

# CF<sup>TM</sup>543 Dye

*An orange fluorescent dye ideal for the 543 nm laser*

## Technical Summary

**Abs/Em Maxima:** 541/560 nm

**Extinction coefficient:** 100,000

**Molecular weight:** ~870

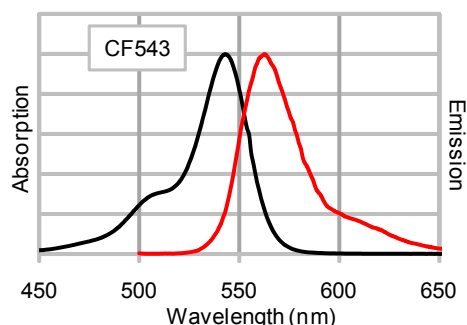
**Flow cytometry laser line:** 532 nm

**Microscopy laser line:** 543, 546 nm

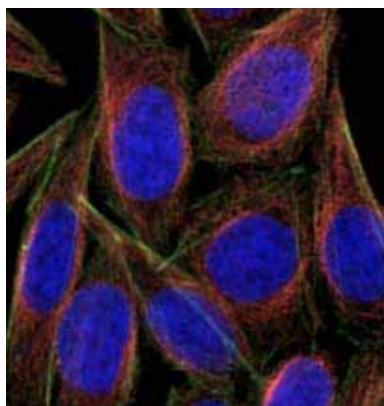
**Direct replacement for:** Alexa Fluor<sup>®</sup> 546, Tetramethylrhodamine (TAMRA).

## Advantages

- Significantly brighter than Alexa Fluor<sup>®</sup> 546
- Highly water-soluble and pH-insensitive



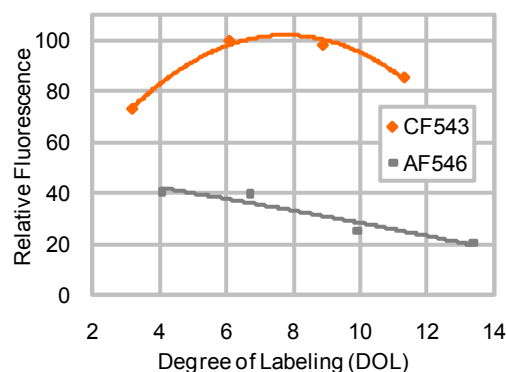
**Figure 1.** Absorption and emission spectra of CF<sup>TM</sup>543 conjugated to goat anti-mouse IgG in PBS.



**Figure 2.** HeLa cells stained with mouse anti-tubulin antibody detected using CF543 goat anti-mouse IgG (red). Actin filaments are stained with CF488A phalloidin conjugate (green) and nuclei are stained with RedDot2 nuclear counterstain (blue).

CF<sup>TM</sup>543 is an orange colored fluorescent dye with absorption and emission maxima at 541 and 560 nm, respectively (Figure 1). The dye is based on a new class of rhodamine dyes invented by Biotium scientists. Unlike traditional rhodamine dyes, CF<sup>TM</sup>543 is not only bright and photostable but also highly water-soluble. As a result, CF<sup>TM</sup>543 antibody conjugates retain excellent solubility and yield the brightest fluorescence among antibody conjugates prepared from spectrally similar dyes. For example, CF<sup>TM</sup>543 labeled goat anti-mouse IgG is significantly brighter than the antibody labeled with Alexa Fluor<sup>®</sup> 546 at similar degree of labeling (Figure 2).

A list of CF<sup>TM</sup>543-based products are shown in Table 1. 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<sup>TM</sup> dyes. Visit Biotium website: [www.biotium.com](http://www.biotium.com) for details.



**Figure 3.** Comparison of relative fluorescence of goat anti-mouse IgG antibody labeled with CF543 and Alexa Fluor 546, respectively, at various degree of labeling (DOL) (number of dye/protein) in PBS.



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## CF™543 fluorescent reagents

Product Name	Size	Cat. No.
<b>Selected CF™543-Labeled Secondary Antibody Conjugates</b>		
Bovine Anti-Goat IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Ch, GP, Hs, Hu, Ms, Rb, Rt, SHm)	0.5 mL	20313
	50 uL	20313-1
Donkey Anti-Chicken IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Gt, GP, Hs, Hu, Ms, Rb, Rt, Sh, SHm)	0.5 mL	20310
	50 uL	20310-1
Donkey Anti-Goat IgG (H+L) whole antibody, 2 mg/mL (min X Ch, GP, Hs, Hu, Ms, Rb, Rt, SHm)	0.5 mL	20314
	50 uL	20314-1
Donkey Anti-Guinea Pig IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Ch, Gt, Hs, Hu, Ms, Rb, Sh, SHm)	0.5 mL	20316
	50 uL	20316-1
Donkey Anti-Human IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Ch, GP, Gt, Hs, Ms, Rb, Rt, Sh, SHm)	0.5 mL	20318
	50 uL	20318-1
Donkey Anti-Mouse IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Ch, Gt, GP, Hs, Hu, Rb, Sh, SHm)	0.5 mL	20305
	50 uL	20305-1
Donkey Anti-Rabbit IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Ch, Gt, GP, Hs, Hu, Ms, Sh, SHm)	0.5 mL	20308
	50 uL	20308-1
Donkey Anti-Rat IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Ch, GP, Gt, Hs, Hu, Ms, Rb, Sh, SHm)	0.5 mL	20320
	50 uL	20320-1
Donkey Anti-Sheep IgG (H+L) whole antibody, 2 mg/mL (min X Ch, GP, Hs, Hu, Ms, Rb, Rt, SHm)	0.5 mL	20322
	50 uL	20322-1
Goat Anti-Chicken IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Gt, GP, Hs, Hu, Ms, Rb, Rt, Sh, SHm)	0.5 mL	20311
	50 uL	20311-1
Goat Anti-Guinea Pig IgG (H+L) whole antibody, 2 mg/mL	0.5 mL	20317
	50 uL	20317-1
Goat Anti-Human IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Hs, Ms)	0.5 mL	20319
	50 uL	20319-1
Goat Anti-Mouse IgG (H+L) whole antibody (min X rat), 2 mg/mL (min X Bv, Ch, Gt, GP Hs Hu Rb Rt, Sh, SHm)	0.5 mL	20329
	50 uL	20329-1
Goat Anti-Rabbit IgG (H+L) whole antibody, 2 mg/mL	0.5 mL	20309
	50 uL	20309-1
Goat Anti-Rat IgG (H+L) whole antibody, 2 mg/mL (min X Bv, Hs, Hu, Rb)	0.5 mL	20321
	50 uL	20321-1
<b>Other CF™543-Labeled Bioconjugates</b>		
dUTP	1 nmol	40002
Phalloidin	300 U	00043
Streptavidin	1 mg	29043
<b>CF™543 Reactive Dyes and Labeling Kits</b>		
Maleimide	1 umol	92044
Succinimidyl ester	1 umol	92105
Mix-n-Stain Antibody Labeling Kit, 5-20 ug	1 labeling	92287
Mix-n-Stain Antibody Labeling Kit, 20-50 ug	1 labeling	92267
Mix-n-Stain Antibody Labeling Kit, 50-100 ug	1 labeling	92247
Protein Labeling Kit	3 x 1 mg labelings	92209

Bv: bovine; Ch: chicken; Gt: goat; GP: Guinea pig; Hs: horse; Hu: human; Ms: mouse; Rb: rabbit; Sh: sheep; SHm: Syrian hamster; Sw: swine; Rt: rat

\*Please check Biotium website for a full listing of CF™543 and other CF™ dye products.



CF is a trademark of Biotium; CF dye technologies are covered by pending US and international patents.  
Listed products are for research use only. Not for use in diagnostic or therapeutic procedures.  
Alexa Fluor is registered trademark of Invitrogen.  
Cy is a trademark of GE Healthcare.

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