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## A rapid laboratory method for developing contact prints of stained polyacrylamide gels\*

A rapid laboratory method for processing quality color prints of high resolution two-dimensional polyacrylamide gels has been developed to obtain photographs for data storage or for the presentation of results in poster formats. This method involves the contact printing of a gel directly onto the film so that the final print will be an exact duplication of the size and color of the gel. A variety of papers or films can be used to produce color prints or transparencies. This method has been adapted for use with a color or with a black and white photographic enlarger.

The recent development of a color-based silver staining method [1] has improved the detection as well as the characterization of protein patterns in electrophoretic gels. Few laboratories, however, have immediate access to dark rooms for color photographic development. Furthermore, few

systems have been established to computerize color protein patterns. Acrylamide gels which have been processed using this silver stain method are difficult to preserve by drying, a process which will also obscure the color patterns if filter paper is used as a gel backing. It is frequently necessary to send

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photographs of gels to other laboratories to compare results directly as well as to prepare photographs for meeting presentations. Preparations of photographs for presentation can be expensive as well as time-consuming if an investigator has to rely on a commercial firm. For these reasons we have established a method to obtain color prints of gels which can be easily done in any dark room equipped for black and white or color photography, utilizing commercially available photographic supplies.

High resolution two-dimensional polyacrylamide gel electrophoresis of tissues was performed as described by [2] using the ISO-DALT\*\* system [3, 4]. Gels were stained with the color-based silver stain as described by [1] or with the commercially available stain Gelcode (Upjohn Co.). Gels were placed between 10 × 12 cm pieces of glass (thickness: 5 mm) held together by large paper clamps (essentially as described by [5]). The edges must be blotted thoroughly to ensure that no liquid touches the photographic paper. The gels are placed on a block of wood or plastic (20.3 × 25.4 × 2 cm) and the clamps are adjusted so that they fit over the edges of the block. This helps position the gel for light exposure since the paper must be handled in the dark. The following filters were found to be optimal for use with an Omega color enlarger (#C720): Cyan 0.40; Magenta 0.40; Yellow 0.0. The exposure time used was 3 seconds with the F stop set at 8, depending on the density of the gel. Cibachrome A II paper (Ilford) has been used routinely for quality prints. Color transparencies can also be made using Kodak Ektachrome Duplicating Film (Process E-6). The

\*\* Mention of a specific product name by the USDA does not constitute an endorsement and does not imply a recommendation over other suitable products.

same filters were used for preparing color transparencies with an exposure of 1 to 1.5 seconds at an F stop of 5.6. Filters used with a standard black and white enlarger were magenta 0.2 and cyan 0.4 (Unicolor Division, Photo Systems Inc., Dexter, Mich.). Exposures were for 3 seconds at an F stop of 8. Prints were developed with the Ilford Cibachrome-A Process P-30 chemistry kit using a Beseler color developing tank. The color prints were developed using the procedure that accompanies the Cibachrome-A processing kit. Color transparencies were developed using the Kodak E-6 processing kit with appropriate tanks.

This procedure has been found to be invaluable for permanent storage of protein patterns as well as for poster presentations of polyacrylamide gels where color information is necessary. This procedure is rapid, simple and far less expensive than commercial processing. Color transparencies further provide a method to preserve the protein patterns obtained from two-dimensional polyacrylamide gels for future use when computerized systems are available to process color patterns.

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