

Product Information

One-Step Blue™ Protein Gel Stain, 1X

Catalog Number: 21003-1L

Unit Size:

21003-1L: 1 liter

Storage and Handling

Store at room temperature. Product is stable for at least 6 months from date of receipt.

Spectral Properties

Abs: ~610 nm; Em: ~680 nm (broad)

Product Description

One-Step Blue™ is a ready-to-use protein gel staining solution. It produces fast (5-60 min) protein staining in a single step without fixation or washing. Proteins can be detected by visible blue staining, or by near-infrared fluorescence. In addition to rapid results and simple staining, One-Step Blue™ offers safer handling and disposal compared to Coomassie staining because it is entirely aqueous-based, without hazardous methanol or acetic acid.

One-Step Blue™ has comparable sensitivity as the widely used Coomassie Blue, with a lower limit of detection around 10-20 ng depending on the detection method used (Figure 1). Note that staining intensity varies between proteins. The staining is fully compatible with mass spectrometry and Edman-based sequencing.

Biotium also offers One-Step Lumitein™ (see related products), a rapid, easy-to-use, non-toxic red fluorescent protein gel stain for detection using a UV transilluminator or laser gel scanner.

Protocol

The following protocol is optimized for 1 mm thick, 8 cm X 8 cm SDS-PAGE mini-gels.

1. Staining: Mix One-Step Blue just before use by inverting the bottle several times. Place your unfixed gel in a clean container containing 25 mL of One-Step Blue per mini-gel. Bands may start to appear in a few minutes, depending on the amount of protein present. For best sensitivity, incubate the gel for 60 minutes with gentle rocking.

Note: Blue particulates may be seen in the solution before or after adding your gel. This is normal and will not negatively affect staining.

Note: The gel can be left in the staining solution overnight without over-staining.

Note: For larger gels, scale up the volume of staining solution accordingly using the mini-gel size as a reference.

Note: One-Step Blue can also be used to stain fixed gels. Fixation with 45% methanol/10% acetic acid for 1 hour before staining, followed by destaining in water can increase sensitivity.

2. Destaining (optional): Destaining is not required, but can be done to reduce background (Figure 2). Gels can be destained in water for one hour to overnight with rocking.
3. Imaging and Quantitation: The gel can be photographed in visible light, or imaged using a standard densitometry-based imager. One-Step Blue dye also emits near infrared fluorescence, allowing staining to be detected with a near-IR fluorescence gel scanner, such as the LI-COR® Odyssey® imaging system, in either the 700 nm or 800 nm channel (Figure 1).

Note: After staining, gels can be dried in cellophane according to standard protocols for Coomassie-stained gels.

Note: For downstream analysis such as sequencing or mass spectrometry, gel slices can be processed the same way as Coomassie-stained gels.

4. Disposal: One-Step Blue is a 100% aqueous solution uniquely formulated using chemicals that qualify as food ingredients that can be disposed down the drain. It does not contain methanol or other chemical classified as hazardous to the environment. However, the solution is acidic, so we recommend adding NaOH or KOH to adjust the pH to pH ~6.5-7 for drain disposal, or consult local regulations for drain waste disposal requirements.

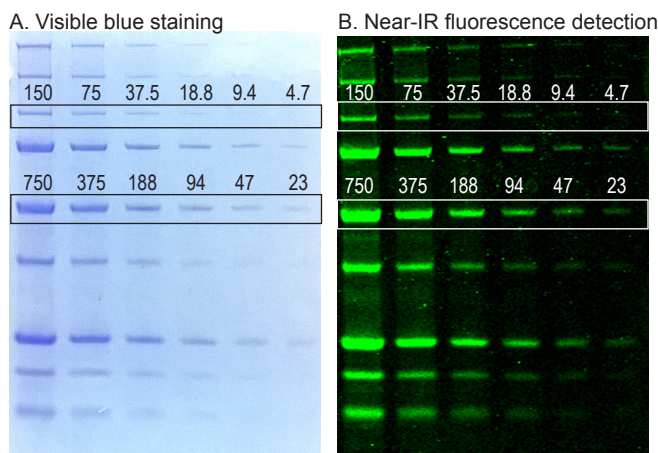


Figure 1. One-Step Blue-stained SDS-PAGE gel. Two-fold dilutions of Unstained Precision Plus Protein™ Standard (Bio-Rad) were separated on a 1 mm thick Novex® NuPage® 4-12% Bis-Tris MES mini-gel (Thermo Fisher). The gel was stained with One-Step Blue for 60 minutes. A) Visible blue staining. B) Near-infrared fluorescence in the 800 channel of a LI-COR® Odyssey®. Labels indicate approximate amount of protein (ng) in the boxed bands beneath.

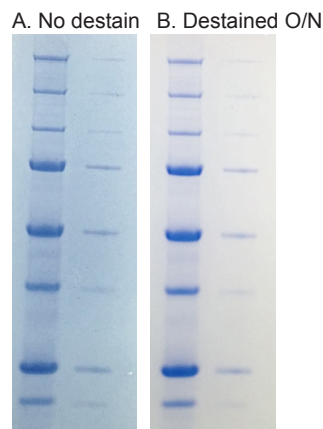


Figure 2. One-Step Blue-stained SDS-PAGE gel (A) immediately after staining, or (B) after destaining in water overnight.

Catalog No.	Product
21004-1L	One-Step Lumitein™ Protein Gel Stain
22001	Ponceau S Solution
30071	AccuOrange™ Protein Quantitation Kit
22012	Non-fat dry milk
22011	Fish gelatin powder
22014	BSA, IgG- and protease-free, 30% solution
22002	TWEEN® 20
41003	GelRed™ Nucleic Acid Gel Stain
41005	GelGreen™ Nucleic Acid Gel Stain
41008-500uL	PAGE GelRed™ Nucleic Acid Gel Stain
41007-500uL	PAGE GelGreen™ Nucleic Acid Gel Stain

Please visit our website at www.biotium.com for information on our life science research products, including fluorescent CF™ dye antibody conjugates and reactive dyes, near-infrared CF™ dye conjugates for western blotting and other applications, EvaGreen™ dye and master mixes for qPCR, apoptosis reagents, fluorescent probes, and kits for cell biology research.

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