RESEARCH PRODUCTS INTERNATIONAL

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INSTRUCTIONS

Rapid Commassie Stain
No. RCS-50

A Fast, Simple and Sensitive Method for Staining Proteins in Acrylamide Gels

Simple - A 2 step procedure
Rapid - Requires 30-60 minutes for completion
Sensitive - Detects as low as 7.9ng of protein
Resolution - Sharper than conventional Coommassie Blue
Versatile - Capable of being restrained by Silver
Unique - Compatible with Nitrocellulose or Immobilon

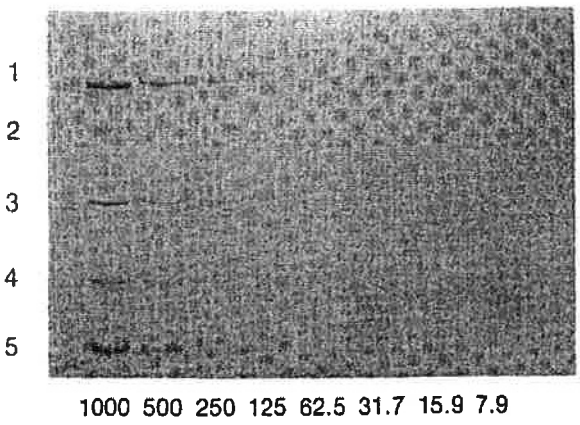
Polyacrylamide gel electrophoresis in the presence of Sodium Dodecyl Sulfate (SDS-PAGE) is one of the most effective techniques for separating complex mixtures of proteins into their constituent polypeptides. Various techniques have been developed to visualize the proteins on the gel although Coomassie Brilliant Blue (CBB) staining remains the most commonly used technique (1).

Coomassie Brilliant Blue Staining as commonly practiced is simple, reliable, and economical but lacks the sensitivity often needed in protein analysis and requires rather lengthy staining (up to 6 hrs) and background destaining (up to 48 hrs) protocols, see (2).

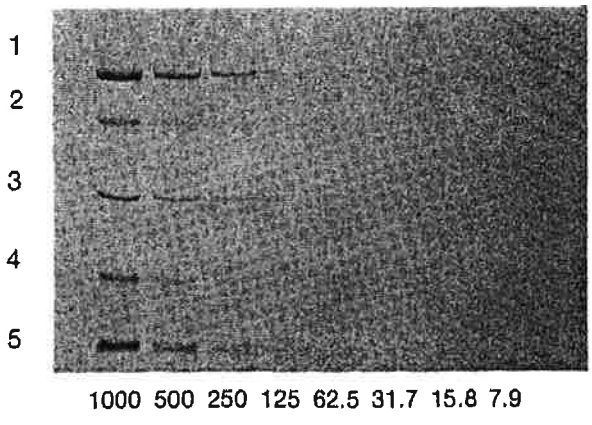
RAPID COOMASSIE STAIN is a unique Commassie blue based formulation where the dye is preferentially absorbed by the protein bands rather than the gel matrix, thus completely eliminating the destaining step.

RAPID COMMASSIE STAIN is simple 2-step procedure consisting of a 10 minute incubation in TCA followed by a 20-40 minute incubation in Rapid Coomassie Stain. The protein band may be detected within 10 minutes of placing the gel in Rapid Coomassie Stain, although maximum intensification of bands may require up to 40 minutes. There is no need for any destaining.

Coomassie Blue after 20 hrs
Protein, ng



Rapid Coomassie Blue Stain after 1 hr
Protein, ng



Molecular weight markers (1-Bovine serum albumin; 2-ovalbumin; 3-caerbonic anhydrase; 4-trypsin inhibitor; 5-cytochrome c) electrophoressed on a 0.75 mm 12.5% acrylamide slab gel according to Laemmli. (3) Gels are stained with Conventional Coomassie Blue (left figure) or with Rapid Coomassie Stain (right figure).

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The other advantages of RAPID COOMASSIE STAIN compared to conventional Coomassie Brilliant Blue staining are the enhanced sensitivity of detection and sharper resolution in the RAPID COOMASSIE STAIN resulting from the fixation step. Thus the use of RAPID COOMASSIE STAIN facilitates detection of as low as 7.9 ng protein within one hour of completion of electrophoresis.

Instructions For Use

RAPID COOMASSIE STAIN is supplied as a 20X concentrated stock solution that is stable at room temperature for 18 months. Working 1X staining solutions may be prepared by mixing 2ml of RAPID COOMASSIE STAIN and 40ml of 7.5 percent methanol–5.0 percent acetic acid.

For best results the 1X working stain should be prepared just prior to use, and discarded after each use.

For staining, the polyacrylamide gels should be rinsed briefly with deionized water and incubated as follows with constant gentle shaking on an orbital shaker throughout the procedure.

STEP 1
10 minutes in 12.5% trichloroacetic acid.

STEP 2
20-40 minutes in 1X RAPID COOMASSIE STAIN.

The protein bands will become visible within 10 minutes of placing the gel in RAPID COOMASSIE STAIN although maximum intensification of bands may require incubation up to 40 minutes.

The background is stained slightly blue: this does not interfere with the detection of protein bands. The background stain may be removed by incubation of gel in 7.5 percent methanol – 5.0 percent acetic acid.

RAPID COOMASSIE stained gels may be dried or stored wet in 7.5 percent methanol – 5.0 percent acetic acid.

For staining proteins transferred on nitrocellulose, or immobilon, incubate the membrane replica for 5-10 minutes in 1X stain followed by destain.

It may be noted that the procedure as described has been optimized for a 0.75 thick gel, electrophorised according to Laemmli (3). Thicker gels or gels processed according to other PAGE systems may require longer incubations.

References

1. Fazekas de St. Groth, S., Webster, R.G., and Datyner, A. (1936) Biochem. Biophys. Acta 71, 377-391.
2. Hames, B.D (1981) In Gel Electrophoresis of Proteins. (Hawes, B.D., and Rickwood, D., eds.) pp.44-49. IRL Press, Washington D.C.
3. Laemmli, U.K. (1970) Nature (London) 227, 680-685.

Ordering Information

Order No.	Description
RCS-50	**100ml Stock Solution** (2 Liter Working Solution)