It is possible to reversibly stain gels prior to blotting by a couple of methods. The simplest is by **simply soaking the gel in ice-cold 1M potassium chloride**: SDS precipitates as KDS, and proteins are visible as whiter zones in an opaque-to- translucent white background. The method is not sensitive, however.

An alternative to KCL treatment - which is sensitive, stable, and **totally reversible for subsequent recovery of the protein, is as follows**.

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Copper staining: a five-minute protein stain for sodium dodecyl sulfate-polyacrylamide gels.

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We present a new method for visualizing proteins electrophoresed in sodium dodecyl sulfate-polyacrylamide gels. After electrophoresis, gels are incubated in CuCl2 to produce a negative image of colorless protein bands against a semiopaque background. Gels are stained completely within 5 min, do not require destaining, and can be stored indefinitely without loss of the image. Because proteins are not permanently fixed within the gel, they can be quantitatively eluted after chelation of Cu with EDTA. The sensitivity of the CuCl2 stain falls between that of Coomassie blue and silver. We anticipate that CuCl2 will be useful in the rapid analysis of proteins by polyacrylamide gel electrophoresis and in the preparation of purified polypeptides by elution from gel slices.

Cupric Chloride Stain

0.3 M cupric chloride 5.1 g cupric chloride into 100 ml with di-H_20

Procedure

• Following electrophoresis, transfer directly to the Cupric Chloride Stain solution and shake for 5 minutes.
• Rinse with distilled water and immerse in sufficient fresh distilled water to cover the gel (this acts as the destaining step). Transfer to saran wrap on a black background to visualize the bands.
• The gels can be photographed under white light and stored for many months at 4°. The bands will not diffuse unless they are cut from the gel.