CF™660C and CF™660R Dyes

Superior alternatives to Alexa Fluor® 660

Technical Summary

CF™660C

Abs/Em Maxima: 667/685 nm
Extinction coefficient: 200,000
Molecular weight: 3112
Flow cytometry laser line: 633 or 635 nm
Microscopy laser line: 633 or 635 nm
Direct replacement for: Alexa Fluor® 660, Allophycocyanin (APC)

CF™660R

Abs/Em Maxima: 663/682 nm
Extinction coefficient: 100,000
Molecular weight: 888
Flow cytometry laser line: 633 or 635 nm
Microscopy laser line: 633 or 635 nm
Direct replacement for: Alexa Fluor® 660, Allophycocyanin (APC)

Advantages of CF™660C:

- Much brighter than Alexa Fluor® 660
- More photostable than Alexa Fluor® 660
- Highly water-soluble

Advantages of CF™660R:

- Brighter than Alexa Fluor® 660
- The most photostable 660 nm dye ideal for confocal microscopy application
- Highly water-soluble

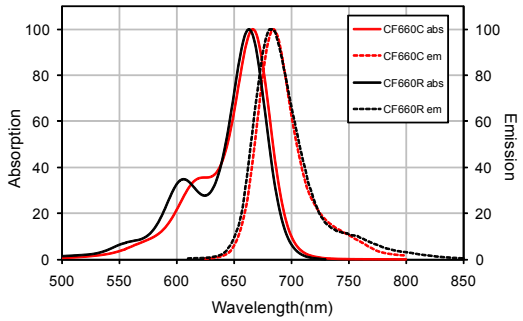

Figure 1. Absorption and emission spectra of CF™660C and CF™660R conjugated to goat anti-mouse IgG, respectively, in PBS.

CF™660C and CF™660R are two spectrally similar fluorescent dyes that emit fluorescence at about 685 nm in the borderline spectral region between far-red and near-IR (Figure 1). Although their absorption maxima are at around 660 nm, both dyes can be sufficiently excited by the 633 or 635 nm laser. When combined with other CF™ dyes of shorter wavelengths, CF™660C or CF™660R can serve as a useful long wavelength dye in multi-color detection applications. The two dyes are spectrally similar to Alexa Fluor® 660 but are far superior to the latter in performance. Like Alexa Fluor® 660, CF™660C is a cyanine-based dye. However, when conjugated to protein, CF™660C is several fold brighter and significantly more photostable than Alexa Fluor® 660 (Figures 2 and 3). CF™660R is a rhodamine-based dye. Like rhodamine dyes in general, CF™660R is exceptionally photostable, compared to both Alexa Fluor® 660 and CF™660C (Figure 2). CF™660R is also much brighter than Alexa Fluor® 660, though not as bright as CF™660C (Figure 2). The superior photostability and excellent brightness of CF™660R make the dye an ideal choice for confocal microscopy and other demanding applications.

A list of CF™660C- and CF™660R-based products are shown in Table 1. A full selection of secondary antibodies, antibody labeling kits, and other bioconjugates including phalloidin, annexin V and α-bungarotoxin are also available for many CF™ dyes. Please visit the Biotium website at www.biotium.com for details.

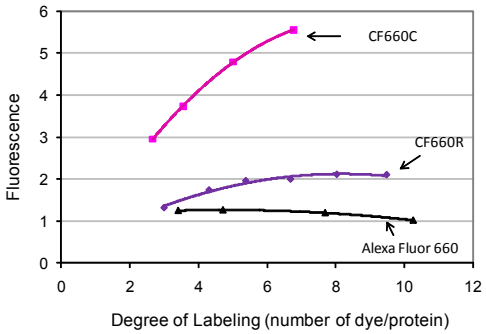

Figure 2. Relative fluorescence of CF™660C-, CF™660R and Alexa Fluor® 660-goat anti-mouse conjugates as a function of number of dye per protein (*i.e.*, degree of labeling). Fluorescence was measured at each dye's emission maximum in PBS using 633 nm excitation.

Biotium

CF™660C and CF™660R fluorescent reagents

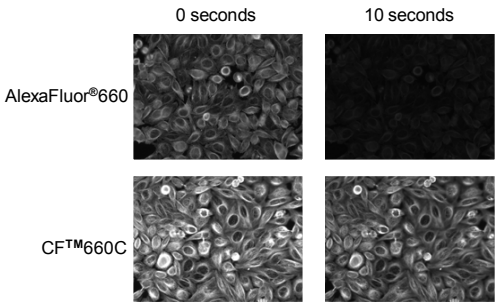

Figure 3. HeLa cells were fixed, permeabilized and stained with mouse α-tubulin followed by CF™660C or AlexaFluor® 660 goat anti-mouse IgG conjugates. Cells were imaged using an Olympus mercury arc lamp microscope equipped with a Cy5 filter set and CCD camera. Images were taken at t=0 and 10 seconds.

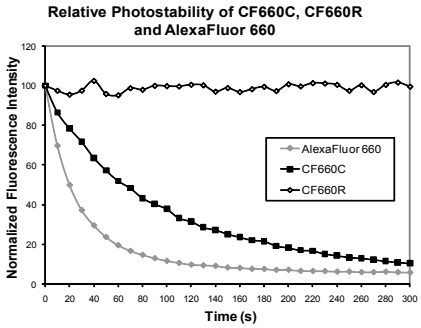

Figure 4. HeLa cells were fixed, permeabilized and stained with mouse α-tubulin followed by CF™660C, CF™F660R or AlexaFluor® 660 goat anti-mouse IgG conjugates. Cells were imaged using an Olympus mercury arc lamp microscope equipped with a Cy5 filter set and CCD camera. The graph illustrates the relative fluorescence intensities of sequential images taken every 10 seconds for 5 minutes.

Table 1. CF™660C and CF™660R Product List

Product Name	Size	Cat No.
CF™660C- and CF™660R-Labeled Secondary Antibody Conjugates		
CF™660C Donkey Anti-Goat IgG (H+L) whole antibody, 2mg/mL (min X Chicken, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, and Rat)	0.5 mL	**20051**
CF™660C Goat Anti-Mouse IgG (H+L) whole antibody, 2 mg/mL	0.5 mL	**20050**
CF™660C Goat Anti-Mouse IgG (H+L) whole antibody, 2 mg/mL (min x Human, Bovine, Horse, Rabbit, and Swine)	0.5 mL	**20052**
CF™660C Goat Anti-Rabbit IgG (H+L) whole antibody, 2 mg/mL	0.5 mL	**20053**
CF™660R Goat Anti-Mouse IgG (H+L) whole antibody, 2 mg/mL	0.5 mL	**20054**
CF™660R Goat Anti-Rabbit IgG (H+L) whole antibody, 2 mg/mL	0.5 mL	**20055**
Other CF™660R-Labeled Products		
CF™660R Phalloidin	300 U	**00047**
CF™660R Streptavidin	1 mg	**29040**
CF™660C and CF™660R Reactive Dyes and Labeling Kits		
CF™660C maleimide	1 μmole	**92028**
CF™660C succinimidyl ester	1 μmole	**92137**
CF™660C SE protein labeling kit	3 labelings (for 1 mg protein each)	**92219**
Mix-n-Stain™ CF™660C antibody labeling kit, 1x(50-100 μg) labeling	1 labeling	**92239**
Mix-n-Stain™ CF™660C antibody labeling kit, 1x(20-50 μg) labeling	1 labeling	**92260**
Mix-n-Stain™ CF™660C antibody labeling kit, 1x(5-20 μg) labeling	1 labeling	**92280**
CF™660R, aminooxy	1 mg	**92059**
CF™660R maleimide	1 μmole	**92031**
CF™660R succinimidyl ester	1 μmole	**92134**
CF™660R SE protein labeling kit	3 labelings (for 1 mg protein each)	**92223**
Mix-n-Stain™ CF™660R antibody labeling kit, 1x(50-100 μg) labeling	1 labeling	**92243**
Mix-n-Stain™ CF™660R antibody labeling kit, 1x(20-50 μg) labeling	1 labeling	**92261**
Mix-n-Stain™ CF™660R antibody labeling kit, 1x(5-20 μg) labeling	1 labeling	**92281**

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