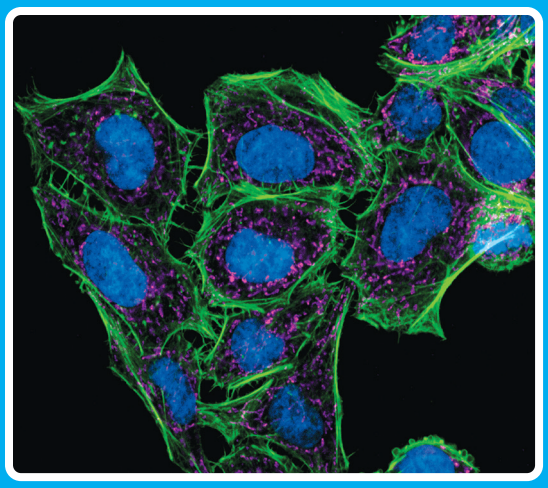


Mix-n-Stain™ Antibody Labeling Kits

Easy, Rapid, & Versatile Antibody Labeling

Stable CF® Dye Conjugates in Only 15 Minutes

Mix-n-Stain™ CF® Dye Antibody Labeling Kits enable easy and rapid conjugation of IgG antibodies to Biotium's bright and photostable CF® Dyes. IgG antibodies are ready to use in only 15 minutes, with minimal hands-on time. The kits result in antibodies with an optimal degree of labeling (DOL), yielding conjugates that offer exceptional performance for microscopy, flow cytometry, and other applications. In addition, the unique patented buffer system provides both convenience and flexibility with its high tolerance for common buffer additives, including BSA, Tris, gelatin, trehalose, azide, and ascites fluid. The labeling kits are offered with over 30 CF® Dyes in a range of batch sizes for labeling as little as 5 ug and up to 1 mg antibody. Biotium also offers kits optimized for labeling purified IgM antibodies in 30 minutes with your choice of 8 CF® Dyes.

Simple & Efficient Labeling Protocol



Comparable Performance to Commercially-Labeled Antibodies

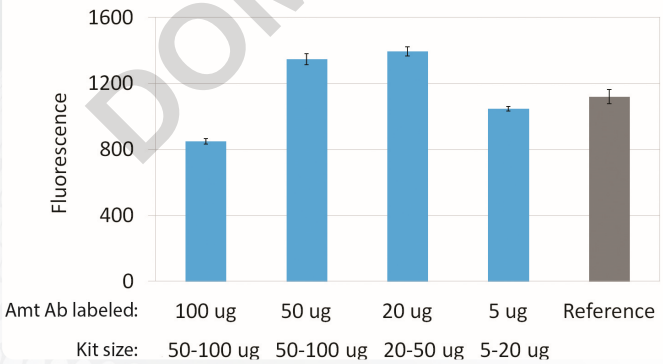


Figure 1. Flow cytometry analysis of Jurkat cells. CF®633 Mix-n-Stain™ conjugates of mouse anti-human CD3 antibodies (blue bars) prepared using different kit sizes perform similarly to the commercially available purified Alexa Fluor® 647 conjugate of the same primary antibody (gray bar).

Features

- Quick 15-minute labeling of IgG antibodies
- No purification, 100% antibody recovery
- Choice of over 30 bright CF® Dyes for labeling IgG antibodies
- Labeling tolerates BSA, gelatin, ascites fluid, and Tris
- Kit sizes for labeling ≤5 ug antibody to 1 mg of antibody
- Conjugates are stable for at least 6 months

Outshines Other Antibody Labeling Kits

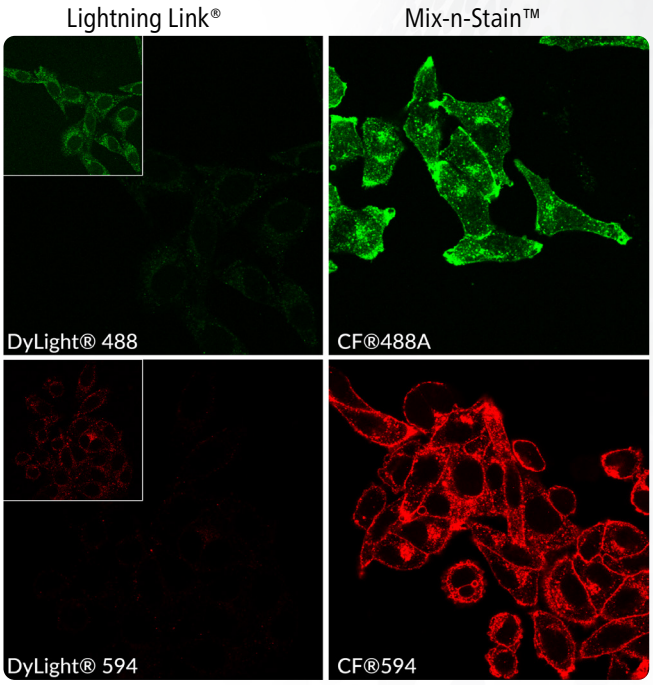


Figure 2. Mouse anti-transferrin receptor antibody was labeled using Lightning-Link® DyLight® Conjugation Kits (left) or Mix-n-Stain™ CF® Dye Antibody Labeling Kits (right) according to manufacturers' instructions. The insets (left) show the same field of view imaged with a higher gain setting.

Scan this QR Code to watch our video on Mix-n-Stain™ Antibody Labeling Kits

biotium

www.biotium.com

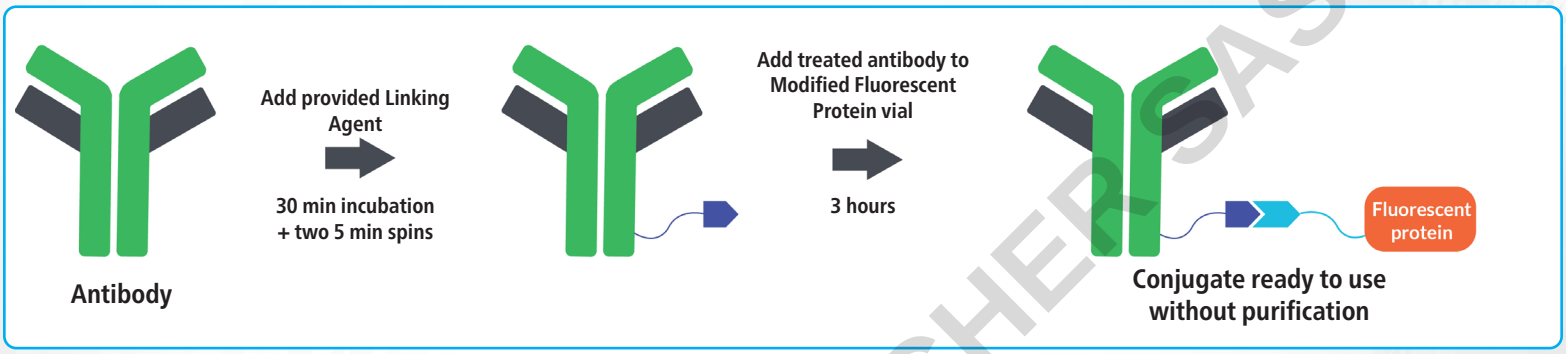
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Fluorescent Protein & Tandem Dye Antibody Labeling Kits

R-PE and APC fluorescent proteins are the brightest flow cytometry labels in their respective channels and can be coupled to small molecule dyes to form long Stokes shift tandem dyes for expanded multiplexing capability. While traditional protein-protein conjugation is complicated and time consuming, Mix-n-Stain™ Fluorescent Protein and Tandem Dye Kits greatly simplify the procedure, making it easy to label an antibody for flow cytometry. Labeling can be performed in 3 hours without purification and performs comparably or better than antibodies labeled with other commercially available kits (Figure 3). Mix-n-Stain™ Kits are available for labeling antibodies with R-PE (PE), APC, PerCP, or your choice of four tandem dyes.

Features

- 3 hour labeling protocol, no purification, 100% recovery
- Choice of APC, R-PE (PE), PerCP, or tandem dyes
- Kit sizes for labeling 25-50 ug, 50-100 ug, or 1 mg IgG



Tandem Dyes

Dye	Ex/Em (nm)	Channel
RPE-CF®583R	496, 546, 586/609	RPE-Texas Red®
RPE-CF®647T	496, 546, 555/665	RPE-Cy®5
APC-CF®750T	496, 546, 650/780	APC-Cy®7
APC-CF®790T*	496, 546, 784/806	APC-Cy®7

* APC-CF®790T is intended for spectral flow cytometry. For conventional flow cytometry use APC-CF®750T.

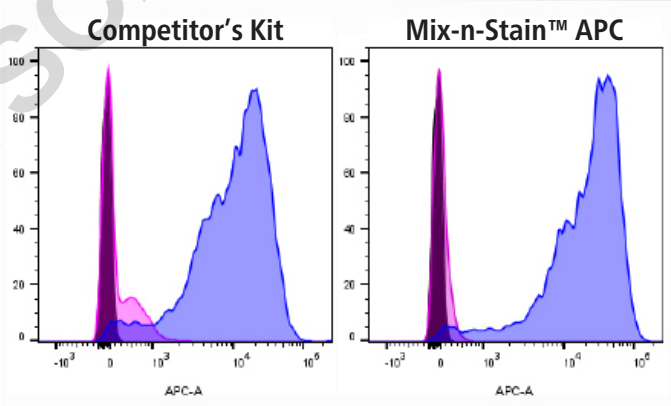


Figure 3. Anti-mouse secondary antibody was labeled with APC using either the Mix-n-Stain™ APC Labeling Kit, or a competitor's APC labeling kit. The antibodies were used to detect mouse anti-CD3 staining of Jurkat cells. The Mix-n-Stain™ labeled antibody showed lower background without primary antibody (pink) and higher signal on CD3-labeled cells (blue).

Optimized Labeling of Nanobodies®

Mix-n-Stain™ Nanobody Labeling Kits are designed specifically for labeling single-domain Nanobodies® (also called camelid single variable or VHH domains) with one of Biotium's bright and photostable CF® Dyes or biotin. The kits allow optimal labeling of 5-50 ug of Nanobody® in just 30 minutes, with minimal hands-on time and no purification. Labeling tolerates common buffer additives, including BSA, and there are dye options that are ideal for super-resolution microscopy and 2-photon imaging.

Features

- Simple 30-minute labeling, no purification, 100% recovery
- Choice of 7 CF® Dye colors or biotin
- Compatible with common stabilizers
- Label 5-20 ug or 20-50 ug of Nanobody®
- Dye options for super-resolution and 2-photon imaging

Anti-histone Nanobody® labeled using the Mix-n-Stain™ CF® 488A Nanobody® Labeling Kit

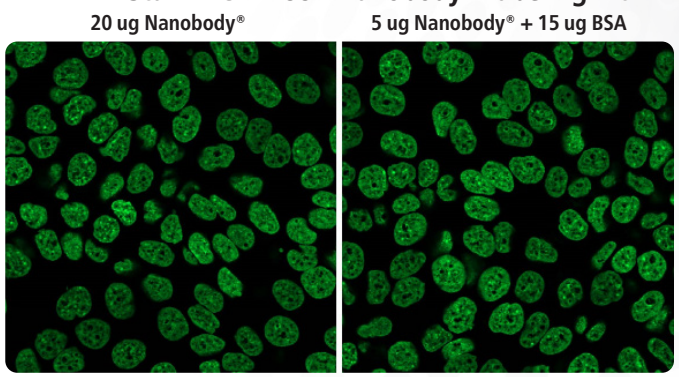


Figure 4. Anti-histone Nanobody® was labeled using the Mix-n-Stain™ CF®488A 5-20 ug Nanobody® Labeling Kit, then used to stain methanol-fixed HeLa cells at 2 ug/mL. Labeling of Nanobody® in the presence or absence of BSA generated bright and specific conjugates. Labeled BSA did not affect specificity of staining.

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Labeling Kits Specialized for STORM Imaging

Mix-n-Stain™ STORM CF® Dye Antibody Labeling Kits allow you to label 50 ug of your antibody with one of Biotium's STORM CF® Dyes to produce an antibody conjugate with a low 1-2.5 degree of labeling (DOL) optimal for super-resolution Stochastic Optical Reconstruction Microscopy (STORM). These kits offer a choice of CF® Dyes developed with superior brightness and unique photoswitching properties that are ideal for this application. Additionally, Biotium has also developed novel green-excited STORM dyes CF®583R and CF®597R to expand the color palette for multi-color STORM. Dozens of peer-reviewed publications have confirmed multiple CF® Dyes as the top-performing STORM dyes for their color. Labeling takes just 30 minutes, with minimal hands-on time and no purification.

Features

- Simple 30-minute labeling, no purification, and 100% recovery
- Choice of 8 CF® Dyes validated as top performers for STORM
- Label antibodies with low (1-2.5) DOL optimal for STORM

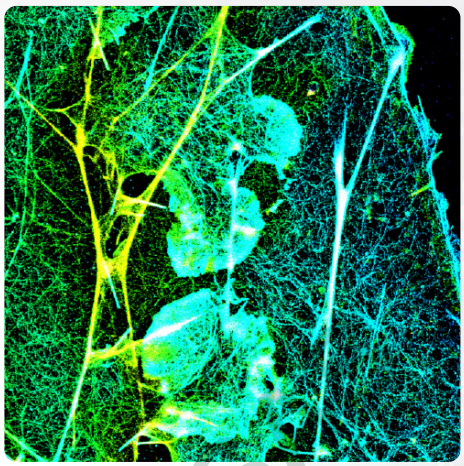


Figure 5. (d)STORM image of the actin cytoskeleton in a fixed COS-7 cell labeled with phalloidin-CF®583R. Image courtesy of Bowen Wang, Michael Xiong, and Professor Ke Xu, College of Chemistry, University of California, Berkeley.

Rapid and Covalent Labeling of Ligands

Mix-n-Stain™ CF® Dye Small Ligand Labeling Kits are designed for rapid, covalent labeling of low molecular weight (~150 to 5,000 Da) biological ligands or substrates. Labeling only requires a 30-minute incubation step and a brief 5-minute quenching step, with no downstream purification required. The resulting dye-ligand conjugate offers minimal non-specific staining and performs as well as synthetic fluorescent ligands from leading suppliers (Figure 6) at a fraction of the cost. Ligands that have an aliphatic amine, such as SNAP-tag®, CLIP-tag™, HaloTag®, and TMP-tag are compatible with the Mix-n-Stain™ CF® Dye Small Ligand Labeling Kit.

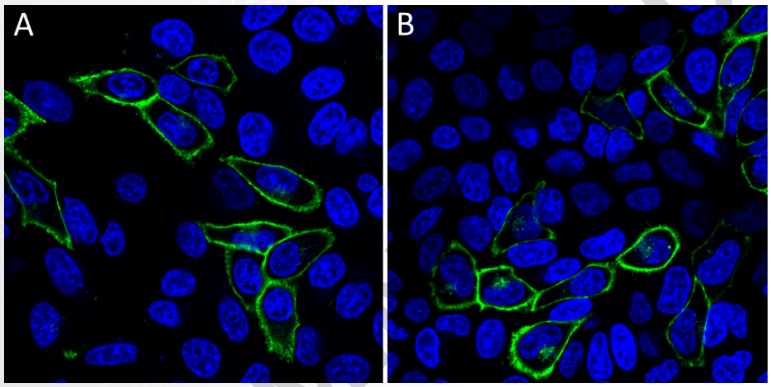


Figure 6. Live cell surface imaging of HeLa cells transfected with CLIP-tag™-NK1R fusion protein, detected with (A) CLIP-tag™ conjugated to green fluorescent CF®488A using Mix-n-Stain™, or (B) CLIP-Surface™ 488 ligand from New England Biolabs. The nuclei were stained blue with Hoechst 33342.

Features

- Simple 30-minute labeling, no purification, 100% recovery
- Choose from 15 CF® Dyes
- Labels molecules with a MW of 150-5000
- Suitable for SNAP-tag®, CLIP-tag™, and HaloTag®

Mix-n-Stain™ Small Ligand Labeling Kits

Dye	Ex/Em (nm)	Cat. No.	Target Localization[1]
CF®405M	416/452	92362	Surface
CF®488A	490/516	92350	Surface
CF®568	562/584	92351	Surface
CF®594	593/615	92352	Surface
CF®633	629/650	92353	Surface
CF®640R	642/663	92354	Surface
CF®647	652/668	92359	Surface
CF®660C	667/685	92360	Surface
CF®680	681/698	92361	Surface
CF®680R	680/701	92355	Surface
CF®408	408/450	92356	Intracellular
CF®500	502/511	92357	Intracellular
CF®540	544/570	92358	Intracellular
CF®555	554/568	92364	Intracellular
CF®650	653/673	92363	Intracellular

1. Select a CF® Dye with the appropriate localization compatibility.

Kits for Labeling HRP, AP, or GOx Enzymes

Mix-n-Stain™ Enzyme Antibody Labeling Kits allow you to prepare antibody conjugates labeled with horseradish peroxidase (HRP), alkaline phosphatase (AP), or glucose oxidase (GOx) in about 2-3 hours. The resulting labeled antibodies are suitable for use in applications such as western blotting, ELISA, and immunohistochemistry.

Features

- 2-3 hour labeling, with no purification
- Choice of HRP, AP, or GOx
- Compatible with WB, ELISA, and IHC

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Mix-n-Stain™ CF® Dye Antibody Labeling Kits

Dye	Ex/Em (nm)	5-20 ug labeling	20-50 ug labeling	50-100 ug labeling	3x(5-20 ug) labelings	1 mg labeling
CF®350	355/450	92270	92250	92230		92420
CF®405S	411/431	92271	92251	92231		92421
CF®405M	416/452	92272	92252	92232		92404
CF®405L	413/547	92303	92304	92305	92445	92454
CF®430	424/497	92316	92317	92318		
CF®440	433/512	92319	92320	92321		
CF®450	448/533	92322	92323	92324		
CF®488A	490/516	92273	92253	92233	92446	92405
CF®514	516/549	92331	92332	92333		
CF®532	531/552	92289	92290	92291		
CF®543	543/563	92287	92267	92247		
CF®555	554/568	92274	92254	92234		92406
CF®568	562/584	92275	92255	92235	92447	92407
CF®570	568/592	92334	92335	92336		
CF®583	584/606	92337	92338	92339		
CF®583R	585/609	92455	92456	92457		
CF®594	593/615	92276	92256	92236	92448	92408
CF®594ST	593/620	92458	92459	92460		
CF®597R	597/619	92461	92462	92463		
CF®633	629/650	92277	92257	92237		92409
CF®640R	642/663	92278	92258	92245		
CF®647	652/668	92279	92259	92238	92449	92410
CF®660C	667/685	92280	92260	92239		
CF®660R	662/682	92281	92261	92243		
CF®680	681/698	92282	92262	92240		92422
CF®680R	680/701	92283	92263	92246		
CF®700	696/721	92425	92426	92427		
CF®750	755/777	92284	92264	92241		92423
CF®770	770/797	92285	92265	92242		92424
CF®790	783/808	92288	92268	92248		
CF®800	797/817	92428	92429	92430		
CF®820	822/835	92431	92432	92433		

Mix-n-Stain™ CF® Dye IgM Antibody Labeling Kits

Dye	Ex/Em (nm)	25 ug labeling	100 ug labeling
CF®405M	416/452	92558	92559
CF®405L	413/547	92560	92561
CF®488A	490/516	92562	92563
CF®555	554/568	92564	92565
CF®568	562/584	92566	92567
CF®594	593/615	92568	92569
CF®640R	642/663	92570	92571
CF®647	652/668	92572	92573
Fluorescein/FITC	498/517	92574	92575

Mix-n-Stain™ Fluorescent Protein Labeling Kits

Label	Ex/Em (nm)	25-50 ug labeling	50-100 ug labeling	3x(25-50 ug) labelings	1 mg labeling
APC	650/660	92306	92307	92453	
R-PE	488, 532, 561/576	92298	92299	92452	
PerCP	482/677	92308	92309		
RPE-CF®583R	496, 546, 586/609	92442	92443		
RPE-CF®647T	496, 546, 555/665	92340	92341		92346
APC-CF®750T	496, 546, 650/780	92310	92311		
APC-CF®790T	496, 546, 784/806	92347	92348		

Mix-n-Stain™ Nanobody Labeling Kits

Label or Dye	Ex/Em (nm)	5-20 ug labeling	20-50 ug labeling
CF®405S	411/431	92502	92503
CF®488A	490/516	92504	92505
CF®568	562/584	92506	92507
CF®594	593/615	92508	92509
CF®640R	642/663	92510	92511
CF®647	652/668	92512	92513
CF®680R	680/701	92514	92515
Biotin	N/A	92500	92501

Mix-n-Stain™ STORM CF® Dye Labeling Kits

Dye	Ex/Em (nm)	50 ug labeling
CF®568	562/584	92550
CF®583R	585/609	92551
CF®594ST	593/620	92552
CF®597R	597/619	92553
CF®647	652/668	92554
CF®660C	667/685	92555
CF®680	681/698	92556
CF®750	755/779	92557

Mix-n-Stain™ Enzyme Labeling Kits

Enzyme	10-20 ug labeling	25-50 ug labeling	50-100 ug labeling	3x(10-20 ug) labelings	1 mg labeling
AP		92314	92315		
GOx		92312	92313		
HRP	92300	92301	92302	92451	92437

Mix-n-Stain™ Kits for Other Labels

Label or Dye	Ex/Em (nm)	5-20 ug labeling	20-50 ug labeling	50-100 ug labeling	3x(5-20 ug) labelings	1 mg labeling
Fluorescein/FITC	498/517	92294	92295	92296		92411
Cyanine 555	554/568	92412	92413	92414		92415
Cyanine 647	652/668	92416	92417	92418		92419
Biotin	N/A	92286	92266	92244	92444	
DNP	N/A	92325	92326	92327		
DIG	N/A	92328	92329	92330	92450	

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