

# Coomassie dye–based protein gel stains

Convenient, ready-to-use reagents with no permanent chemical modification

The most common methods of in-gel protein detection use stains with Coomassie dye. These stains use either the G-250 (colloidal) or R-250 form of the dye. Colloidal Coomassie stain can be formulated to effectively stain proteins within one hour and require only water (no methanol or acetic acid) for destaining.

## Key features:

- **Simple**—Coomassie dye–based formulations are easy to formulate and are widely used
- **Easy to use**—simply soak the gel in staining solution, and destain to observe protein bands
- **Economical**—Coomassie dye–based formulations are cost-effective
- **Flexible**—useful for qualitative visualization, quantitative densitometry, and gel excision and analysis by mass spectrometry



Our Coomassie stains provide sensitive protein detection along with simplified protocols. Staining protocols and example data are shown for SimplyBlue SafeStain (Figures 32, 35, 36), Imperial Protein Stain (Figures 33, 37), and PageBlue Protein Staining Solution (Figure 34).

## Coomassie dye–based protein gel stains.

	SimplyBlue SafeStain	Imperial Protein Stain	PageBlue Protein Staining Solution
Type	G-250	R-250	G-250
Limit of detection	>7 ng	3 ng	5 ng
Time to stain*	12 min	12 min	30 min
Compatible with:			
PVDF membranes	Yes	Yes	Yes
Nitrocellulose membranes	No	No	No
Reusable	No	No	Yes (up to 3 times)
Mass spectrometry compatible	Yes	Yes	Yes
Color	Purple	Purple	Blue-green
Feature	Free of methanol and acetic acid	Photographs better than Coomassie G-250 dye	Free of methanol and acetic acid
Advantages	Rapid, sensitive, completely nonhazardous staining (does not require methanol or acetic acid fixatives or destains)	Fast, ultrasensitive protein detection	Cost-effective option for fast, sensitive staining

\* Approximate staining time using microwave oven

Learn more at [thermofisher.com/coomassiestains](https://thermofisher.com/coomassiestains)

# Protocols

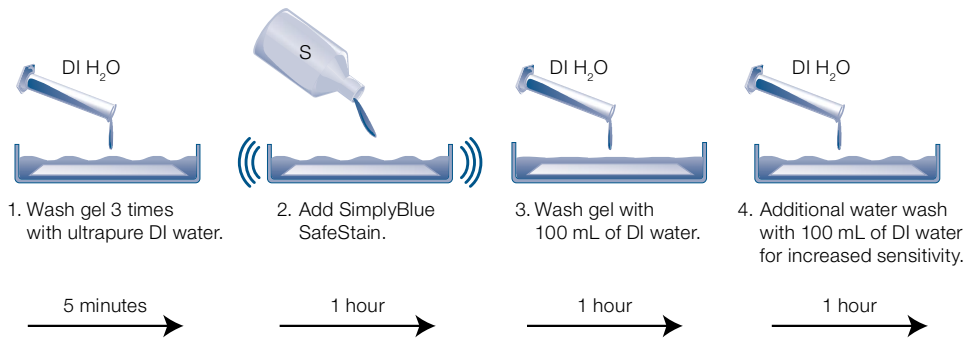


Figure 32. SimplyBlue SafeStain protocol.

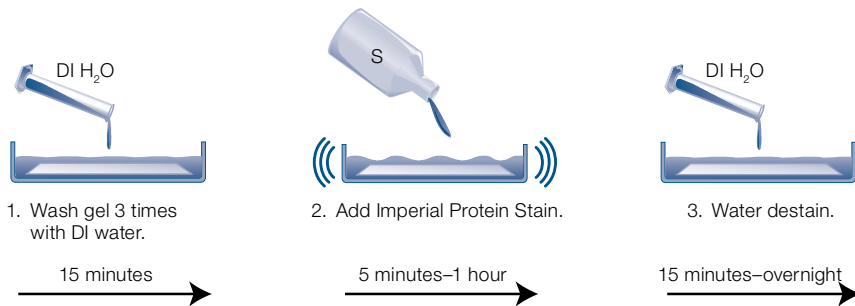


Figure 33. Imperial Protein Stain protocol.

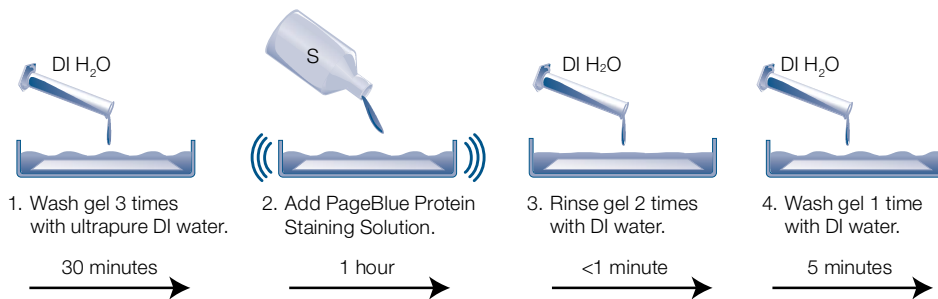


Figure 34. PageBlue Protein Staining Solution protocol.



Product	Quantity	Cat. No.
<b>Unstained standards</b>		
HiMark Unstained Protein Standard	250 µL	LC5688
PageRuler Unstained Low Range Protein Ladder	2 x 250 µL	26632
PageRuler Unstained High Range Protein Ladder	2 x 250 µL	26637
PageRuler Unstained Protein Ladder	2 x 250 µL	26614
NativeMark Unstained Protein Standard	5 x 50 µL	LC0725
<b>Prestained standards</b>		
PageRuler Prestained Protein Ladder, 10–180 kDa	2 x 250 µL	26616
PageRuler Prestained Protein Ladder, 10–180 kDa	10 x 250 µL	26617
PageRuler Plus Prestained Protein Ladder, 10–250 kDa	2 x 250 µL	26619
PageRuler Plus Prestained Protein Ladder, 10–250 kDa	10 x 250 µL	26620
Spectra Multicolor Broad Range Protein Ladder	2 x 250 µL	26634
Spectra Multicolor Broad Range Protein Ladder	10 x 250 µL	26623
HiMark Prestained Protein Standard	250 µL	LC5699
Spectra Multicolor Low Range Protein Ladder	250 µL	26628
Spectra Multicolor High Range Protein Ladder	2 x 250 µL	26625
SeeBlue Prestained Protein Standard	500 µL	LC5625
SeeBlue Plus2 Prestained Protein Standard	500 µL	LC5925
<b>Western standards</b>		
iBright Prestained Protein Ladder	2 x 250 mL	LC5615
PageRuler Prestained NIR Protein Ladder	2 x 250 µL	26635
MagicMark XP Western Protein Standard	250 µL	LC5602
MagicMark XP Western Protein Standard	50 µL	LC5603
<b>Specialty standards</b>		
BenchMark Fluorescent Protein Standard	125 µL	LC5928
BenchMark His-Tagged Protein Standard	125 µL	LC5606
IEF Marker 3–10	500 µL	3921201
CandyCane Glycoprotein Molecular Weight Standards	400 µL	C21852
PeppermintStick Phosphoprotein Molecular Weight Standards	400 µL	P33350

Product	Quantity	Cat. No.
<b>Electrophoresis chamber systems and power supplies</b>		
Mini Gel Tank	1 unit	A25977
XCell SureLock Mini-Cell	1 unit	EI0001
SureLock Tandem Midi Gel Tank	1 each	STM1001
XCell4 SureLock Midi-Cell	1 each	WR0100
PowerEase Touch 350W Power Supply (115 VAC)	1 each	PS0350
PowerEase Touch 350W Power Supply (230 VAC)	1 each	PS0351
PowerEase Touch 120W Power Supply (115 VAC)	1 each	PS0120
PowerEase Touch 120W Power Supply (230 VAC)	1 each	PS0121

Product	Quantity	Cat. No.
<b>Coomassie stains</b>		
PageBlue Protein Staining Solution	1 L	24620
SimplyBlue SafeStain	1 L	LC6060
SimplyBlue SafeStain	3.5 L	LC6065
Imperial Protein Stain	1 L	24615
Imperial Protein Stain	3 x 1 L	24617
<b>Silver stains</b>		
Pierce Silver Stain Kit	1 L	24612
SilverXpress Silver Staining Kit	1 kit	LC6100
Pierce Silver Stain for Mass Spectrometry	1 L	24600
<b>Fluorescent and specialty stains</b>		
SYPRO Orange Protein Gel Stain	500 µL	S6650
SYPRO Orange Protein Gel Stain	10 x 50 µL	S6651
SYPRO Red Protein Gel Stain	500 µL	S6653
SYPRO Red Protein Gel Stain	10 x 50 µL	S6654
SYPRO Ruby Protein Gel Stain	1 L	S12000
SYPRO Ruby Protein Gel Stain	200 mL	S12001
SYPRO Ruby Protein Gel Stain	5 L	S21900
Pro-Q Emerald 488 Glycoprotein Gel and Blot Stain	1 kit	P21875
Pro-Q Diamond Phosphoprotein Gel Stain	1 L	P33300
Pro-Q Diamond Phosphoprotein Gel Stain	200 mL	P33301
Pro-Q Diamond Phosphoprotein Gel Stain	5 L	P33302
No-Stain Protein Labeling Reagent	10 reactions	A44717
No-Stain Protein Labeling Reagent	40 reactions	A44449