

Novel Solid-phase Antibody Labeling Using APEX™ Antibody Labeling Kits

Introduction Many IgG antibodies are available only in small quantities and are packaged with stabilizing proteins, such as bovine serum albumin (BSA), or other contaminants. These contaminants can interfere with the amine-reactive labeling reagents used to covalently attach a fluorophore to an antibody, and removing these contaminants can cause significant antibody loss. The new APEX™ Antibody Labeling Kits provide a convenient means of directly labeling a very small amount of IgG antibody (10–20 µg) with a fluorophore, while allowing you to easily remove contaminants without losing antibody.

Although secondary antibodies may offer a brighter fluorescent signal, using directly labeled antibodies eliminates the background fluorescence commonly observed when secondary antibodies bind nonspecifically to the sample. In addition, directly labeled antibodies allow you to use more than one same-species antibody in a single staining experiment.

APEX™ Antibody Labeling Kits The APEX™ Antibody Labeling Kits use a solid-phase labeling technique that captures the IgG antibody on the resin inside the APEX™ antibody labeling tip (Figure 1). Any contaminants, including stabilizing proteins or amine-containing buffers, are simply eluted through the tip. After applying the amine-reactive label, a fluorescent IgG conjugate is ready for use in an imaging or flow cytometry application in as little as 2.5 hours with very little hands-on time.

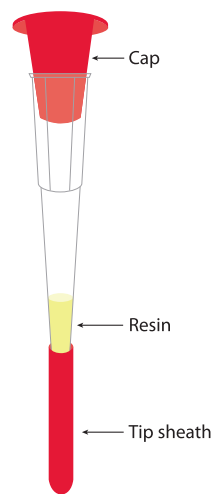


Figure 1. APEX™ antibody labeling tip.

The APEX™ antibody labeling kits include all of the reagents necessary to perform five separate labeling reactions of 10–20 µg of IgG antibody with superior Molecular Probes® fluorophores, some of which can be used as alternatives to biotin (Table 1). Unlike biotin, which is an endogenous ligand in mitochondria, dye-based haptens permit background-free staining of cells and tissues. Other available Molecular Probes® antibody and protein labeling kits are optimized for noncovalent labeling of smaller or larger amounts of IgG antibodies or proteins >30 kDa (Table 2). Visit www.invitrogen.com/apex for more details.

Table 1. Spectral characteristics and applications of the fluorescent labels available in the APEX™ Antibody Labeling Kits.

Product	Ex*	Em*	Application	Quantity	Cat. no.
APEX™ Alexa Fluor® 488 Antibody Labeling Kit	495	518	Fluorescent label for use in imaging or flow cytometry; hapten for signal amplification with anti-Alexa Fluor® 488 antibodies	1 kit	A10468
APEX™ Alexa Fluor® 555 Antibody Labeling Kit	555	565	Fluorescent label for use in imaging	1 kit	A10470
APEX™ Alexa Fluor® 594 Antibody Labeling Kit	590	617	Fluorescent label for use in imaging	1 kit	A10474
APEX™ Alexa Fluor® 647 Antibody Labeling Kit	650	665	Fluorescent label for use in imaging or flow cytometry	1 kit	A10475
APEX™ Oregon Green® 488 Antibody Labeling Kit	496	524	Fluorescent label for use in imaging or flow cytometry; hapten for signal amplification with anti-fluorescein/Oregon Green® antibodies	1 kit	A10476
APEX™ Pacific Blue™ Antibody Labeling Kit	416	451	Fluorescent label for use in imaging or flow cytometry	1 kit	A10478

*Fluorescence excitation (Ex) and emission (Em) maxima, in nm.

Table 2. Molecular Probes® antibody and protein labeling kits.

IgG amount	Product	Features
<1–20 µg	Zenon® IgG Labeling Kits	<ul style="list-style-type: none"> Labeled antibodies ready to use in 10 minutes Isotype-specific labeling Fast, noncovalent attachment of label Labeling compatible with stabilizing proteins such as BSA
10–20 µg	APEX™ Antibody Labeling Kits	<ul style="list-style-type: none"> Labeled antibodies ready to use in 2.5 hours (~15 minutes hands on time) Covalent attachment of label Labeling compatible with stabilizing proteins such as BSA
20–100 µg	Microscale Protein Labeling Kits	<ul style="list-style-type: none"> Labeled antibodies ready to use in 2 hours (~30 minutes hands on time) Covalent attachment of label Optimized for proteins between 10–150 kDa, including IgG antibodies (~150 kDa) Stabilizing proteins must be removed from sample before labeling
100 µg	Monoclonal Antibody Labeling Kits	<ul style="list-style-type: none"> Labeled antibodies ready to use in 90 minutes (~15 minutes hands on time) Covalent attachment of label Optimized for IgG antibodies (~150 kDa) Stabilizing proteins must be removed from sample before labeling Designed to label polyclonal and monoclonal IgG antibodies
1 mg	Protein Labeling Kits	<ul style="list-style-type: none"> Labeled antibodies ready to use in 2 hours (~30 minutes hands on time) Covalent attachment of label Optimized for IgG antibodies (~150 kDa) Stabilizing proteins must be removed from sample before labeling
0.3–5 mg	SAIVI™ Antibody Labeling Kits	<ul style="list-style-type: none"> Labeled IgG antibodies ready to use in 1.5 hours (~10 minutes hands on time) Covalent attachment of label Optimized degree of labeling for <i>in vivo</i> imaging applications Labeled antibodies ready for use in applications that require azide-free reagents, such as live-cell imaging or direct injection into animals

Product List Current prices may be obtained from our website or from our Customer Service Department.

Cat. no.	Product Name	Unit Size
A10468	APEX™ Alexa Fluor® 488 Antibody Labeling Kit	1 kit
A10470	APEX™ Alexa Fluor® 555 Antibody Labeling Kit	1 kit
A10474	APEX™ Alexa Fluor® 594 Antibody Labeling Kit	1 kit
A10475	APEX™ Alexa Fluor® 647 Antibody Labeling Kit	1 kit
A10476	APEX™ Oregon Green® 488 Antibody Labeling Kit	1 kit
A10478	APEX™ Pacific Blue™ Antibody Labeling Kit.....	1 kit

Contact Information

Molecular Probes, Inc.

29851 Willow Creek Road
Eugene, OR 97402
Phone: (541) 465-8300
Fax: (541) 335-0504

Customer Service:

6:00 am to 4:30 pm (Pacific Time)
Phone: (541) 335-0338
Fax: (541) 335-0305
probesorder@invitrogen.com

Toll-Free Ordering for USA:

Order Phone: (800) 438-2209
Order Fax: (800) 438-0228

Technical Service:

8:00 am to 4:00 pm (Pacific Time)
Phone: (541) 335-0353
Toll-Free (800) 438-2209
Fax: (541) 335-0238
probetech@invitrogen.com

Invitrogen European Headquarters

Invitrogen, Ltd.
3 Fountain Drive
Inchinnan Business Park
Paisley PA4 9RF, UK
Phone: +44 (0) 141 814 6100
Fax: +44 (0) 141 814 6260
Email: euroinfo@invitrogen.com
Technical Services: eurotech@invitrogen.com

For country-specific contact information,
visit www.invitrogen.com.

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