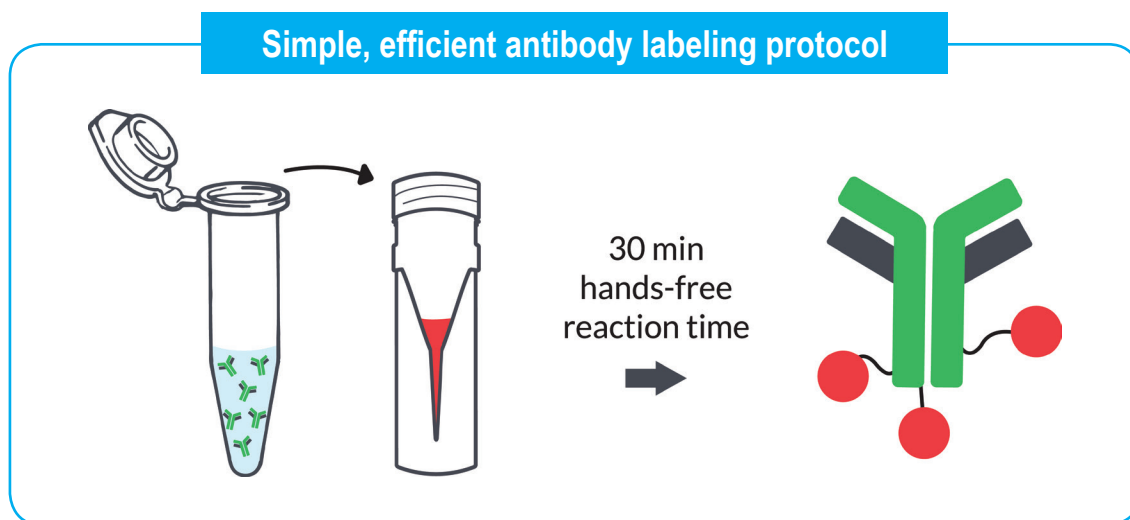


# Rapid Antibody Labeling Kits

and Rapid Ligand Labeling Kits

Fast and easy kits for labeling antibodies, proteins, and small ligands



## Mix-n-Stain™ Antibody Labeling Kits

### Revolutionary labeling technology:

- As fast as 30 minutes, with minimal hands-on time
- 100% yield, post-labeling purification not needed
- Labeling tolerates BSA, gelatin, ascites fluid, and Tris

### Large selection of labels and kits size for greater flexibility:

- Choice of 26 bright and stable fluorescent CF® dyes, fluorescent proteins, biotin, enzymes, and haptens
- Kits for labeling 5 ug or less, and up to 100 ug

# Mix-n-Stain™

## Antibody Labeling Kits

Mix-n-Stain™ Antibody Labeling Kits dramatically simplify the process of preparing fluorescently labeled antibodies, particularly primary antibodies. Simply mix your antibody with the dye or protein of your choice. After 30 minutes and without a separation step, you will have a covalently labeled antibody conjugate that is as good as a commercial pre-labeled fluorescent antibody (Figure 1). There is no need to calculate how much dye you should use; just follow the protocol provided and you will always produce optimal labeling. Moreover, unlike other antibody labeling kits, the Mix-n-Stain™ labeling reaction can tolerate the presence of common stabilizers, such as sodium azide, Tris, low levels of glycerol, BSA, gelatin, and even ascites fluid.

Mix-n-Stain™ Antibody Labeling Kits are superior to Zenon® and Lightning-Link® labeling kits (Figure 2). Unlike Zenon® labeling kits which use antibody fragments or other linkers for labeling, the dyes or proteins are covalently linked to the antibody using the Mix-n-Stain™ labeling kits; thus, there is no dye transfer between antibodies or diffusion during multi-color staining. In addition, Mix-n-Stain™ conjugates are stable for at least 6 months in Storage Buffer, while Zenon® labeled antibodies must be used right away.

Mix-n-Stain™ labeled antibodies perform comparably to purified antibody conjugates

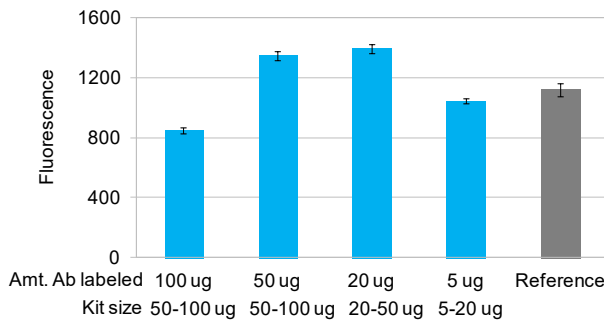


Figure 1. Flow cytometry analysis of Jurkat cells stained with CF@633 Mix-n-Stain labeled mouse anti-human CD3 antibodies (BD cat# 555330). Reference (gray bar): Purified Alexa Fluor® 647 mouse anti-human CD3 (BD cat# 557706). Mix-n-Stain™ conjugates prepared using different kit sizes perform similarly to the commercially available purified conjugate of the same primary antibody.

Mix-n-Stain™ labeled antibodies perform better than Lightning-Link® labeled antibodies

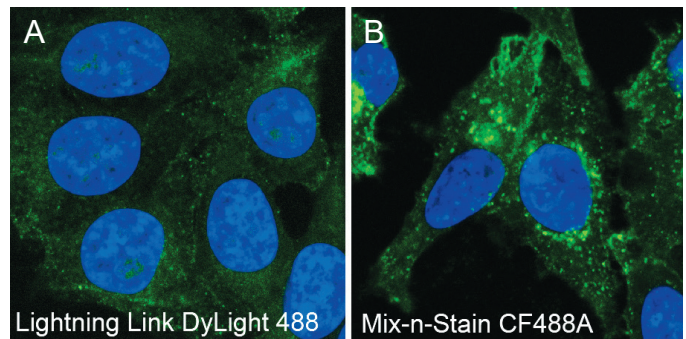


Figure 2. Mouse anti-transferrin receptor antibody from BD Biosciences (endosome and plasma membrane marker) was labeled using Lightning-Link® Rapid DyLight® 488 Conjugation Kit from Novus Biologicals (A) or Mix-n-Stain™ CF@488A Antibody Labeling Kit (B) according to manufacturers' instructions. The CF@488A conjugate staining shows higher signal and more specific staining compared the DyLight® 488 conjugate.

### Large selection of labels:

- Bright and photostable CF® dyes: more than 20 color options
- Fluorescent proteins and tandem dyes: R-PE, APC, PerCP, RPE-CF®647T, & APC-CF®750T
- Enzymes: horseradish peroxidase (HRP), alkaline phosphatase (AP), glucose oxidase (GOx)
- Biotin, dinitrophenol (DNP), digoxigenin (DIG)

### Compatibility:

- Compatible with <10% glycerol, <20 mM Tris, and up to 4:1 ratio of BSA:IgG or gelatin:IgG
- Quick ultrafiltration needed for IgG containing >10% glycerol, 20 mM Tris, or glycine
- Modified protocol needed for IgG with >4:1 ratio of BSA:IgG or gelatin:IgG, or IgG in ascites

# Mix-n-Stain™

## Small Ligand Labeling Kits

Mix-n-Stain™ CF® Dye Small Ligand Labeling Kits are designed for rapid, covalent labeling of low molecular weight (Mwt ~ 150 - 5,000) and relatively high affinity biological ligands (or substrates) without a final purification step. Simply mix your ligand with the CF® dye of your choice and after a 30 minute incubation and a brief quenching step (no purification required), you will have a covalently labeled dye-ligand conjugate for protein labeling that performs as well as synthetic fluorescent ligands from leading suppliers (Figure 3), at a fraction of the cost. Even without column purification, the CF® dye-ligand does not show non-specific staining. 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.

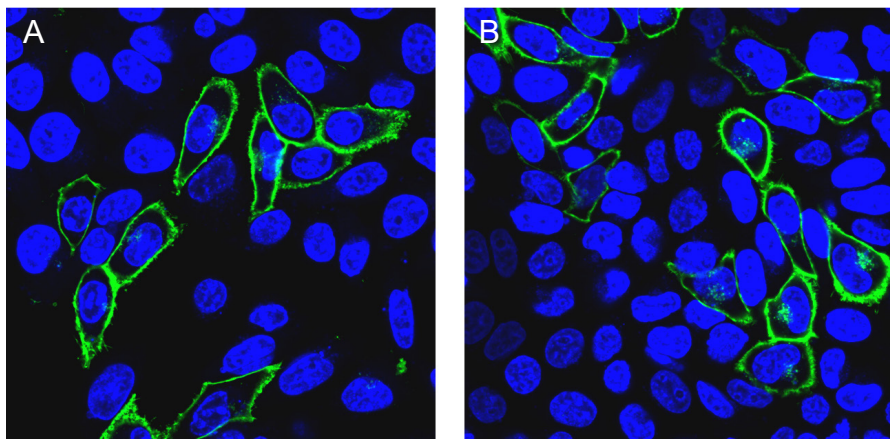


Figure 3. Live cell imaging of HeLa cells expressing CLIP-NK1R labeled with (A) CLIP-amine conjugated to CF®488A using Mix-n-Stain™; and (B) CLIP-surface 488 from New England Biolabs (Cat. S9232S). Cell nuclei were stained with Hoechst 33342 (see related products). Green: FITC channel; Blue: DAPI channel.

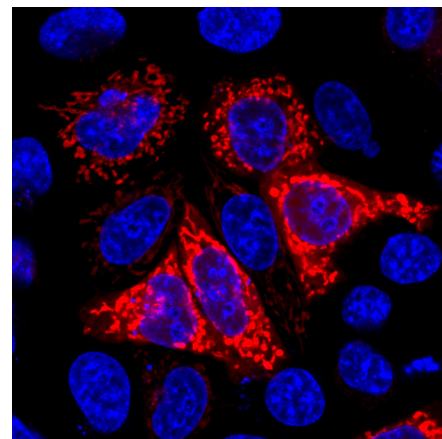


Figure 4. CF®540 Mix-n-Stain™-labeled Cox8A (mitochondria protein) in living cells via the CLIP-tag™. Cell nuclei were stained with Hoechst 33342. Blue: DAPI channel; red: TMR channel.

### Common tag types that can be labeled for cell surface or intracellular targets:

- SNAP-tag®
- CLIP-tag™
- HaloTag®
- TMP-tag

### Mix-n-Stain™ Small Ligand Labeling Kits

Label/dye	Ex (nm)	Em (nm)	Cat. #	VWR Cat. #	Staining
CF®405M	408	452	92362	10001-686	Surface
CF®647	650	665	92359	10001-680	Surface
CF®660C	667	685	92360	10001-682	Surface
CF®680	681	698	92361	10001-684	Surface
CF®408	408	450	92356	10001-674	Intracellular
CF®500	500	510	92357	10001-676	Intracellular
CF®540	540	570	92358	10001-678	Intracellular
CF®555	555	585	92364	76221-510	Intracellular
CF®650	650	670	92363	75845-634	Intracellular



Figure 5. Two-color live cell imaging. CF®500 Mix-n-Stain™ kit was used to label nuclear protein H2B via the CLIP-tag™ (green); CF®568 Mix-n-Stain™ kit was used to label cell surface protein ADRβ2 via the SNAP-tag® (red).

### Small Ligand for Labeling

Ligand	Cat. #	VWR Cat. #	Size
TMP-PEG3-amine, TFA salt	91056	75784-042	1 mg

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

Label/ Dye	Ex (nm)	Em (nm)	5-20 ug Antibody Labeling		20-50 ug Antibody Labeling		50-100 ug Antibody Labeling	
			Biotium Cat. #	VWR Cat. #	Biotium Cat. #	VWR Cat. #	Biotium Cat. #	VWR Cat. #
CF@350	347	448	92270	89171-576	92250	89171-544	92230	89171-512
CF@405L	395	545	92303	10119-156	92304	10119-158	92305	10119-160
CF@405M	408	452	92272	89171-580	92252	89171-548	92232	89171-516
CF@405S	404	431	92271	89171-578	92251	89171-546	92231	89171-514
CF@430	426	498	92316	75832-806	92317	75832-808	92318	75832-518
CF@440	440	515	92319	75832-520	92320	75832-522	92321	75832-524
CF@450	450	538	92322	75832-526	92323	75832-528	92324	75832-636
CF@488A	490	515	92273	89171-582	92253	89171-550	92233	89171-518
CF@514	516	548	92331	75832-830	92332	75832-832	92333	75832-642
CF@532	527	558	92289	89427-120	92290	89427-122	92291	89427-124
CF@543	541	560	92287	89411-618	92267	89411-612	92247	89411-606
CF@555	555	565	92274	89171-584	92254	89171-552	92234	89171-520
CF@568	562	583	92275	89171-586	92255	89171-554	92235	89171-522
CF@570	568	591	92334	76221-494	92335	76221-496	92336	76221-498
CF@583	583	606	92237	76221-500	92238	76221-502	92239	76221-504
CF@594	593	614	92276	89171-588	92256	89171-556	92236	89171-524
CF@633	630	650	92277	89171-590	92257	89171-558	92237	89171-526
CF@640R	642	662	92278	89171-592	92258	89171-560	92245	89171-528
CF@647	650	665	92279	89171-594	92259	89171-562	92238	89171-530
CF@660C	667	685	92280	89171-596	92260	89171-564	92239	89171-532
CF@660R	663	682	92281	89171-598	92261	89171-566	92243	89171-534
CF@680	681	698	92282	89171-600	92262	89171-568	92240	89171-536
CF@680R	680	701	92283	89171-602	92263	89171-570	92246	89171-538
CF@750	755	777	92284	89171-604	92264	89171-572	92241	89171-540
CF@770	770	797	92285	89171-606	92265	89171-574	92242	89171-542
CF@790	784	806	92288	89411-620	92268	89411-614	92248	89411-608

## Mix-n-Stain™ Biotin, Enzyme, or Hapten Antibody Labeling Kits

Label	Biotium Cat. # 5-20 ug Ab	VWR Cat. #	Labeling Size
Biotin	92286	89411-616	5-20 ug Ab
Biotin	92266	89411-610	20-50 ug Ab
Biotin	92244	89411-604	50-100 ug Ab
HRP	92300	10119-210	10-20 ug Ab
HRP	92301	10119-212	25-50 ug Ab
HRP	92302	10119-214	50-100 ug Ab
AP	92314	75832-752	25-50 ug Ab
AP	92315	75832-754	50-100 ug Ab
DNP	92325	75832-638	5-20 ug Ab
DNP	92326	75832-640	20-50 ug Ab
DNP	92327	75832-530	50-100 ug Ab
DIG	92328	75832-824	5-20 ug Ab
DIG	92329	75832-826	20-50 ug Ab
DIG	92330	75832-828	50-100 ug Ab

## Mix-n-Stain™ Fluorescent Protein and Tandem Dye Antibody Labeling Kits

Label/dye	Biotium Cat. #	VWR Cat. #	Labeling Size
APC	92306	10154-176	25-50 ug Ab
	92307	10154-232	50-100 ug Ab
R-PE	92298	10119-216	25-50 ug Ab
	92299	10119-218	50-100 ug Ab
RPE-CF@647T	92340	76221-506	25-50 ug Ab
	92341	76221-508	50-100 ug Ab
	92346	76294-164	1 mg Ab
APC-CF@750T	92310	75784-110	25-50 ug Ab
	92311	75784-112	50-100 ug Ab

Mix-n-Stain and CF dye technologies are covered by US and international patents. CF is a registered trademark of Biotium, Inc. Mix-n-Stain is a trademark of Biotium, Inc. Zenon and DyLight are registered trademarks of ThermoFisher Scientific. Lightning-Link is a registered trademark of Innova Biosciences. SNAP-tag is a registered trademark and CLIP-tag is a trademark of New England Biolabs. HaloTag is a registered trademark of Promega Corporation.



Prices and product details are current when published and subject to change without notice. | Certain products may be limited by federal, state, provincial, or local regulations. | VWR, part of Avantor, makes no claims or warranties concerning sustainable/green products. Any claims concerning sustainable/green products are the sole claims of the manufacturer and not those of VWR International, LLC and/or Avantor, Inc. or affiliates. All prices are in US dollars unless otherwise noted. Offers valid in US and Canada, void where prohibited by law or company policy, while supplies last. | Trademarks are owned by Avantor, Inc. or its affiliates, unless otherwise noted. | Visit [vwr.com](http://vwr.com) to view our privacy policy, trademark owners, and additional disclaimers. © 2019 Avantor, Inc. All rights reserved.

