

Product Information

CF™640R Conjugated Antibodies

| Catalog No. | Unit Size | Product Description |
|-------------|-----------|--|
| 20179 | 0.5 mL | Donkey Anti-Goat IgG (H+L) whole antibody (min X Chicken, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, and Rat) |
| 20179-1 | 50 uL | |
| 20177 | 0.5 mL | Donkey Anti-Mouse IgG (H+L) whole antibody (min X Bovine, Chicken, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Rabbit, and Sheep) |
| 20177-1 | 50 uL | |
| 20178 | 0.5 mL | Donkey Anti-Rabbit IgG (H+L) whole antibody (min X Bovine, Chicken, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rat, and Sheep) |
| 20178-1 | 50 uL | |
| 20199 | 0.5 mL | Donkey Anti-Rat IgG (H+L) whole antibody (min X Bovine, Chicken, Goat, Guinea Pig, Hamster, Horse, Human, Mouse, Rabbit, and Sheep) |
| 20199-1 | 50 uL | |
| 20083 | 0.5 mL | Donkey Anti-Sheep IgG (H+L) whole antibody (min X Chicken, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, and Rat) |
| 20083-1 | 50 uL | |
| 20084 | 0.5 mL | Goat Anti-Chicken IgY (H+L) whole antibody (min X Bovine, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, Rat, and Sheep) |
| 20084-1 | 50 uL | |
| 20085 | 0.5 mL | Goat Anti-Guinea Pig IgG (H+L) whole antibody |
| 20085-1 | 50 uL | |
| 20081 | 0.5 mL | Goat Anti-Human IgG (H+L) whole antibody (min X Bovine, Horse, and Mouse) |
| 20081-1 | 50 uL | |
| 20175 | 0.5 mL | Goat Anti-Mouse IgG (H+L) whole antibody (min x Human, Bovine, Horse, Rabbit, and Swine) |
| 20175-1 | 50 uL | |
| 20086 | 0.25 mL | F(ab')₂ fragment of Goat Anti-Mouse IgG (H+L) |
| 20176 | 0.5 mL | Goat Anti-Rabbit IgG (H+L) whole antibody (min X Human, Mouse, and Rat) |
| 20176-1 | 50 uL | |
| 20087 | 0.25 mL | F(ab')₂ fragment of Goat Anti-Rabbit IgG (H+L) |
| 20088 | 0.5 mL | Goat Anti-Rat IgG (H+L) whole antibody (min X Human, Bovine, Horse, and Rabbit) |
| 20088-1 | 50 uL | |
| 20089 | 0.5 mL | Goat Anti-Swine IgG (H+L) whole antibody |
| 20089-1 | 50 uL | |
| 20090 | 0.5 mL | Rabbit Anti-Goat IgG (H+L) whole antibody |
| 20090-1 | 50 uL | |
| 20201 | 0.5 mL | Rabbit Anti-Rat IgG (H+L) whole antibody (min X Human) |
| 20201-1 | 50 uL | |
| 20202 | 0.5 mL | Goat Anti-Rabbit IgG (H+L) whole antibody |
| 20202-1 | 50 uL | |

Concentration: 2 mg/mL in pH~7.4 PBS containing 50% glycerol, 2 mg/mL bovine serum albumin (IgG-free and protease-free) and 0.05% sodium azide.

Color and Form: Blue solution.

Spectral Property

$\lambda_{abs}/\lambda_{em}$ = 642/662 nm (in pH 7.4 PBS buffer)
CF™640R is an alternative for Alexa Fluor® 647 and Cy™ 5.

Storage and Handling

Product is stable for about 6 months at -20°C as an undiluted liquid. Storage of the antibody for more than a day at final working dilution is not recommended. Protect from light.

Product Description

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. 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 superior to Atto™ 647N, another spectrally similar dye frequently used in single-molecule imaging. CF™640R is significantly brighter and more photostable than the Atto™ dye. 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. Please see the CF™640R flyer for more information.

CF™640R antibodies are affinity-purified antibodies labeled with a red fluorescent dye CF™640R, one of an outstanding series of CF™ dyes developed by Biotium. CF™ dyes are superior to both Alexa® Fluor dyes and Cy™ dyes for antibody labeling by having combined advantages in brightness, photostability, specificity and novel features ideal for in vivo imaging (Please visit our website for details).

A full selection of secondary antibodies, antibody labeling kits, and other bioconjugates including phalloidins, annexin V and α -bungarotoxin are also available for many CF™ dyes. Please visit the Biotium website at www.biotium.com for details.

General Protocols for Using CF™-labeled IgG Secondary Antibodies

Recommended Dilution Range

1-10 μ g/mL of the IgG conjugate for most applications (appropriate dilutions of the conjugate should be determined empirically).

Immunofluorescence Protocol for Microscopy

There are many methods for immunofluorescence staining. The protocol below is a general guideline for staining cells and should be optimized or modified to obtain the best results for each particular application.

1. Coverslip preparation for adherent cells

- 1.1 Culture cells on slide chambers or sterile glass coverslips (with poly-L-lysine coating if cells do not adhere well, see below). We recommend 18 x 18 mm square coverslips in 6-well plates or 4-well chamber slides.
- 1.2 Allow cells to adhere and treat as desired.
- 1.3 Rinse cells gently with PBS.

2. Coverslip preparation for non-adherent cells

- 2.1 Coat coverslips with 0.01% poly-L-lysine solution for 10 minutes at room temperature.
- 2.2 Aspirate the poly-L-lysine solution and allow coverslips to dry completely.
- 2.3 Centrifuge cells in medium and resuspend in PBS. Transfer cells to coverslips.
- 2.4 Incubate for 30-60 minutes. Check for adherence by microscope.

3. Fixation and Staining

- 3.1 Fix with 4% paraformaldehyde/PBS, 15 min.
- 3.2 Rinse twice with PBS to remove traces of fixative.
- 3.3 Permeabilize with 0.1 - 0.5% TritonX-100/PBS, 5-10 min.
- 3.4 Block with blocking agent such as with 5% BSA or normal goat serum in PBS, 30 min.
- 3.5 Dilute primary antibody in dilution buffer as recommended in the specific product's datasheet. Overlay enough diluted antibody to cover cells on coverslip (150-200 μ L is usually sufficient to cover the surface area) or add to each chamber of the chamber slides. Keep slips covered or in a humidified chamber to avoid evaporation.
- 3.6 Rinse three times with PBS, 5 min each wash.
- 3.7 Dilute fluorescent secondary antibody in dilution buffer and incubate for 1 hour at room temperature. General range for IgG conjugates is between 1-10 μ g/mL for most applications. Cell samples without primary antibody incubation is recommended for background control. Keep slips covered or in a humidified chamber to avoid evaporation.
- 3.8 Rinse three times with PBS, 5 min each wash.
- 3.9 Additional staining with fluorescent nuclear stains or phalloidins can be done at this step.
- 3.10 Invert each coverslip onto a pre-cleaned slide with mounting media, preferably one with an anti-fade preservative. Seal edges with clear polish if desired.
- 3.11 Store slides in the dark at 4°C.

Staining Protocol for Flow Cytometry

There are many alternative procedures that can be used for specific staining experiments. The protocol below is a general guideline for flow cytometry and should be optimized or modified for each application.

- 1 Aliquot 1 X 10⁶ cells into 12 X 75 mm polypropylene tubes for flow cytometry.
- 2 For intracellular staining, cells can be fixed first to ensure stability of soluble antigens or antigens with short half-lives. We recommend a fix and perm kit from reliable manufacturers. Follow manufacturer's instructions.
- 3 Add the primary antibody or isotype control at the appropriate dilution to the assay tubes. Incubate according to manufacturer's instructions.
- 4 Rinse cells twice by centrifugation with 2-3 mL incubation buffer.
- 5 Decant supernatant and re-suspend the pellet in remaining volume of wash.
- 6 Add fluorescent secondary antibody and incubate for 20-30 minutes. General range for secondary antibodies is between 1-10 μ g/mL for IgG conjugates for most applications.
- 7 Rinse cells twice by centrifugation with 2-3 mL incubation buffer. Centrifuge to collect cells after each wash. Decant supernatant.
- 8 Resuspend cells in 0.5 mL of diluent of choice to analyze on flow cytometer. Acquire data using the correct channel.

Tips and Hints:

- 1) No signal or weak fluorescence intensity may suggest the following: (a) insufficient antibody is present for detection, (b) intracellular target was not accessible, (c) excitation sources are not aligned, (d) target protein is not present or expressed at low levels, (e) fluorochrome has faded, and/or (f) primary and secondary antibodies are not compatible.
- 2) High fluorescence intensity may suggest the following: (a) antibody concentration is too high, (b) excess antibody was not washed away efficiently, and/or (c) blocking was inadequate. Increase antibody dilution and washes.

CFTM-labeled antibodies can also be used for staining histological sections from paraffin-embedded or frozen tissues.

References

1. Donaldson, J.G. Immunofluorescence staining. (2001) Curr Protoc Cell Biol. Chapter 4: Unit 4.3.
2. Blose, S.H. and Feramisco, J.R. (1983) Fluorescent methods in the analysis of cell structure. Cold Spring Harbour Laboratory.

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Absorption/Emission Spectra of CFTM640R and CyTM5

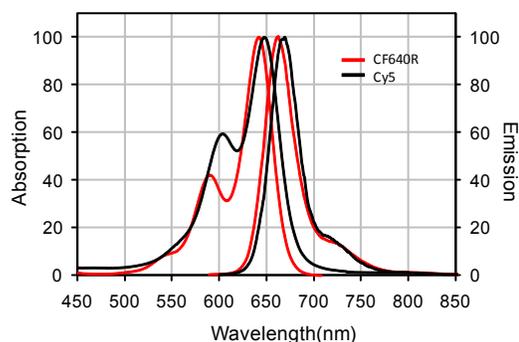


Figure 1. Absorption and emission spectra of CFTM640R and CyTM5 conjugated to goat anti-mouse IgG in PBS.

Other Related Products

You may also be interested in the following related products:

| CF Dye Product | Application | Unit Size |
|------------------------------|---|------------------------|
| NHS esters and maleimide | Labeling antibodies and other biomolecules | 1 μ mole |
| CF dye aminoxy and hydrazide | Labeling oligonucleotides and other biomolecules | 1 mg |
| CF dye protein labeling kits | Labeling antibodies and other biomolecules | 3 labelings |
| Streptavidin Conjugates | Microscopy, flow cytometry and Western blotting | 1 mg |
| Annexin V Conjugates | Labeling apoptotic cells for microscopy or flow cytometry | 0.5 mL (50 μ g/mL) |
| Phalloidin Conjugates | Microscopy | 300 U |
| α -Bungarotoxin | Labeling Ach-R for microscopy | 0.5 mg |

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