12.68 | 11.43       | 3.51  | 1.37  | 0.78  | 0     | 0     | 0     | 0           | 0     | 0.80        | 0     | 1.38        | 0.96             | 0.75 | 0.64         | 1.15          | 0.63               | 0             | 0             | 0      | 0.42        | 1.41 | 2.63        | 2.36        | 0        | 0.21   | 0            | 78.61  |       |
| BUV496             | 0.76   | 1.82           |        | 3.81   | 1.73   | 0.76   | 0.65   | 0.70   | 1.69        | 1.37  | 0.77        | 4.02  | 13.83 | 10.67       | 3.08  | 1.64  | 0.19  | 0     | 0.34  | 0.31  | 9.99        | 10.45 | 2.65        | 0.54  | 0           | 0                | 1.17 | 0.95         | 0.66          | 0                  | 0.59          | 0             | 0      | 0.14        | 0.36 | 0           | 0.34        | 0.23     | 0.18   | 0            | 76.42  |       |
| BUV563             | 0.64   | 0.28           | 1.37   |        | 2.97   | 1.60   | 1.11   | 1.02   | 0           | 0     | 0           | 2.15  | 6.06  | 4.96        | 1.75  | 0.96  | 0.44  | 0.31  | 0     | 0.28  | 2.59        | 2.71  | 1.87        | 1.38  | 1.03        | 0.74             | 2.91 | 2.66         | 2.37          | 2.08               | 1.74          | 0.58          | 0.24   | 0.32        | 1.00 | 1.34        | 0.60        | 0.41     | 0.22   | 0.11         | 52.79  |       |
| BUV615             | 0.66   | 0.60           | 0      | 2.92   |        | 3.42   | 3.49   | 3.69   | 0.84        | 0.75  | 0.12        | 0.59  | 2.27  | 1.67        | 0.36  | 1.84  | 1.20  | 0.99  | 1.10  | 0.78  | 0           | 1.41  | 0.62        | 2.44  | 2.03        | 1.71             | 1.95 | 1.64         | 2.82          | 3.42               | 3.26          | 1.94          | 0.98   | 0.57        | 2.63 | 3.36        | 2.57        | 1.46     | 0.51   | 0.45         | 63.06  |       |
| BUV661             | 0.75   | 0.91           | 0.81   | 0.85   | 1.01   |        | 5.93   | 6.36   | 0.73        | 0.61  | 0           | 0.38  | 2.17  | 1.43        | 0     | 0.54  | 2.39  | 1.58  | 1.75  | 1.35  | 0.93        | 1.42  | 0.43        | 2.59  | 2.15        | 2.07             | 0.49 | 0.90         | 1.79          | 2.28               | 3.26          | 2.53          | 0.95   | 0.59        | 6.37 | 10.23       | 7.75        | 3.44     | 1.74   | 1.20         | 82.67  |       |
| BUV737             | 1.03   | 0.68           | 0      | 0      | 0      | 1.28   |        | 12.96  | 0.57        | 0.35  | 0           | 0     | 0     | 0           | 0     | 0.35  | 0.39  | 2.15  | 2.73  | 2.33  | 1.25        | 0     | 0           | 1.88  | 2.38        | 3.75             | 0.32 | 0            | 0             | 0.71               | 1.05          | 2.85          | 0.97   | 1.06        | 2.12 | 4.26        | 4.81        | 4.87     | 2.57   | 1.88         | 61.55  |       |
| BUV805             | 1.77   | 1.34           | 1.87   | 0      | 0.45   | 0.24   | 3.28   |        | 1.48        | 1.03  | 0.19        | 0.90  | 1.76  | 1.70        | 0.59  | 0.14  | 0.30  | 0     | 0.99  | 2.07  | 0           | 0     | 0           | 1.13  | 1.19        | 1.33             | 0.57 | 0            | 0             | 0                  | 0             | 0.51          | 0.61   | 0.64        | 0    | 0.86        | 0.90        | 1.10     | 1.62   | 1.96         | 32.52  |       |
| cFluor V420        | 0.42   | 1.39           | 3.00   | 0      | 0.86   | 0.25   | 0      | 0      |             | 8.94  | 6.89        | 4.03  | 7.84  | 5.93        | 2.31  | 1.13  | 0     | 0.55  | 0.54  | 0.39  | 4.60        | 4.44  | 0           | 0     | 0           | 0                | 0    | 0.84         | 1.02          | 0.86               | 0             | 0             | 0      | 0.84        | 1.33 | 0           | 0           | 0.50     | 0      | 58.89        |        |       |
| BV421              | 0.68   | 2.03           | 4.93   | 2.27   | 0.49   | 0.07   | 0      | 0.19   | 14.42       |       | 6.73        | 4.47  | 10.32 | 8.27        | 2.66  | 1.01  | 0     | 0.23  | 0.10  | 0     | 2.48        | 2.69  | 0.79        | 0.09  | 0.31        | 0.14             | 0.42 | 0.66         | 0             | 0                  | 0.09          | 0.21          | 0      | 0           | 0.25 | 0           | 0           | 0        | 0      | 66.96        |        |       |
| cFluor V450        | 0      | 1.32           | 4.87   | 1.04   | 0.30   | 0.31   | 0      | 0      | 11.68       | 6.48  |             | 4.81  | 11.98 | 9.40        | 3.01  | 1.47  | 0.26  | 0     | 0     | 0     | 0           | 1.70  | 0           | 0.41  | 1.03        | 0.78             | 0    | 0            | 0             | 0.96               | 0             | 0             | 0      | 0           | 0    | 0           | 0           | 0.94     | 0.50   | 0            | 0.35   | 63.58 |
| BV480              | 0.43   | 1.55           | 8.73   | 4.96   | 1.53   | 0.57   | 0.34   | 0      | 3.45        | 2.12  | 2.89        |       | 19.59 | 17.25       | 6.70  | 3.14  | 0.89  | 0.37  | 0.54  | 0.08  | 13.09       | 14.04 | 3.51        | 0.33  | 0.66        | 0.55             | 1.33 | 1.71         | 1.07          | 0.68               | 0.64          | 0.26          | 0      | 0.20        | 0.41 | 0           | 0.34        | 0        | 0      | 0.18         | 114.13 |       |
| BV510              | 0.36   | 0.76           | 8.55   | 5.23   | 2.45   | 1.20   | 1.33   | 1.47   | 2.58        | 1.60  | 1.98        | 4.55  |       | 14.20       | 6.87  | 3.46  | 1.55  | 0.88  | 1.22  | 1.02  | 2.59        | 2.79  | 1.19        | 0.54  | 0           | 0.57             | 1.33 | 1.61         | 1.33          | 1.40               | 1.00          | 0.35          | 0      | 0           | 0.83 | 1.78        | 0.98        | 0.43     | 0.22   | 0.19         | 80.41  |       |
| cFluor V547        | 0.38   | 0              | 0      | 3.01   | 1.92   | 1.10   | 0.89   | 1.08   | 0           | 0     | 0           | 2.52  | 9.50  | 8.27        | 4.30  | 2.20  | 1.20  | 1.53  | 1.37  | 2.11  | 4.38        | 0     | 1.13        | 0     | 0           | 0                | 0.57 | 1.33         | 1.61          | 1.72               | 0.84          | 0.47          | 0      | 0           | 0.40 | 1.64        | 1.71        | 0.98     | 0      | 0.56         | 56.83  |       |
| BV570              | 0.34   | 0              | 0      | 4.36   | 2.11   | 1.16   | 0.86   | 0.98   | 4.92        | 2.95  | 2.18        | 1.16  | 2.84  | 2.13        |       | 3.71  | 1.89  | 1.05  | 0.97  | 0.89  | 2.06        | 1.88  | 0           | 1.79  | 1.36        | 0.90             | 2.73 | 2.37         | 2.88          | 2.74               | 2.19          | 0.93          | 0.57   | 0.22        | 1.86 | 3.39        | 1.74        | 0.71     | 0      | 64.81        |        |       |
| BV605              | 0      | 0              | 0      | 2.93   | 3.06   | 2.34   | 1.99   | 2.36   | 3.07        | 1.96  | 1.47        | 1.16  | 3.42  | 2.65        | 2.24  |       | 2.81  | 1.66  | 1.79  | 1.62  | 0.82        | 2.25  | 0.72        | 2.28  | 2.00        | 1.67             | 2.23 | 2.23         | 3.15          | 3.36               | 3.08          | 1.87          | 0.95   | 0.62        | 2.11 | 3.50        | 2.04        | 1.05     | 0.34   | 0.32         | 73.15  |       |
| BV650              | 0.07   | 0.11           | 0      | 0.36   | 1.08   | 2.59   | 2.41   | 2.56   | 3.66        | 2.20  | 1.29        | 1.12  | 1.20  | 1.70        | 0     | 1.72  |       | 2.42  | 2.47  | 2.26  | 0           | 0     | 0           | 1.72  | 2.15        | 1.71             | 0.39 | 0.70         | 1.47          | 1.74               | 1.97          | 1.71          | 0.67   | 0.41        | 2.99 | 5.08        | 3.68        | 1.67     | 0.69   | 0.55         | 58.55  |       |
| BV711              | 0.43   | 0              | 0      | 0      | 0.28   | 0.91   | 4.32   | 5.39   | 3.83        | 2.43  | 1.80        | 1.01  | 2.13  | 2.03        | 0.78  | 0.41  | 0.89  |       | 5.19  | 4.64  | 0           | 0     | 0           | 1.71  | 2.42        | 2.48             | 0.50 | 0.53         | 0.66          | 0.85               | 1.34          | 2.59          | 1.12   | 0.81        | 2.01 | 4.24        | 4.22        | 3.43     | 1.82   | 1.34         | 68.55  |       |
| BV750              | 0.43   | 0              | 0      | 0.95   | 0      | 0.52   | 5.22   | 6.09   | 2.67        | 1.76  | 1.01        | 0.86  | 1.22  | 0.89        | 0.57  | 0     | 0     | 1.71  |       | 6.69  | 0           | 0     | 0           | 0.68  | 0.97        | 1.47             | 0    | 0            | 0.27          | 0.10               | 0             | 1.18          | 1.01   | 0.93        | 0.94 | 1.70        | 2.18        | 2.14     | 1.54   | 1.15         | 46.82  |       |
| BV785              | 0.44   | 0              | 0      | 0      | 0      | 0.18   | 2.75   | 7.38   | 3.29        | 2.07  | 1.51        | 0.78  | 1.53  | 1.08        | 0.39  | 0     | 0     | 0.56  | 3.18  |       | 0           | 0     | 0           | 0.94  | 0.99        | 0.97             | 0.37 | 0            | 0.31          | 0.62               | 0.57          | 0.58          | 0.94   | 0.81        | 0.87 | 1.00        | 0.85        | 1.04     | 1.59   | 1.42         | 38.99  |       |
| cFluor B515        | 0.08   | 0              | 3.41   | 1.84   | 0.66   | 0.31   | 0      | 0      | 0.45        | 0.36  | 1.11        | 1.41  | 9.31  | 9.65        | 2.90  | 1.38  | 0.38  | 0.09  | 0     | 0     |             | 53.53 | 13.39       | 1.05  | 0           | 0.29             | 3.55 | 3.23         | 2.35          | 1.72               | 1.50          | 0.38          | 0      | 0           | 0.43 | 0           | 0.75        | 0.27     | 0.16   | 0            | 115.93 |       |
| FITC               | 0.35   | 0.78           | 2.24   | 0.99   | 0      | 0      | 0.32   | 0      | 0           | 0.40  | 0.82        | 0.22  | 7.51  | 8.60        | 3.00  | 1.09  | 0     | 0.45  | 0     | 0     | 43.18       |       | 12.31       | 1.50  | 0.80        | 0.68             | 4.22 | 4.13         | 2.74          | 1.93               | 1.73          | 0.11          | 0      | 0.27        | 0    | 1.12        | 0.99        | 0.49     | 0      | 0            | 102.97 |       |
| cFluor B548        | 0.47   | 0              | 0.48   | 2.03   | 0.91   | 0.57   | 0      | 0.30   | 0           | 0.60  | 0           | 0.57  | 5.66  | 8.62        | 4.20  | 2.17  | 1.18  | 0.87  | 0.76  | 0.72  | 14.33       | 17.34 | 2.82        | 1.94  | 1.34        | 4.44             | 4.28 | 3.27         | 2.65          | 2.71               | 0.85          | 0.54          | 0.52   | 1.45        | 2.58 | 1.76        | 0.67        | 0.20     | 0      | 93.80        |        |       |
| PerCP              | 0      | 0              | 0      | 0      | 0      | 2.57   | 3.48   | 2.99   | 2.10        | 2.90  | 0           | 0     | 0     | 1.12        | 0     | 3.30  | 0     | 1.20  | 1.23  | 2.71  | 3.30        | 1.21  |             | 5.97  | 0           | 0.91             | 1.46 | 2.67         | 3.48          | 7.02               | 0             | 1.25          | 0      | 4.61        | 6.71 | 5.95        | 1.72        | 0.71     | 0.70   | 71.27        |        |       |
| PerCP-Cy5.5        | 0.39   | 0              | 0      | 0      | 0      | 1.96   | 3.72   | 4.28   | 0           | 0     | 0.51        | 0.42  | 0.84  | 2.17        | 0.97  | 0.78  | 2.66  | 4.11  | 3.59  | 3.08  | 4.50        | 6.11  | 0.71        | 9.79  |             | 7.14             | 0    | 0.72         | 2.15          | 2.83               | 5.51          | 5.38          | 2.83   | 2.25        | 5.21 | 8.47        | 8.16        | 3.30     | 1.61   | 1.12         | 107.26 |       |
| PerCP-eFluor 710   | 0.43   | 0              | 0      | 0      | 0      | 1.25   | 3.39   | 4.27   | 0           | 0     | 0           | 0     | 0     | 0.26        | 0     | 0     | 1.49  | 7.06  | 3.91  | 3.66  | 0           | 0     | 0           | 6.26  | 8.47        |                  | 0.67 | 0            | 1.39          | 1.78               | 3.31          | 9.28          | 2.98   | 2.64        | 3.51 | 6.55        | 6.46        | 3.72     | 1.75   | 1.39         | 85.88  |       |
| PE                 | 0.16   | 0              | 0.55   | 2.02   | 0.74   | 0.57   | 0.31   | 0.28   | 0           | 0.22  | 0           | 0.27  | 1.25  | 1.27        | 2.89  | 1.56  | 0.86  | 0.47  | 0.29  | 0.23  | 2.28        | 2.57  | 0.89        | 2.61  | 1.80        | 1.20             |      | 9.66         | 5.54          | 4.71               | 3.82          | 1.15          | 0.50   | 0.33        | 1.61 | 3.13        | 1.56        | 0.50     | 0.09   | 0.07         | 57.97  |       |
| cFluor YG584       | 0      | 0.23           | 0      | 0.79   | 0.42   | 0.47   | 0      | 0.16   | 0           | 0.21  | 0           | 0     | 0     | 0           | 1.35  | 1.01  | 0.74  | 0.42  | 0.14  | 0.26  | 0           | 0     | 0           | 2.15  | 1.65        | 1.11             | 3.48 |              | 4.36          | 4.32               | 3.47          | 1.56          | 0.70   | 0.48        | 1.32 | 2.50        | 1.18        | 0.27     | 0.12   | 0            | 34.90  |       |
| cFluor BYG610      | 0.14   | 0.22           | 0      | 1.11   | 1.43   | 1.09   | 0.54   | 0.48   | 0           | 0.23  | 0.06        | 0     | 0     | 0           | 1.27  | 2.27  | 1.55  | 0.87  | 0.56  | 0.49  | 3.12        | 3.85  | 1.44        | 4.33  | 3.38        | 2.30             | 5.11 | 5.98         |               | 5.43               | 4.98          | 2.28          | 0.97   | 0.67        | 2.94 | 4.34        | 3.06        | 0.90     | 0.20   | 0.21         | 67.77  |       |
| PE-Alexa Fluor 610 | 0.38   | 0.87           | 0      | 0      | 1.26   | 1.39   | 1.19   | 1.18   | 0           | 0.59  | 0           | 0     | 0     | 0           | 0.44  | 1.71  | 2.29  | 2.02  | 1.29  | 1.15  | 1.78        | 2.22  | 0.48        | 7.00  | 6.20        | 4                |      |              |               |                    |               |               |        |             |      |             |             |          |        |              |        |       |

# SSM: 40C with Super Bright Dyes\*

|                  | BUV395 | LIVE/DEAD Blue | BUV496 | BUV563 | BUV615 | BUV661 | BUV737 | BUV805 | BV421 | Super Bright 436 | eFluor 450 | BV480 | BV510 | Pacific Orange | BV570 | Super Bright 600 | Super Bright 645 | Super Bright 702 | BV750 | Super Bright 780 | BB515 | FITC  | Spark Blue 550 | PerCP | PerCP-Cy5.5 | PerCP-eFluor 710 | PE   | cFluor YG584 | PE/Dazzle 594 | PE-Alexa Fluor 610 | PE-Cy5 | PE-Alexa Fluor 700 | PE-Cy7 | PE/Fire 810 | APC  | Alexa Fluor 647 | Spark NIR 685 | APC-R700 | APC-H7 | APC/Fire 810 | Sum    |        |
|------------------|--------|----------------|--------|--------|--------|--------|--------|--------|-------|------------------|------------|-------|-------|----------------|-------|------------------|------------------|------------------|-------|------------------|-------|-------|----------------|-------|-------------|------------------|------|--------------|---------------|--------------------|--------|--------------------|--------|-------------|------|-----------------|---------------|----------|--------|--------------|--------|--------|
| BUV395           |        | 1.95           | 5.31   | 3.28   | 0.35   | 0.53   | 0.25   | 0.31   | 0.70  | 3.00             | 1.47       | 1.00  | 4.34  | 3.04           | 0.88  | 1.07             | 0.55             | 0.92             | 0.46  | 0.51             | 4.84  | 4.80  | 1.55           | 0.68  | 1.69        | 0.55             | 1.15 | 0.84         | 0.55          | 1.94               | 1.36   | 0.60               | 0.40   | 0.32        | 1.53 | 1.49            | 1.75          | 0.87     | 0.89   | 0.22         | 57.94  |        |
| LIVE/DEAD Blue   | 4.92   |                | 9.08   | 0.40   | 0.11   | 1.07   | 0.29   | 0.22   | 3.22  | 4.53             | 5.52       | 2.17  | 11.06 | 7.73           | 2.79  | 1.10             | 1.35             | 0.45             | 0.38  | 0.22             | 3.20  | 2.26  | 2.42           | 0.85  | 0.59        | 0.52             | 0.67 | 0.36         | 2.90          | 1.36               | 0.79   | 0.43               | 0.47   | 0.09        | 0.62 | 1.64            | 0.99          | 0.53     | 0.50   | 0.41         | 78.19  |        |
| BUV496           | 0.83   | 0.93           |        | 1.53   | 0.05   | 0.46   | 0.32   | 0.35   | 0.69  | 1.51             | 0.82       | 1.50  | 6.42  | 5.09           | 2.20  | 0.76             | 0.54             | 0.08             | 0.22  | 0.34             | 5.01  | 4.13  | 0.53           | 0.42  | 0.75        | 0.15             | 0.40 | 0.42         | 0.74          | 0.60               | 0.14   | 0.32               | 0.37   | 0.16        | 0.38 | 1.00            | 0.37          | 0.35     | 0.19   | 0.23         | 41.29  |        |
| BUV563           | 0.45   | 0.61           | 0.64   |        | 0.39   | 0.68   | 0.47   | 0.67   | 0.65  | 0.49             | 0.41       | 0.93  | 2.90  | 2.73           | 1.65  | 0.98             | 0.60             | 0.39             | 0.20  | 0.05             | 0.68  | 2.58  | 1.24           | 2.11  | 1.14        | 0.62             | 7.63 | 2.51         | 5.28          | 4.28               | 2.99   | 0.57               | 0.26   | 0.11        | 0.71 | 1.11            | 0.36          | 0.41     | 0.40   | 0.04         | 50.91  |        |
| BUV615           | 0.72   | 0.65           | 3.46   | 3.06   |        | 2.83   | 3.57   | 2.46   | 0.65  | 1.08             | 0.56       | 1.17  | 4.34  | 4.42           | 1.70  | 0.96             | 1.18             | 0.90             | 0.98  | 0.90             | 2.44  | 7.49  | 2.50           | 2.23  | 2.25        | 1.60             | 3.37 | 2.56         | 3.20          | 2.86               | 3.26   | 1.93               | 0.99   | 0.42        | 1.49 | 3.87            | 3.59          | 1.69     | 0.80   | 0.49         | 84.61  |        |
| BUV661           | 0.55   | 0.57           | 1.46   | 0.94   | 0.23   |        | 3.37   | 3.19   | 0.77  | 1.29             | 0.54       | 0.29  | 2.08  | 3.91           | 0.76  | 0.28             | 2.59             | 1.46             | 1.12  | 1.05             | 4.04  | 5.21  | 1.65           | 3.20  | 2.49        | 2.10             | 0.91 | 0.80         | 4.68          | 4.82               | 5.59   | 2.49               | 1.29   | 0.56        | 4.58 | 8.51            | 5.45          | 2.77     | 3.03   | 0.79         | 91.42  |        |
| BUV737           | 0.81   | 0.91           | 1.62   | 1.05   | 0.15   | 0.75   |        | 6.20   | 0.64  | 0.35             | 0.37       | 0.27  | 1.45  | 2.69           | 0.59  | 0.14             | 1.36             | 2.15             | 2.62  | 1.95             | 1.83  | 3.00  | 0.72           | 3.06  | 3.48        | 4.05             | 0.27 | 0.35         | 0.63          | 1.27               | 1.92   | 2.40               | 1.17   | 1.03        | 3.55 | 6.67            | 5.00          | 3.08     | 2.67   | 1.23         | 73.46  |        |
| BUV805           | 1.19   | 0.97           | 1.33   | 1.19   | 0.14   | 0.01   | 1.23   |        | 0.74  | 0.55             | 0.15       | 0.26  | 0.32  | 2.42           | 0.37  | 0.68             | 0.59             | 0.46             | 0.49  | 0.95             | 1.24  | 1.54  | 0.43           | 1.26  | 0.67        | 1.20             | 0.26 | 0.37         | 1.28          | 0.36               | 0.33   | 0.29               | 0.56   | 0.61        | 1.05 | 2.27            | 2.24          | 0.11     | 2.07   | 1.34         | 33.45  |        |
| BV421            | 0.26   | 0.87           | 1.51   | 0.84   | 0.11   | 0.15   | 0.20   | 0.22   |       | 9.82             | 5.18       | 2.49  | 6.31  | 5.44           | 1.68  | 0.71             | 0.02             | 0.17             | 0.29  | 0.14             | 1.28  | 0.19  | 0.45           | 0.39  | 0.55        | 0.29             | 0.24 | 0.15         | 0.50          | 0.36               | 0.74   | 0.03               | 0.10   | 0.14        | 0.44 | 0.22            | 0.53          | 0.30     | 0.26   | 0.16         | 43.75  |        |
| Super Bright 436 | 0.07   | 0.72           | 0.22   | 0.72   | 0.11   | 0.23   | 0.13   | 0.21   | 5.24  |                  | 4.69       | 2.62  | 6.99  | 5.97           | 1.88  | 0.86             | 0.46             | 0.28             | 0.17  | 0.12             | 1.37  | 2.21  | 0.74           | 0.76  | 0.62        | 0.25             | 0.26 | 0.31         | 0.61          | 0.78               | 0.49   | 0.18               | 0.27   | 0.12        | 0.63 | 0.51            | 0.40          | 0.25     | 0.22   | 0.14         | 42.80  |        |
| eFluor 450       | 0.49   | 0.89           | 1.50   | 1.00   | 0.19   | 0.29   | 0.08   | 0.52   | 5.25  | 10.55            |            | 2.84  | 7.56  | 5.88           | 1.78  | 0.80             | 0.37             | 0.69             | 0.36  | 0.31             | 1.42  | 3.34  | 0.76           | 0.82  | 0.71        | 0.71             | 0.27 | 0.00         | 1.39          | 1.68               | 0.89   | 0.50               | 0.06   | 0.25        | 1.35 | 0.95            | 1.39          | 0.43     | 0.48   | 0.42         | 59.16  |        |
| BV480            | 0.33   | 0.84           | 3.32   | 1.91   | 0.36   | 0.29   | 0.06   | 0.23   | 2.00  | 3.76             | 2.47       |       | 12.49 | 11.21          | 4.87  | 2.44             | 0.52             | 0.57             | 0.35  | 0.36             | 6.66  | 7.20  | 1.91           | 0.80  | 0.31        | 0.27             | 1.25 | 0.55         | 1.70          | 0.74               | 0.43   | 0.26               | 0.28   | 0.13        | 0.38 | 0.71            | 0.55          | 0.10     | 0.43   | 0.17         | 73.22  |        |
| BV510            | 0.23   | 0.83           | 2.69   | 2.29   | 0.60   | 0.54   | 0.24   | 0.80   | 1.45  | 2.45             | 1.75       | 2.65  |       | 10.53          | 5.19  | 3.27             | 1.33             | 0.73             | 0.80  | 0.70             | 5.41  | 5.74  | 2.10           | 1.18  | 0.79        | 0.16             | 1.41 | 0.57         | 1.94          | 1.46               | 0.37   | 0.34               | 0.28   | 0.18        | 0.78 | 0.68            | 1.36          | 1.36     | 0.34   | 0.31         | 0.45   | 64.92  |
| Pacific Orange   | 0.44   | 1.86           | 4.67   | 0.83   | 0.66   | 0.15   | 0.61   | 0.63   | 1.27  | 1.93             | 0.65       | 2.39  | 2.19  |                | 5.34  | 3.58             | 1.94             | 1.33             | 0.64  | 1.52             | 7.22  | 4.47  | 2.21           | 2.53  | 1.69        | 1.52             | 1.64 | 0.75         | 2.52          | 3.36               | 1.52   | 1.12               | 0.64   | 0.42        | 1.41 | 2.18            | 1.42          | 0.49     | 1.48   | 2.27         | 73.47  |        |
| BV570            | 0.54   | 0.96           | 1.93   | 1.38   | 0.67   | 0.45   | 0.41   | 0.47   | 2.07  | 2.91             | 1.68       | 1.21  | 3.21  | 5.15           |       | 3.13             | 1.72             | 0.81             | 0.66  | 0.39             | 5.44  | 6.20  | 2.19           | 1.83  | 1.28        | 0.18             | 3.45 | 1.57         | 4.24          | 3.42               | 2.22   | 0.94               | 0.24   | 0.28        | 1.02 | 1.84            | 0.22          | 0.64     | 0.43   | 0.22         | 67.63  |        |
| Super Bright 600 | 0.26   | 0.97           | 0.91   | 1.05   | 0.87   | 0.88   | 0.68   | 0.80   | 1.76  | 3.43             | 1.36       | 1.17  | 3.84  | 6.04           | 2.45  |                  | 2.35             | 1.22             | 1.19  | 1.18             | 6.54  | 7.41  | 2.76           | 2.07  | 1.40        | 1.14             | 3.23 | 2.70         | 5.42          | 3.95               | 3.57   | 1.51               | 0.88   | 0.41        | 1.54 | 2.69            | 1.46          | 0.95     | 0.94   | 0.37         | 83.36  |        |
| Super Bright 645 | 0.32   | 1.36           | 0.91   | 0.72   | 0.33   | 1.03   | 0.93   | 1.00   | 1.40  | 3.04             | 1.18       | 0.86  | 2.19  | 2.43           | 0.97  | 0.46             |                  | 1.74             | 1.65  | 1.51             | 1.76  | 3.28  | 1.19           | 1.14  | 1.81        | 1.10             | 1.25 | 0.67         | 4.51          | 4.57               | 3.25   | 1.72               | 1.08   | 0.26        | 2.34 | 4.40            | 3.04          | 1.72     | 1.67   | 0.76         | 65.50  |        |
| Super Bright 702 | 0.14   | 1.46           | 1.55   | 0.65   | 0.18   | 0.65   | 1.63   | 1.88   | 1.97  | 3.78             | 1.90       | 1.24  | 0.85  | 2.13           | 0.57  | 0.37             | 1.12             |                  | 2.83  | 2.98             | 1.19  | 0.40  | 0.92           | 1.53  | 1.29        | 1.82             | 0.42 | 0.42         | 1.34          | 1.26               | 2.11   | 3.71               | 1.41   | 0.53        | 2.68 | 4.84            | 5.24          | 4.40     | 2.98   | 1.40         | 67.75  |        |
| BV750            | 0.09   | 0.86           | 1.76   | 0.84   | 0.09   | 0.18   | 2.48   | 2.77   | 1.05  | 2.20             | 0.96       | 0.71  | 2.46  | 1.83           | 0.71  | 0.07             | 0.60             | 1.38             |       | 4.65             | 2.30  | 0.64  | 0.84           | 0.62  | 1.03        | 1.32             | 0.69 | 0.20         | 0.64          | 0.66               | 0.73   | 0.63               | 0.68   | 0.61        | 1.31 | 2.68            | 2.18          | 0.91     | 1.98   | 1.81         | 48.14  |        |
| Super Bright 780 | 0.66   | 0.25           | 1.01   | 0.75   | 0.37   | 0.82   | 5.14   | 4.21   | 1.39  | 2.81             | 1.15       | 0.38  | 0.71  | 1.17           | 0.15  | 0.11             | 0.64             | 0.51             | 1.62  |                  | 1.50  | 2.82  | 0.59           | 1.69  | 1.35        | 0.86             | 0.18 | 0.14         | 0.41          | 0.11               | 0.95   | 0.46               | 0.95   | 0.63        | 1.38 | 4.17            | 3.77          | 1.37     | 2.69   | 1.39         | 51.26  |        |
| BB515            | 0.14   | 0.54           | 0.42   | 0.43   | 0.33   | 0.13   | 0.10   | 0.09   | 0.32  | 0.96             | 0.66       | 0.89  | 5.02  | 6.90           | 2.21  | 1.51             | 0.43             | 0.25             | 0.54  | 0.66             |       | 21.51 | 4.05           | 1.07  | 0.65        | 0.66             | 0.97 | 0.70         | 2.18          | 1.57               | 1.30   | 0.59               | 0.32   | 0.25        | 0.33 | 0.62            | 0.54          | 0.16     | 0.06   | 0.11         | 60.19  |        |
| FITC             | 0.38   | 0.86           | 1.73   | 1.06   | 0.38   | 0.16   | 0.42   | 0.45   | 0.55  | 1.24             | 0.36       | 0.89  | 3.78  | 6.92           | 2.31  | 1.39             | 0.27             | 0.61             | 0.35  | 0.84             |       | 17.43 | 3.58           | 0.69  | 0.68        | 1.00             | 1.31 | 0.99         | 2.66          | 2.39               | 1.37   | 0.31               | 0.05   | 0.17        | 0.83 | 1.40            | 0.45          | 0.11     | 0.18   | 0.38         | 60.91  |        |
| Spark Blue 550   | 0.65   | 0.47           | 1.84   | 3.80   | 2.12   | 1.47   | 1.35   | 0.37   | 0.70  | 1.50             | 2.78       | 0.66  | 5.64  | 8.51           | 3.86  | 0.99             | 0.96             | 0.17             | 0.28  | 0.74             |       | 12.36 | 16.70          | 2.30  | 2.41        | 1.43             | 3.41 | 2.43         | 3.73          | 2.63               | 2.30   | 0.10               | 0.23   | 0.62        | 1.41 | 2.53            | 1.75          | 1.24     | 0.42   | 0.40         | 97.26  |        |
| PerCP            | 1.03   | 2.46           | 7.48   | 4.26   | 0.09   | 0.53   | 1.01   | 1.16   | 1.03  | 4.81             | 2.16       | 1.01  | 10.84 | 3.00           | 1.60  | 1.11             | 2.50             | 1.73             | 1.35  | 1.09             | 4.87  | 5.91  | 3.71           |       | 5.41        | 2.51             | 1.04 | 0.88         | 4.88          | 6.90               | 6.96   | 1.86               | 0.94   | 0.58        | 3.09 | 3.98            | 2.65          | 2.38     | 1.01   | 1.00         | 110.80 |        |
| PerCP-Cy5.5      | 0.60   | 1.48           | 3.68   | 2.28   | 0.49   | 1.19   | 1.88   | 2.39   | 1.14  | 3.47             | 0.44       | 0.56  | 1.60  | 1.58           | 1.13  | 1.58             | 2.58             | 2.55             | 2.19  | 2.17             | 1.90  | 3.31  | 0.93           |       | 9.70        |                  | 5.65 | 1.40         | 1.33          | 6.25               | 7.46   | 7.31               | 5.00   | 2.62        | 1.45 | 3.12            | 6.54          | 6.57     | 3.34   | 3.55         | 1.36   | 113.78 |
| PerCP-eFluor 710 | 0.41   | 1.04           | 1.97   | 1.24   | 0.17   | 0.68   | 1.80   | 2.09   | 0.76  | 0.44             | 0.56       | 0.32  | 2.62  | 3.04           | 1.21  | 0.17             | 1.50             | 3.77             | 2.77  | 2.64             | 3.87  | 4.27  | 1.60           |       | 6.55        | 7.27             |      | 0.77         | 0.81          | 3.35               | 3.91   | 3.74               | 8.43   | 2.93        | 1.93 | 2.69            | 5.47          | 6.17     | 4.08   | 3.27         | 1.42   | 101.73 |
| PE               | 0.16   | 0.37           | 0.59   | 1.18   | 0.49   | 0.36   | 0.16   | 0.14   | 0.36  | 0.34             | 0.40       | 0.41  | 2.40  | 3.16           | 2.43  | 1.54             | 0.78             | 0.39             | 0.31  | 0.32             | 3.71  | 3.98  | 1.82           | 2.94  | 1.72        | 1.10             |      | 3.62         | 6.86          | 5.96               | 4.00   | 0.94               | 0.48   | 0.26        | 0.74 | 1.29            | 0.95          | 0.37     | 0.44   | 0.12         | 57.57  |        |
| cFluor YG584     | 0.03   | 0.22           | 1.14   | 1.53   | 1.39   | 1.04   | 0.87   | 0.37   | 0.75  | 0.84             | 0.34       | 0.40  | 2.29  | 2.13           | 1.37  | 0.92             | 0.54             | 0.28             | 0.23  | 0.52             | 1.84  | 1.98  | 0.34           | 1.61  | 1.26        | 1.08             | 4.13 |              | 2.91          | 3.48               | 2.21   | 1.25               | 0.76   |             |      |                 |               |          |        |              |        |        |



# Document Revision History

| Effective Date | Description of Change  | Revision | EC No.   |
|----------------|--|----------|----------|
| 10/21/2019     | Initial Release  | A        | EC-00265 |
| 01/15/2021     | Added section on cFluors; added more dyes to stain index and fluorochrome signatures; updated spread matrix examples; removed CSI tables; added similarity and complexity tables | B        | EC-00783 |

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