

# Product Information

## CF™647 Conjugated Antibodies

Catalog No.	Unit Size	Product Description
20048	0.5 mL	<b>Donkey Anti-Goat IgG (H+L) whole antibody</b> (min X Chicken, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, and Rat)
20048-1	50 uL	
20046	0.5 mL	<b>Donkey Anti-Mouse IgG (H+L) whole antibody</b> (min X Bovine, Chicken, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Rabbit, and Sheep)
20046-1	50 uL	
20047	0.5 mL	<b>Donkey Anti-Rabbit IgG (H+L) whole antibody</b> (min X Bovine, Chicken, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rat, and Sheep)
20047-1	50 uL	
20284	0.5 mL	<b>Donkey Anti-Sheep IgG (H+L) whole antibody</b> (min X Chicken, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, and Rat)
20284-1	50 uL	
20044	0.5 mL	<b>Goat Anti-Chicken IgY (H+L) whole antibody</b> (min X Bovine, Goat, Guinea Pig, Syrian Hamster, Horse, Human, Mouse, Rabbit, Rat, and Sheep)
20044-1	50 uL	
20041	0.5 mL	<b>Goat Anti-Guinea Pig IgG (H+L) whole antibody</b>
20041-1	50 uL	
20280	0.5 mL	<b>Goat Anti-Human IgG (H+L) whole antibody</b> (min X Bovine, Horse, and Mouse)
20280-1	50 uL	
20040	0.5 mL	<b>Goat Anti-Mouse IgG (H+L) whole antibody</b>
20040-1	50 uL	
20281	0.5 mL	<b>Goat Anti-Mouse IgG (H+L) whole antibody</b> (min x Human, Bovine, Horse, Rabbit, and Swine)
20281-1	50 uL	
20042	0.25 mL	<b>F(ab')<sub>2</sub> fragment of Goat Anti-Mouse IgG (H+L)</b>
20043	0.5 mL	
20043-1	50 uL	<b>Goat Anti-Rabbit IgG (H+L) whole antibody</b>
20282	0.5 mL	
20282-1	50 uL	<b>Goat Anti-Rabbit IgG (H+L) whole antibody</b> (min X Human, Mouse, and Rat)
20045	0.25 mL	
20283	0.5 mL	<b>F(ab')<sub>2</sub> fragment of Goat Anti-Rabbit IgG (H+L)</b>
20283-1	50 uL	
20286	0.5 mL	<b>Goat Anti-Rat IgG (H+L) whole antibody</b> (min X Human, Bovine, Horse, and Rabbit)
20286-1	50 uL	
20286	0.5 mL	<b>Goat Anti-Swine IgG (H+L) whole antibody</b>
20286-1	50 uL	
20049	0.5 mL	<b>Rabbit Anti-Goat IgG (H+L) whole antibody</b>
20049-1	50 uL	
20285	0.5 mL	<b>Rabbit Anti-Mouse IgG (H+L) whole antibody</b> (min X Human)
20285-1	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

$\lambda_{abs}/\lambda_{em} = 650/665$  nm (in pH 7.4 PBS buffer)  
CF™647 is spectrally similar to Cy™5, Alexa Fluor® 647 and DyLight™ 649.

### 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.

**NOTE: CF™647 is not compatible with VECTASHIELD® mounting media (Vector Labs).**

### Product Description

CF™647 antibodies are affinity-purified antibodies labeled with a red fluorescent dye CF™647, 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  $\alpha$ -bungarotoxin are also available for many CF™ dyes. Please visit the Biotium website at [www.biotium.com](http://www.biotium.com) for details.

## General Protocols for Using CF™-labeled IgG Secondary Antibodies

### Recommended Dilution Range

1-10  $\mu$ 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  $\mu$ 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  $\mu$ 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 precleaned 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 10<sup>6</sup> 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  $\mu$ 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.

CF<sup>TM</sup>-labeled antibodies can also be used for staining histological sections from paraffin-embedded or frozen tissues.

### References

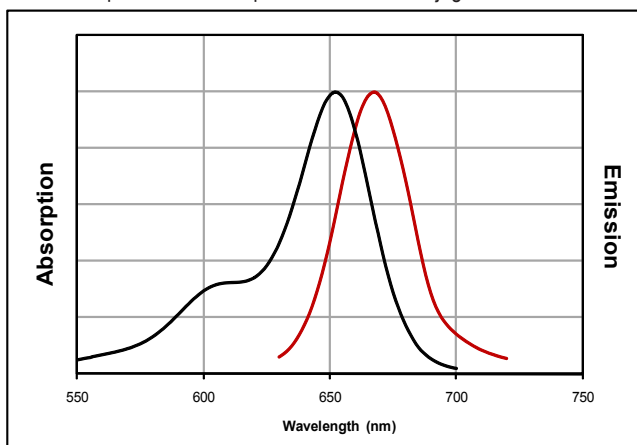
1. Donaldson, J.G. Immunofluorescence staining. (2001) *Curr Protoc Cell Biol.* Chapter 4: Unit 4.3.
2. Blose, S.H. and Feramisco, J.R. (1983) *Fluorescent methods in the analysis of cell structure.* Cold Spring Harbour Laboratory.

Useful websites:

[www.chroma.com](http://www.chroma.com)

Products are for research use only. Not for use in diagnostic or therapeutic procedures. CF<sup>TM</sup> dye technology is covered by pending US and international patents. Alexa is a registered trademark of Invitrogen, and Cy is a trademark of GE Healthcare; and DyLight is a trademark of Thermo Fisher Scientific.

Absorption/Emission Spectra of CF647 Conjugated Antibodies



### 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 $\mu$ 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 mg/mL)
Phalloidin Conjugates	Microscopy	300 U
$\alpha$ -Bungarotoxin	Labeling Ach-R for microscopy	0.5 mg

Biotium products are high-quality reagents and materials intended for research purposes only. Some products are potentially hazardous chemicals - please read the Material Safety Data Sheet for additional information regarding handling potentially hazardous chemicals. Several of Biotium products and products applications are covered by U.S. and international patents and pending patents. Our products are not available for resale or other commercial uses without a specific agreement from Biotium, Inc. We welcome inquiries about licensing the use of our dyes, trademarks or technologies. Please submit inquiries by e-mail to [btinfo@biotium.com](mailto:btinfo@biotium.com). All names containing the designation <sup>TM</sup> are trademarks of Biotium, Inc.

The manufacture, use, sale, offer for sale, or import of this product may be subject to one or more patents or pending applications owned or licensed by Biotium, Inc. The purchase price of this product includes a limited, non-transferable immunity from suit under U.S. Patent and corresponding patent claims outside of the United States, to use only the purchased amount of the products and components of the product solely for the buyer's own internal research (whether the buyer is an academic or for-profit entity), in a manner consistent with the accompanying product literature. No right to use, sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for any other purpose or a Commercial Purpose, is hereby granted expressly, by implication or by estoppel. Commercial Purpose means any activity by a party for consideration and include, but is not limited to: (1) use of the product or its components in manufacturing; (2) use of the product or its components to provide a service including without limitation, reporting information or data resulting from use of the product or its components for a fee or other commercial consideration; (3) use of the product or its components for therapeutic, diagnostic or prophylactic purposes; or (4) resale of the product or its components, whether or not such product or its components are resold for use in research. For products that are subject to multiple limited use label licenses, the most restrictive terms apply. This product is for research use only. Diagnostic uses require a separate license from Biotium, Inc. For information on purchasing a license to this product including for purposes other than research, contact Biotium, Inc., 3159 Corporate Place, Hayward, CA 94545, Tel: (510) 265-1027. Fax: (510) 265-1352.