

CF™640R Dye

A highly photostable far-red dye for the 633 and 640 nm lasers

Technical Summary

Abs/Em Maxima: 642/662 nm

Extinction coefficient: 105,000

Molecular weight: 832

Flow cytometry laser line: 633, 635 or 640 nm

Microscopy laser line: 633, 635 or 640 nm

Direct replacement for: Cy™5, Alexa Fluor® 647 and ATTO™ 647N

Advantages

- Has the best photostability among dyes with Cy™5-like spectra
- Yields highly fluorescent protein conjugates
- Very water-soluble and pH-insensitive

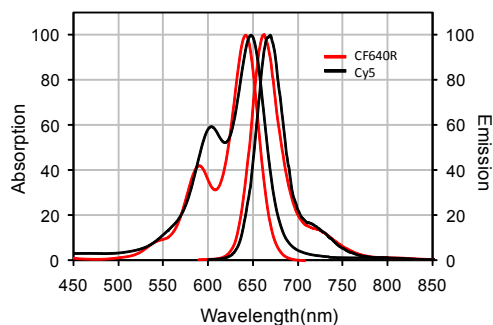


Figure 1. Absorption and emission spectra of CF™640R and Cy™5 conjugated to goat anti-mouse IgG in PBS.

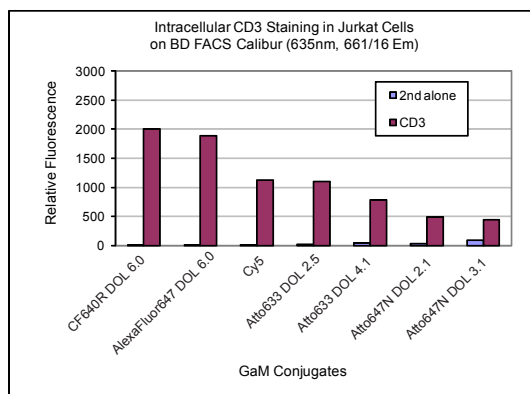


Figure 2. Jurkat cells were stained with intracellular CD3 followed by goat anti-mouse IgG conjugates. Background staining was determined by secondary antibody staining alone. Fluorescence was analyzed on a BD FACS Calibur in the FL4 channel. The bars represent the relative fluorescence of the geometric means of the population of cells.

CF™640R is a rhodamine-based far-red fluorescent dye with excitation and emission maxima very similar to those of Cy™5 and Alexa Fluor® 647 (Figure 1). CF™640R is much brighter than Cy™5 and at least as bright as Alexa Fluor® 647 (Figure 2). A major advantage of CF™640R over Cy™5 and Alexa Fluor® 647 is its exceptional photostability. Cy™5 and Alexa Fluor® 647 are cyanine-based dyes and, like other cyanine dyes in general, have intrinsically poor photostability. CF™640R is also far brighter and more photostable than Atto™ 647N, another spectrally similar dye frequently used in single-molecule imaging. The combination of excellent brightness and photostability makes CF™640R ideal for confocal microscopy, single-molecule imaging and other demanding applications based on fluorescence detection.

A list of CF™640R-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. For more information, please visit the Biotium website at www.biotium.com.

If you are looking for an antibody conjugate not listed in our catalog, please let us know. We might be able to add it as a new product, or perform a custom conjugation for you.

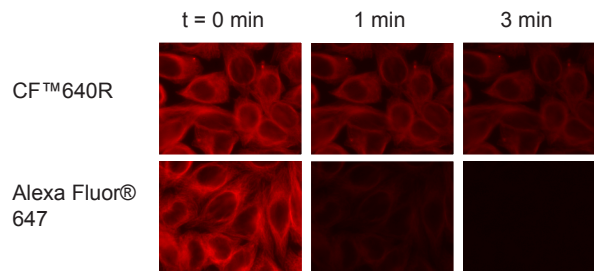


Figure 3. Photostability comparison between CF™640R and Alexa® Fluor 647. HeLa cells were stained with β -tubulin conjugates of CF640R or Alexa Fluor 647. Cells were continuously illuminated by a mercury arc lamp microscope and sequential images were captured. Shown above are representative images of stained cells at 0, 1 and 3 min of photobleaching.

CF™640R fluorescent reagents

Table 1. CF™640R Product List

Product Name	Size	Cat No.
CF™640R-Labeled Secondary Antibody Conjugates		
Donkey Anti-Goat IgG (H+L) whole antibody, 2 mg/mL (min X Chicken, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, and Rat)	0.5 mL	20179
Donkey Anti-Mouse IgG (H+L) whole antibody, 2 mg/mL (min X Bovine, Chicken, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Rabbit, and Sheep)	0.5 mL	20177
Donkey Anti-Rabbit IgG (H+L) whole antibody, 2 mg/mL (min X Bovine, Chicken, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rat, and Sheep)	0.5 mL	20178
Donkey Anti-Rat IgG (H+L) whole antibody, 2 mg/mL (min X Bovine, Chicken, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Rabbit, and Sheep)	0.5 mL	20199
Donkey Anti-Sheep IgG (H+L) whole antibody, 2 mg/mL (min X Chicken, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, and Rat)	0.5 mL	20083
Goat Anti-Chicken IgY (IgG) (H+L) whole antibody, 2 mg/mL (min X Bovine, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, Rat, and Sheep)	0.5 mL	20084
Goat Anti-Guinea Pig IgG (H+L) whole antibody, 2 mg/mL	0.5 mL	20085
Goat Anti-Human IgG (H+L) whole antibody, 2 mg/mL (min X Bovine, Horse, and Mouse)	0.5 mL	20081
Goat Anti-Mouse IgG (H+L) whole antibody, 2 mg/mL (min x Human, Bovine, Horse, Rabbit, and Swine)	0.5 mL	20175
Goat Anti-Mouse IgG (H+L), F(ab')₂ fragment, 2 mg/mL	0.25 mL	20086
Goat Anti-Rabbit IgG (H+L) whole antibody, 2 mg/mL (min X Human, Mouse, and Rat)	0.5 mL	20176
Goat Anti-Rabbit IgG (H+L), F(ab')₂ fragment, 2 mg/mL	0.25 mL	20087
Goat Anti-Rat IgG (H+L) whole antibody, 2 mg/mL (min X Human, Bovine, Horse, and Rabbit)	0.5 mL	20088
Goat Anti-Swine IgG (H+L) whole antibody, 2 mg/mL	0.5 mL	20089
Rabbit Anti-Goat IgG (H+L) whole antibody, 2 mg/mL	0.5 mL	20090
Rabbit Anti-Mouse IgG (H+L) whole antibody, 2 mg/mL (min X Human)	0.5 mL	20200
Rabbit Anti-Rat IgG (H+L) whole antibody, 2 mg/mL (min X Human)	0.5 mL	20201
Other CF™640R-Labeled Products		
Annexin V, 50 µg/mL	0.5 mL	29014
α-Bungarotoxin	0.5 mg	00004
Phalloidin	300 U	00050
Streptavidin	1 mg	29041
Wheat germ agglutinin (WGA)	5x1 mg	29026
CF™640R Reactive Dyes and Labeling Kits		
CF™640R, aminoxy	1 mg	92058
CF™640R hydrazide	1 mg	92157
CF™640R maleimide	1 µmole	92034
CF™640R succinimidyl ester	1 µmole	92108
CF™640R SE protein labeling kit	3 labelings (for 1 mg protein each)	92225
Mix-n-Stain™ CF™640R antibody labeling kit, 1x(50-100 µg) labeling	1 labeling	92245
Mix-n-Stain™ CF™640R antibody labeling kit, 1x(20-50 µg) labeling	1 labeling	92258
Mix-n-Stain™ CF™640R antibody labeling kit, 1x(5-20 µg) labeling	1 labeling	92278

Listed products are for research use only. Not for use in diagnostic or therapeutic procedures.

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Cy is a trademark of GE Healthcare.

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Biotium, Inc.

3159 Corporate Place, Hayward, CA 94545

www.biotium.com

US orders: 1-800-304-5357