Product Information

One-Step Lumitein™ UV Protein Gel Stain, 1X

Catalog Number: 21005-1L, 21005-4L

Unit Size:
21005-1L: 1 liter
21005-4L: 4 liter Cubitainer®

Storage and Handling
Store at 4°C. Product is stable for at least 6 months from date of receipt.

Spectral Properties
Abs max: 288 nm; Em max: 603 nm (see Figure 1)

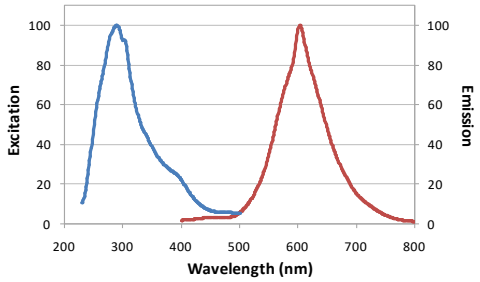

Figure 1. Excitation and emission spectra of One-Step Lumitein™ UV dye.

Product Description

One-Step Lumitein™ UV Protein Gel Stain is a ready-to-use luminescent protein gel stain designed for imaging using a UV transilluminator. One-Step Lumitein™ UV gel staining requires only a single 5-30 minute staining step without fixation. Destaining is optional. Moreover, One-Step Lumitein™ UV Protein Gel Stain offers safer handling and ease of disposal, because it is an aqueous-based solution that does not contain hazardous methanol or acetic acid. One-Step Lumitein™ UV solution (after pH neutralization) passed environmental toxicity testing and is classified as non-hazardous to the environment under CCR Title 22 regulations (see the product protocol for disposal instructions).

One-Step Lumitein™ UV can detect as little as 1-10 ng of protein per band depending on the staining method used, although staining intensity varies between proteins (Figure 2). The results obtained with One-Step Lumitein™ UV are comparable to those with Oriole™ Fluorescent Gel Stain; however, One-Step Lumitein™ UV has a more convenient protocol, does not contain hazardous solvents, and does not cause gel shrinkage. Staining is fully compatible with mass spectrometry and Edman-based sequencing.

Biotium also offers One-Step Lumitein™ Protein Gel Stain (catalog number 21004), which can be imaged using a UV transilluminator, visible light gel imager, or laser-based gel scanner (such as a Typhoon® scanner). One-Step Lumitein™ UV gives a better signal on a UV box than One Step Lumitein™, but is not compatible with a blue light illuminator or laser-based scanner.

Also see our One-Step Blue™ Protein Gel Stain (catalog number 21003), a rapid, easy-to-use, non-toxic alternative to Coomassie staining for visible blue protein staining and optional near-infrared fluorescence-based gel imaging (see related products).

Protocol

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

1. Staining: After electrophoresis, place the unfixed gel in a clean container containing 25 mL of One-Step Lumitein UV per mini-gel and incubate with gentle rocking at room temperature. Bands may start to be detectable after 5 minutes depending on the amount of protein present. For the best sensitivity, stain for 30-60 minutes.

   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 Lumitein UV 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 reduce background and improve sensitivity. Gels can be destained in water for 2 x 5 minutes up to overnight with gentle rocking.

3. Imaging and Quantitation: Gels stained with One-Step Lumitein UV can be imaged with a UV transilluminator and an ethidium bromide filter.

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

4. Disposal: One-Step Lumitein UV is a 100% aqueous-based solution that is uniquely formulated using chemicals that qualify as food ingredients that can be disposed down the drain. It does not contain methanol and is classified as non-hazardous to the environment. However, the solution is acidic and must be neutralized before drain disposal. To neutralize, add 630 uL 1N sodium hydroxide per mL One-Step Lumitein UV and mix well. Alternatively, you can add 25 mg sodium hydroxide pellets per mL One-Step Lumitein UV and stir to dissolve completely.

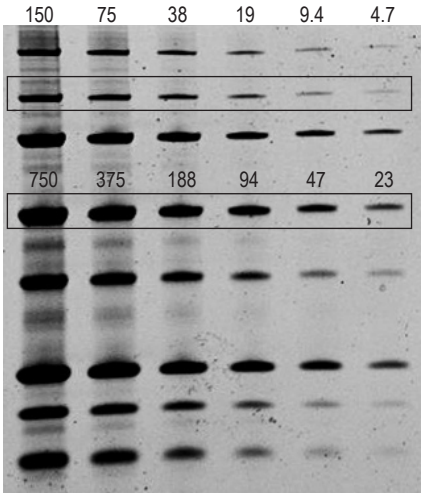

Figure 2. One-Step Lumitein UV-stained SDS-PAGE gel. Two-fold dilutions of Unstained Precision Plus Protein™ Standard (Bio-Rad) were separated on a 1 mm thick Novex® NuPage® 4-12% Bis-Tris MES mini-gel (Thermo Fisher). The gel was stained with One-Step Lumitein UV for 60 minutes without fixation, then imaged on a UV transilluminator with an ethidium bromide filter using a UVP GelDoc-It™ imaging system. The gel was imaged immediately, without destaining. Labels indicate approximate protein amounts (ng) in the boxed bands beneath.

Related Products

Catalog No.	Product
21003-1L	One-Step Blue™ Protein Gel Stain
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.