Revised: 23–April–2003

Zenon Rabbit IgG Labeling Kits

Quick Facts

Storage upon receipt:

- 2–6°C
- Protect from light

Abs/Em: See Table 1

Introduction

The Zenon™ Rabbit IgG Labeling Kits provide a fast, versatile and reliable method for producing antibody conjugates, even with very small (sub-microgram) amounts of starting material. Antibody conjugates formed using Zenon technology may be used to stain cells in any application where a directly labeled primary antibody is suitable, including flow cytometry, imaging, high-throughput and other applications. Moreover, this technology simplifies applications that previously were time consuming or not practical, such as the use of multiple rabbit-derived antibodies in the same staining protocol.

The Zenon Rabbit IgG Labeling Kits are available for labeling rabbit IgG antibodies with a large selection of premium fluorescent dyes, including our entire range of Alexa Fluor dyes, as well as conventional dyes, R-phycoerythrin, allophycocyanin, enzymes and biotin (Table 1). We also offer two Zenon Tricolor Rabbit IgG Labeling Kits, each with a selection of three different Zenon rabbit IgG labeling reagents.

Zenon labeling technology utilizes a fluorophore-, biotin- or enzyme-labeled Fab fragment directed against the Fc portion of an intact IgG primary antibody in order to form a labeling complex (Figure 1). The labeled Fab fragments have been affinity purified during their preparation to ensure their high affinity and selectivity for the Fc portion of the primary antibody. Because this labeling is based on immunoselectivity, the Zenon labeling method does not require the removal of exogenous proteins such as serum albumin or amine-containing buffers from the antibody prior to forming the complex. Crossreactivity is low with antibodies from other species.

Formation of the Fab–antibody complex occurs in less than 5 minutes, and nearly all of the primary antibodies in the mixture are labeled. Complexes formed using this technology display fluorescence intensity or enzymatic activity similar to that of directly labeled primary antibodies. In addition, the extent of antibody labeling (and thus the fluorescence intensity or enzymatic activity of the probe) can be adjusted by varying the amount of Zenon labeling reagent that is added, i.e. by varying the molar ratio of labeled Fab fragment to primary antibody.

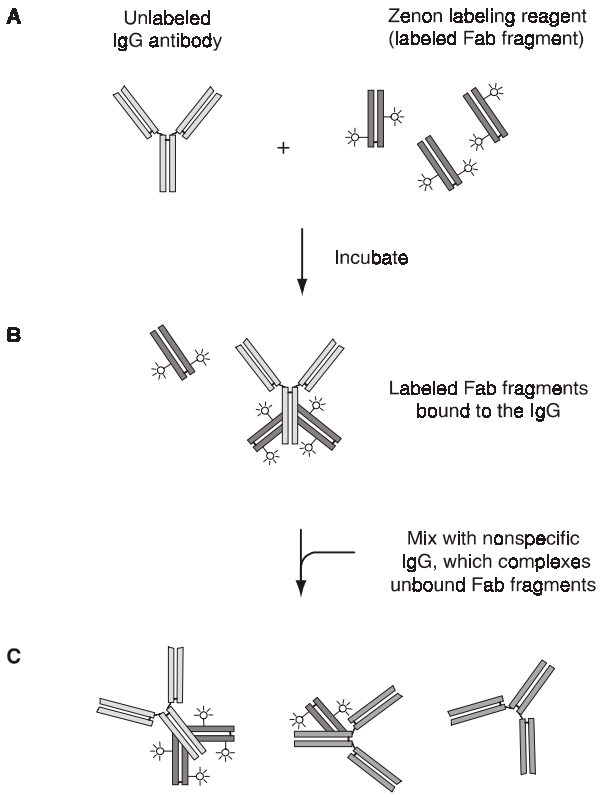

Figure 1. *The Zenon labeling scheme. An unlabeled IgG is incubated with the Zenon labeling reagent, which contains a fluorophore-labeled Fab fragment (A). The labeled Fab fragment binds to the Fc portion of the IgG antibody (B), and excess Fab fragment is neutralized by the addition of a nonspecific IgG (C). The addition of nonspecific IgG prevents cross-labeling of the Fab fragment in experiments where multiple primary antibodies of the same type are present. Note that the Fab fragment used for labeling need not be coupled to a fluorophore, but could instead be coupled to an enzyme or to biotin.*

Molecular Probes maintains an e-mail address (Zenon@probes.com) specifically dedicated to the Zenon labeling technology. For technical questions and/or comments about these products, please send an e-mail to the above address, or contact our Technical Assistance department.

Materials

The Zenon Rabbit IgG Labeling Kits contain sufficient reagents for either 50, 25 or 10 labelings, depending upon the kit (see *Contents*, below). One "labeling" is defined as the amount of Zenon labeling reagent required to label 1 µg of an intact, affinity-purified rabbit IgG antibody at a Fab:antibody molar ratio of 3:1 (note **A**).

Table 1. *Molecular Probes' Zenon Rabbit IgG Labeling Kits.*

Label	Abs/Em *	Catalog Number
Alexa Fluor dyes		
Alexa Fluor® 350	346/442	Z-25300
Alexa Fluor® 405	402/421	Z-25313
Alexa Fluor® 430	434/539	Z-25301
Alexa Fluor® 488	495/519	Z-25302
Alexa Fluor® 532	531/554	Z-25303
Alexa Fluor® 546	556/573	Z-25304
Alexa Fluor® 555	555/565	Z-25305
Alexa Fluor® 568	578/603	Z-25306
Alexa Fluor® 594	590/617	Z-25307
Alexa Fluor® 647	650/668	Z-25308
Alexa Fluor® 660	663/690	Z-25309
Alexa Fluor® 680	679/702	Z-25310
Alexa Fluor® 700	696/719	Z-25311
Alexa Fluor® 750	752/779	Z-25312
Conventional dyes and biotin		
Marina Blue®	365/460	Z-25340
Pacific Blue™	410/455	Z-25341
Fluorescein	494/518	Z-25342
Oregon Green® 488	496/524	Z-25343
Texas Red®-X	595/615	Z-25345
biotin-XX	NA	Z-25352
R-phycoerythrin, allophycocyanin		
R-phycoerythrin	496, 546, 565 †/578	Z-25355
Allophycocyanin	650/660	Z-25351
Enzymes		
Horseradish peroxidase	NA	Z-25354
Alkaline phosphatase	NA	Z-25350
Tricolor Labeling Kits		
Alexa Fluor® 488, 555, 647 (Kit #1)	see above	Z-25360
Alexa Fluor® 350, 488, 594 (Kit #2)	see above	Z-25370

* Approximate absorption and emission maxima, in nm† Multiple absorption peaks.
NA = not applicable.

Contents

Zenon Rabbit IgG Labeling Kits for labeling with a low molecular weight dye or biotin:

- **Zenon rabbit IgG labeling reagent** (Component A), 250 µL
- **Zenon blocking reagent (rabbit IgG)** (Component B), 250 µL

Sufficient reagents are provided for 50 labelings.

Zenon Rabbit IgG Labeling Kits for labeling with R-phycoerythrin, allophycocyanin or an enzyme:

- **Zenon rabbit IgG labeling reagent** (Component A), 125 µL
- **Zenon blocking reagent (rabbit IgG)** (Component B), 125 µL

Sufficient reagents are provided for 25 labelings.

Zenon Tricolor Rabbit IgG Labeling Kit #1:

- **Zenon Alexa Fluor 488 rabbit IgG labeling reagent** (Component A), 50 µL
- **Zenon Alexa Fluor 555 rabbit IgG labeling reagent** (Component B), 50 µL
- **Zenon Alexa Fluor 647 rabbit IgG labeling reagent** (Component C), 50 µL
- **Zenon blocking reagent (rabbit IgG)** (Component D), 150 µL

Sufficient reagents are provided for 10 labelings with each of the three included labeling reagents.

Zenon Tricolor Rabbit IgG Labeling Kit #2:

- **Zenon Alexa Fluor 350 rabbit IgG labeling reagent** (Component A), 50 µL
- **Zenon Alexa Fluor 488 rabbit IgG labeling reagent** (Component B), 50 µL
- **Zenon Alexa Fluor 594 rabbit IgG labeling reagent** (Component C), 50 µL
- **Zenon blocking reagent (rabbit IgG)** (Component D), 150 µL

Sufficient reagents are provided for 10 labelings with each of the three included labeling reagents.

Zenon rabbit IgG labeling reagents are labeled goat Fab fragments specific for the Fc portion of rabbit IgG antibodies. Zenon rabbit IgG labeling reagents conjugated to a low molecular weight dye or biotin are supplied at 200 µg Fab fragment/mL in 0.1 M sodium phosphate, 0.1 M NaCl, pH 7.5, containing 5 mM sodium azide. Zenon rabbit IgG labeling reagents conjugated to R-phycoerythrin, allophycocyanin or alkaline phosphatase are supplied at 200 µg Fab fragment/mL in 0.1 M sodium phosphate, 0.1 M NaCl, pH 6.8, containing 5 mM sodium azide. Zenon rabbit IgG labeling reagents conjugated to horseradish peroxidase are supplied at 200 µg Fab fragment/mL in 0.1 M sodium phosphate, 0.1 M NaCl, pH 6.8, containing 0.02% thimerosal. The Zenon blocking reagent (rabbit IgG) is supplied at 5 mg/mL in phosphate-buffered saline, pH 7.2, containing 5 mM sodium azide.

Storage and Handling

Upon receipt, store all Zenon Rabbit IgG Labeling Kits at 2–6°C, and protect fluorescent components from light. For long-term storage, Zenon rabbit IgG labeling reagents that contain a low molecular weight fluorophores or biotin and the Zenon blocking reagent may be divided into single-use aliquots and frozen at ≤–20°C. DO NOT FREEZE Zenon rabbit IgG labeling reagents containing R-phycoerythrin, allophycocyanin, horseradish peroxidase or alkaline phosphatase.

Zenon Complex Formation

The following protocol is for labeling 1 µg of antibody with a Zenon rabbit IgG labeling reagent to obtain a 3:1 molar ratio of Fab to antibody target (note **A**). This molar ratio is a suggested starting point and represents the minimum ratio for adequate labeling in most applications; individual experiments may require higher molar ratios in order to obtain satisfactory signal (note **B**). For larger or smaller quantities of antibody, the amounts of the

reagents specified in this protocol can be scaled accordingly. The Zenon rabbit IgG labeling reaction does not require the removal of bovine serum albumin (BSA) or other stabilizing proteins that may be present in antibody preparations. Antibodies contained within serum may also be directly labeled and do not require purification of the antibody either prior to or after labeling.

1.1 Prepare 1 µg of antibody in a suitable buffer, such as phosphate-buffered saline (PBS). The volume is not crucial, provided it is ≤20 µL. If using an antibody where the concentration is not specified, refer to note **C**. If using antibodies that have not been affinity purified, refer to note **D**.

1.2 Add 5 µL of the Zenon rabbit IgG labeling reagent (Component A) to the antibody solution. (If using a Zenon Tricolor Kit, use the desired labeling reagent from Component A, B or C.)

1.3 Incubate the mixture for 5 minutes at room temperature.

1.4 Add 5 µL of the Zenon blocking reagent (Component B, or Component D if using a Zenon Tricolor Kit) to the reaction mixture. If the application uses only a single labeled antibody refer to note **E**.

1.5 Incubate the solution for 5 minutes at room temperature.

The complexes are now ready and should be applied to samples within approximately 30 minutes. If longer storage is required, refer to note **F**.

General Application Tips

Conjugate utility. Rabbit IgG antibodies labeled using Zenon technology are expected to be suitable in all applications where a directly labeled antibody may be used. Multiple rabbit IgG antibodies labeled with Zenon reagents may be used in one experiment either sequentially or as a single staining mixture.

Conjugate stability. Once the conjugates have been formed and excess Fab taken up by the blocking reagent, the labeled complexes should be used within approximately 30 minutes.

Working concentration. For applications where a directly labeled primary antibody is typically used, the antibody labeled using Zenon technology can generally be used at a similar or higher concentration (1.5–3-fold).

Low or no signal. If suitable controls verify that the primary antibody is binding to the expected target but no signal is observed with the antibody labeled using Zenon technology, the signal may be increased by adding more of the Zenon labeling reagent to increase the Fab:antibody molar ratio and/or by increasing the final concentration of the primary antibody. While a molar ratio of 3:1 is suitable in many cases, the molar ratio may be increased up to 6:1. Further increases in the molar ratio will not result in a significant increase in the signal strength.

Label loss or transfer. Because the labeled Fab fragment is not covalently coupled to the primary antibody, some loss of the labeled Fab fragments may occur over time. In applications with multiple rabbit IgG primary antibodies, the Fab fragments may transfer slowly from one primary antibody to another. Samples should be subjected to an additional post-staining fixation step with formaldehyde in order to reduce Fab dissociation (see *Staining Applications*, below).

Staining Applications

The following protocols were developed at Molecular Probes for the staining of cells and tissues using primary antibodies labeled with Zenon rabbit IgG labeling reagents. The protocols may not be applicable to all experimental situations, and users are encouraged to adapt these protocols to their needs.

Immunocytochemisty

This protocol has been successfully used to stain a number of cell lines, including bovine pulmonary artery endothelial (BPAE), Muntjac and Madin-Darby canine kidney (MDCK) cells. For primary antibodies against abundant targets, forming Zenon labeling complexes at a molar ratio of 3:1, Zenon labeling reagent (Fab) to antibody, is suitable; for less abundant targets, a molar ratio of 6:1 is recommended.

2.1 Culture cells in suitable growth medium. Adherent cell lines intended for observation by microscopy may be grown directly on slides or coverslips; however, do not allow the slides or coverslips to dry out at any point during the staining protocol.

2.2 Fix the cell sample in 4% formaldehyde solution in PBS for 15 minutes at room temperature. Alternately, samples may incubated for 15 minutes at 37°C under 5% CO_2. This latter fixation method has been observed to better preserve cytoskeletal morphology.

2.3 Wash the cell sample one or more times with PBS.

2.4 Permeabilize the cells by incubating the sample in PBS containing 0.1% Triton® X-100 for 5 minutes at room temperature. Remove the detergent solution.

2.5 Block nonspecific binding sites in the cell sample for 30 minutes in PBS containing 10% normal goat serum (NGS).

2.6 Dilute the Zenon labeling complex (prepared according to *Zenon Complex Formation*, above) to the desired working concentration in PBS containing 10% NGS, and apply a sufficient volume to immerse the cell sample. If staining with more than one Zenon labeling complex, all complexes can be combined into a single staining solution; sequential labeling is not necessary. In systems where the concentration of primary antibody has already been optimized for use with a secondary detection reagent, use the primary antibody at a concentration 1.5–3-fold higher with the Zenon staining method. Otherwise, the appropriate working concentration will need to be determined empirically.

2.7 Incubate the cell sample for 30–60 minutes at room temperature. Zenon labeling reagents with fluorophores should be protected from light during the incubation. When staining is complete, wash the cell sample one or more times with PBS.

2.8 Perform a second fixation of the cell sample in 4% formaldehyde solution in PBS for 15 minutes at room temperature. When the fixation is complete, wash the cell sample one or more times with PBS. Without this second fixation step, the Zenon Fab

fragment, because it is not covalently coupled to the primary antibody, can dissociate with time, and can even transfer to another primary antibody in multicolor applications. This step is optional for experiments using only a single primary antibody for labeling purposes, but signal intensity is generally superior with the additional fixation.

2.9 If desired, counterstain the cell sample with a nucleic acid stain (e.g., Hoechst 33342, DAPI or SYTOX® Green stains) or with other labeling reagents (e.g., fluorophore-labeled phalloidin), and wash with PBS after any additional staining procedure.

2.10 If necessary, deposit the cells on a slide or coverslip, or place in a flow tube. For a sample to be viewed by microscopy, mount in an antifade mounting medium (e.g., use the ProLong® Antifade Kit; P-7481). Analyze or view the sample by the desired method.

Immunohistochemistry

This protocol is designed for 10–12 micron frozen sections of tissues fixed in 4% formaldehyde via trans-cardial perfusion. *Do not use glutaraldehyde-containing fixatives.* The use of glutaraldehyde increases sample autofluorescence and results in excessive cross-linking of proteins, which can impede antibody access and can denature antigens. Where possible, use thinner sections to promote thorough and more rapid antibody penetration into the tissue. Zenon labeling complexes have not been tested or optimized for sections embedded in paraffin. Note that certain low-abundance antigens may not be detected as easily using Zenon labeling technology as they would be using conventional secondary detection methods, and the Zenon method is not recommended for very low-abundance target molecules in tissue samples.

In parallel to the labeling of an experimental sample, a negative-control sample should be processed in an identical protocol, but with the omission of the primary antibody, in order to assess nonspecific labeling. A positive control sample labeled by conventional secondary detection methods can be included during pilot studies to confirm the specificity of the staining pattern observed using the Zenon labeling method.

3.1 Allow the slide containing the frozen tissue section to thaw at room temperature (usually 15–30 minutes). Draw a rectangle around the section with a PAP pen, if desired.

3.2 Rehydrate the section in PBS for 15 minutes at room temperature. Do not allow the section to dry at any point during the remaining steps of this staining protocol.

3.3 Permeabilize the section in PBS containing 0.2% Triton X-100 (PBT) for 20 minutes at room temperature.

3.4 Block nonspecific binding sites with PBT containing 0.2% BSA and 5% heat-inactivated normal goat serum for 30 minutes at room temperature. Alternatively, 1% BSA can be used in place of the serum. Remove the blocking buffer once the incubation is complete.

3.5 Dilute the Zenon rabbit IgG labeling complex (prepared according to the *Zenon Complex Formation* above) in PBT to the desired working concentration. In a horizontal staining dish, apply 100–250 µL of the working solution to cover the section. For initial experiments, test a range of different primary antibody concentrations and different molar ratios of Zenon labeling reagent (Fab) to antibody. A molar ratio of 6:1 is the recommended starting point for tissue staining, and, in general, Zenon labeling methods require a higher concentration of primary antibody than would be used in a standard secondary detection scheme. It is important to include detergent in the staining buffer in order to promote antibody penetration. Buffer PBT, as described above, contains 0.2% Triton X-100; however, the detergent choice and concentration (generally 0.1–0.5%) may need to be optimized to strike a balance between tissue permeabilization and the possibility of the antigen being sensitive to detergent extraction.

3.6 Incubate the section with the staining solution in a humidified chamber for 1–2 hours at room temperature. Zenon labeling reagents with fluorophores should be protected from light during the incubation. If staining with more than one Zenon labeling complex, all complexes can be combined into a single staining solution; sequential labeling is not necessary. *Do not use longer incubation times.* With longer incubation times, the Zenon Fab fragment can dissociate from the primary antibody, resulting in poor signal-to-noise ratios and possible cross-labeling of primary antibodies in multicolor staining applications.

3.7 Remove the staining solution and wash the section in PBT for 10–15 minutes at room temperature. Repeat the wash an additional two times. The wash steps should be performed in an upright Coplin staining jar.

3.8 Wash the stained tissue section for 5 minutes in PBS at room temperature. Repeat.

3.9 Perform a second fixation of the tissue section in 4% formaldehyde solution in PBS for 15 minutes at room temperature. When the fixation is complete, wash the section one or more times with PBS. Without this second fixation step, the Zenon Fab fragment, because it is not covalently coupled to the primary antibody, can dissociate with time, and can even transfer to another primary antibody in multicolor applications.

3.10 If desired, counterstain the tissue sample with a nucleic acid stain (e.g., Hoechst 33342, DAPI or SYTOX Green stains) or with other labeling reagents (e.g., fluorophore-labeled phalloidin), and wash with PBS after any additional staining procedure.

3.11 Mount the section in an antifade mounting medium (e.g., use the ProLong® Antifade Kit; P-7481) and observe the fluorescence using appropriate filters.

Flow Cytometry

The following protocol was developed for the staining of peripheral blood mononuclear cells and can be readily adapted to other cell types or to whole blood samples. For primary antibodies against abundant targets, forming Zenon labeling complexes at a molar ratio of 3:1, Zenon labeling reagent (Fab) to antibody, is suitable; for less abundant targets the molar ratio should be increased. Note that an Fc blocking step is not required when using antibodies labeled with Zenon technology.

4.1 Prepare the cell suspension or blood sample as preferred.

4.2 Add 100 µL of cultured cells (at 1×10^6 cells/mL) or 100 µL of a whole blood sample to a flow cytometry tube.

4.3 (Optional) Fix the cell sample in 4% formaldehyde solution in PBS for 15 minutes at room temperature. Wash the cell sample with PBS, centrifuge the sample to pellet the cells and decant the supernatant. Resuspend the cells in the residual buffer. **NOTE:** This and the following step are required only when detecting internal cell markers. If using antibodies against cell surface and internal markers in the same experiment, perform the staining of the cell surface markers first, then follow this step and steps 4.4–4.7 to stain the internal markers.

4.4 (Optional) Permeabilize the cell sample by incubating the sample in PBS containing 0.1% Triton X-100 for 5 minutes at room temperature. Wash the cell sample with PBS, centrifuge the sample to pellet the cells and decant the supernatant. Resuspend the cells in the residual buffer.

4.5 Label 1 µg of the primary antibody according to *Zenon Complex Formation,* above.

4.6 Add the entire Zenon labeling mixture (prepared in step 4.5) to the sample tube. **NOTE:** If using whole blood samples, the lysis of red blood cells can be performed either before or after cell staining (steps 4.6–4.7).

4.7 Incubate the sample for 30 minutes at room temperature. Zenon labeling complexes with fluorophores should be protected from light during the incubation. When complete, wash the cells once with PBS, centrifuge the sample to pellet the cells, and decant the supernatant. Resuspend the cells in the residual buffer. A post-staining fixation step, required for imaging applications, is not required for flow cytometry applications.

4.8 Analyze the sample using appropriate instrument parameters.

Product Notes

[A] The Fab:antibody ratio is the important factor when determining the amount of Zenon rabbit labeling reagent to use in the labeling protocol. In all Zenon Rabbit IgG Labeling Kits, the Zenon labeling reagent is provided at a concentration of 200 µg/mL *based upon the mass of the Fab fragment.* A Fab fragment has a molecular weight of ~50 kDa, compared to ~150 kDa for an intact IgG; thus, 5 µL of any Zenon labeling reagent mixed with 1 µg of rabbit IgG antibody produces a Fab:antibody molar ratio of 3:1.

[B] When adjusting either the amount of antibody to be labeled or the Fab:antibody molar ratio, it is important to always use equal volumes of Zenon labeling reagent and Zenon blocking reagent. For example, if the amount of Zenon labeling reagent used for a reaction is increased to 10 µL, then the amount of Zenon blocking reagent should also be increased to 10 µL. Note that adding 10 µL of the Zenon labeling reagent for each microgram of antibody (yielding a molar ratio of 6:1) will often increase the measured signal intensities by approximately 50%. Further increases in the molar ratio tend to yield smaller increases in intensity.

[C] If the concentration of rabbit IgG is not specified, contact the supplier and obtain at least an approximate IgG content. If a concentration cannot be obtained from the supplier, a titration with the Zenon labeling reagent will need to be performed to obtain the optimum labeling conditions.

[D] Antibodies from a supplier are generally provided as an affinity purified fraction, as an IgG fraction or in serum. Primary antibodies that have not been affinity purified may still be labeled using the Zenon rabbit IgG labeling reagents and do not require the removal of nonspecific IgGs or serum proteins. The appropriate amount of the Zenon labeling reagent to add in step 1.2 should be determined by using the total IgG mass in the sample to be labeled; thus, 5 µL of the Zenon rabbit IgG labeling reagent should be used for each µg of IgG. Nonspecific IgGs will be labeled in addition to the specific IgG; however, the labeled nonspecific IgGs should not stain the sample appreciably and will be washed away during the staining procedure.

[E] If rabbit cells or tissues are not being used, and if the application requires only a single labeled antibody, steps 1.4 and 1.5 of the labeling protocol (addition of the blocking reagent) can be omitted. The level of uncomplexed Zenon labeling reagent is sufficiently low that it should not cause high background levels.

[F] If long-term storage of the labeling complexes is desired, stop the labeling procedure at step 1.3 of the protocol. At this stage the complexes may be stored at 4°C for several weeks with the addition of 2 mM sodium azide as a preservative. When ready to use the conjugate, complete steps 1.4 and 1.5 of the labeling protocol before applying the conjugate to the experimental sample.

Product List *Current prices may be obtained from our Web site or from our Customer Service Department.*

Cat #	Product Name	Unit Size
Z-25300	Zenon™ Alexa Fluor® 350 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25313	Zenon™ Alexa Fluor® 405 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25301	Zenon™ Alexa Fluor® 430 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25302	Zenon™ Alexa Fluor® 488 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25303	Zenon™ Alexa Fluor® 532 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25304	Zenon™ Alexa Fluor® 546 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25305	Zenon™ Alexa Fluor® 555 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25306	Zenon™ Alexa Fluor® 568 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25307	Zenon™ Alexa Fluor® 594 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25308	Zenon™ Alexa Fluor® 647 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25309	Zenon™ Alexa Fluor® 660 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25310	Zenon™ Alexa Fluor® 680 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25311	Zenon™ Alexa Fluor® 700 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25312	Zenon™ Alexa Fluor® 750 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25350	Zenon™ Alkaline Phosphatase Rabbit IgG Labeling Kit *25 labelings*	1 kit
Z-25351	Zenon™ Allophycocyanin Rabbit IgG Labeling Kit *25 labelings*	1 kit
Z-25352	Zenon™ Biotin-XX Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25342	Zenon™ Fluorescein Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25354	Zenon™ Horseradish Peroxidase Rabbit IgG Labeling Kit *25 labelings*	1 kit
Z-25340	Zenon™ Marina Blue® Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25343	Zenon™ Oregon Green® 488 Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25341	Zenon™ Pacific Blue™ Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25355	Zenon™ R-Phycoerythrin Rabbit IgG Labeling Kit *25 labelings*	1 kit
Z-25345	Zenon™ Texas Red®-X Rabbit IgG Labeling Kit *50 labelings*	1 kit
Z-25360	Zenon™ Tricolor Rabbit IgG Labeling Kit #1 *for green, orange and deep red fluorescence imaging* *3 x 10 labelings*	1 kit
Z-25370	Zenon™ Tricolor Rabbit IgG Labeling Kit #2 *for blue, green and red fluorescence imaging* *3 x 10 labelings*	1 kit

Contact Information

Further information on Molecular Probes' products, including product bibliographies, is available from your local distributor or directly from Molecular Probes. Customers in Europe, Africa and the Middle East should contact our office in Leiden, the Netherlands. All others should contact our Technical Assistance Department in Eugene, Oregon.

Please visit our Web site — **www.probes.com** — for the most up-to-date information

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