

## Product Information

# Mix-n-Stain™ CF®568 Antibody Labeling Kits

Storage Temperature –20 °C

**MX568S20, MX568S50, and MX568S100**

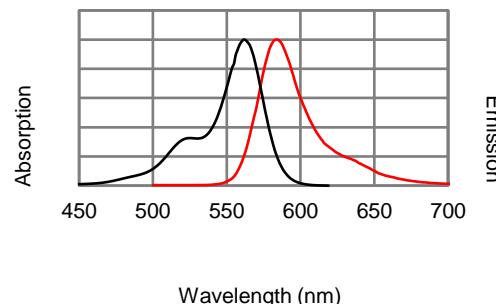
## Product Description

The kits contain everything needed to rapidly label an antibody. Select the labeling kit suitable for the amount of antibody to be labeled. The labeling procedure is simply mixing of the antibody with the optimally formulated dye in the reaction buffer provided, followed by a brief incubation. The resulting solution is ready for staining without further purification. The kit is suitable for labeling commercially available primary antibodies, either directly or after a simple antibody clean-up step. After labeling, the dye is covalently linked to the antibody with a degree of labeling of 4–6 dye molecules per antibody molecule. Multiple antibodies labeled with different dyes using Mix-n-Stain™ kits can be used for multicolor fluorescence staining without transfer of dyes between antibodies.

CF®568 is a red fluorescent dye with an excitation spectrum optimally matching the 568 nm line of the Ar-Kr mixed-gas laser. Antibody conjugates of CF®568 are much brighter than those of Alexa Fluor® 568. In addition, the photostability of CF®568 is superior to that of Alexa Fluor® 568, making CF®568 a much better choice for demanding applications such as confocal microscopy and single molecule imaging.

**Note:** Labeled secondary antibodies will bind to primary antibodies labeled using Mix-n-Stain™ kits; therefore, if multiple primary antibodies from the same species are to be used for multicolor immunofluorescence staining, a secondary antibody cannot be used to distinguish an unlabeled primary antibody from a Mix-n-Stain™ labeled primary antibody. Mix-n-Stain™ labeling kits are offered for secondary detection using CF® dye-labeled streptavidin or CF® dye-labeled monoclonal mouse anti-biotin.

## Absorption and emission spectra of CF®568 conjugated to goat anti-mouse IgG in PBS.



## CF®568 dye properties

- Abs/Em Maxima: 562/583 nm
- Flow cytometry laser line: 488 nm, 532 nm, or 561 nm
- Microscopy laser line: 568 nm
- Direct replacement for: Alexa Fluor® 568 and Rhodamine Red

## Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

## Storage/Stability

Store the kit at –20 °C.

## Procedures

### Antibody Preparation

Check the compatibility of the antibody formulation with the compatibility table (see next page). An antibody solution free of stabilizers produces better labeling results. However, low levels of stabilizers can be tolerated in the standard protocol.

Non-protein stabilizers can be removed using the ultrafiltration vial provided.

## Mix-n-Stain™ Compatibility with Common Antibody Storage Components

Component	Compatibility
Sodium Azide	Compatible
Glycerol	≤ 10%: proceed to Standard Mix-n-Stain™ Labeling > 10%: proceed to Ultrafiltration
Tris	≤ 20 mM: proceed to Standard Mix-n-Stain™ Labeling > 20 mM: proceed to Ultrafiltration
Glycine	Proceed to Ultrafiltration
BSA or gelatin	≤ 4 x IgG by weight: proceed to Standard Mix-n-Stain™ Labeling > 4 x IgG by weight: proceed to Modified Mix-n-Stain™ Labeling
Ascites fluid	Proceed to Modified Mix-n-Stain™ Labeling
Serum	Not compatible; purify IgG
Hybridoma supernatant	Not compatible; purify IgG

Antibodies can be labeled in the presence of excess protein stabilizers or in ascites fluid by selecting a kit size that matches the amount of total protein in the labeling reaction (IgG plus stabilizer or amount of protein in ascites fluid) and using the modified Mix-n-Stain™ labeling procedure. The modified Mix-n-Stain™ protocol can be used to label antibody amounts that fall below the range of the kit by adding stabilizer protein to the antibody to bring the total protein amount within the kit range (see Mix-n-Stain™ Compatibility table).

One may experience higher background after staining if the antibody is labeled in the presence of BSA or gelatin. Background staining can be reduced by using blocking and wash solutions containing at least 1% BSA or gelatin, respectively. Alternatively, protein stabilizers (BSA or gelatin) can be removed using an antibody clean-up kit.

For optimal labeling, use the antibody at a concentration of 0.5–1 mg/mL. If necessary, adjust the antibody concentration with 1 x PBS. The ultrafiltration protocol (below) can be performed to concentrate more dilute solutions of antibody.

### Ultrafiltration

Before beginning, it is important to use Mix-n-Stain™ Compatibility table to determine whether the antibody requires ultrafiltration before labeling. If ultrafiltration is not required, proceed to the appropriate labeling procedure as determined by Mix-n-Stain™ compatibility table.

The ultrafiltration column membrane has a molecular mass cut-off of 10,000 Da. Therefore, molecules smaller than 10 kDa will flow through the membrane and molecules larger than 10 kDa, including IgG antibodies, will be retained on the upper surface of the membrane. Take care not to touch the membrane with pipette tips, which could tear or puncture the membrane, resulting in loss of antibody.

### Ultrafiltration vial capacities

- Maximum sample volume: 500 µL
- Final concentrate volume: 15 µL
- Filtrate receiver volume: 500 µL
- Hold-up volume (membrane/support): < 5 µL

1. Add an appropriate amount of antibody to the ultrafiltration vial being careful not to touch the membrane. Spin the solution at 14,000 x g in a microcentrifuge for a few minutes until the liquid is removed. Discard the liquid in the collection vessel.
2. Rinse the original antibody vial with an equal volume of 1 x PBS and add to the ultrafiltration vial. Spin the vial at 14,000 x g until the liquid is removed. Resuspend the antibody to a concentration of 0.5–1 mg/mL in an appropriate volume of 1 x PBS and transfer to a clean vial.
3. If using the modified Mix-n-Stain™ labeling procedure (Mix-n-Stain™ Compatibility table), save the ultrafiltration vial to concentrate the antibody after labeling.

## Standard Mix-n-Stain™ Labeling

Before beginning, use Mix-n-Stain™ Compatibility table to select the appropriate labeling protocol for the antibody.

1. Warm up the Mix-n-Stain™ Reaction Buffer vial and the Mix-n-Stain™ Storage Buffer vial to room temperature before use. Centrifuge the vials briefly to collect the solutions at the bottom of the vials.
2. Dilute the 10 x Mix-n-Stain™ Reaction Buffer to 1x with the antibody solution. Mix by pipetting up and down a few times.
3. Transfer the entire solution from step 2 to the vial containing the CF® dye (no need to weigh the dye). Vortex the vial for a few seconds.
4. Incubate the vial in the dark for 15 minutes. The solution is now ready to use. The concentration of the CF® dye-labeled antibody conjugate is approximately the amount of the starting antibody divided by the total volume (for example, ~100% labeling yield).
5. Dilute the labeled antibody solution with the provided Storage Buffer. Simply transfer the entire labeled antibody solution into the Storage Buffer and store at 2–8 °C. Recalculate the concentration of the antibody solution.

**Note:** Storage buffer contains 2 mM sodium azide.

Alternatively, the labeled antibody solution can be aliquoted and stored at –20 °C. Without repeated freeze-thaws, the labeled antibody solution remains active for at least 6 months.

## Modified Mix-n-Stain™ Labeling

Before beginning, use Mix-n-Stain™ Compatibility table to select the appropriate labeling protocol for the antibody.

1. Use the antibody solution at a concentration of 0.5–1 mg/mL total protein (IgG plus stabilizer protein) for optimal labeling, using 1 x PBS to dilute the solution if necessary. Make sure the amount of total protein (μg) in the labeling reaction falls within the range of the kit. To label an amount of IgG that falls below the lower limit of the kit, add BSA to bring to the total protein concentration (IgG + BSA) within the range of the kit and proceed with labeling based on total protein concentration.

2. Warm up the Mix-n-Stain™ Reaction Buffer vial and the Mix-n-Stain™ Storage Buffer vial to room temperature before use. Centrifuge the vials briefly to collect the solutions at the bottom of the vials.
3. Dilute the 10 x Mix-n-Stain™ reaction Buffer to 1 x with the antibody solution. Mix by pipetting up and down a few times.
4. Transfer the entire solution from step 3 to the vial containing the CF® dye (no need to weigh the dye). Vortex the vial for a few seconds.
5. Incubate the vial in the dark for 15 minutes. **Optional:** One can transfer the entire labeling reaction to the tube of antibody storage buffer provided. However, this may result in a highly dilute IgG solution, which may not be practical for subsequent use. To transfer the antibody to storage buffer without additional dilution, follow steps 6–8.

**Note:** Storage buffer contains 2 mM sodium azide.

6. Transfer the labeling reaction to the membrane of the ultrafiltration vial provided (or saved from Ultrafiltration. Centrifuge the vial at 14,000 x g until all of the liquid has filtered into the receiving vial as described in Ultrafiltration.
7. Resuspend the labeled antibody in antibody storage buffer at the desired final concentration of IgG. Carefully pipette the storage buffer up and down over the upper surface of the membrane to recover and resuspend the antibody.

**Note:** Storage buffer contains 2 mM sodium azide.

8. Transfer the recovered antibody solution to a fresh microcentrifuge tube. The antibody is now ready to use for staining. The labeled antibody is stable for at least 6 months when stored at 2–8 °C, protected from light. Alternatively, the antibody can be stored in single use aliquots at –20 °C for longer term storage. Without repeated freeze-thaws, the labeled antibody solution remains active for at least 6 months.

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