Journal of Chromatography, 538 (1991) 504–505
Elsevier Science Publishers B.V., Amsterdam

CHROM. 22 831

Short Communication

Method for long-term preservation of thin-layer polyacrylamide gels by producing a gelatine coating

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(First received August 10th, 1990; revised manuscript received September 20th, 1990)

ABSTRACT

Thin-layer polyacrylamide gels can be preserved and stored for unlimited periods by covering them with a gelatine coating. The method is inexpensive and simple. After air-drying, the gel is immersed in an aqueous 10% solution of highly viscous gelatine between 55 and 60°C. The coated gel is dried by hanging it in air. The method was checked successfully with gels of different thicknesses (0.15–0.50 mm) and after using different staining methods, *e.g.*, with silver, Coomassie Brilliant Blue and pseudoperoxidase.

INTRODUCTION

Thin and ultra-thin polyacrylamide gels after application in electrophoresis and especially isoelectric focusing [1] can normally be stored as a document for only a short period. When the gels are stored for longer periods they are ruptured or changed in an adverse way.

For the long-term preservation of such gels it has been suggested that they be stored in evacuated transparent bags [2], but it is even better to cover them with a gelatine coating as described below. The latter has the advantages that it is very cheap, large gels can be preserved and handled easily and no vacuum sealing machine is needed.

PREPARATION OF A 10% GELATINE SOLUTION

For the production of a smooth gelatine coating, free from air bubbles, it is essential to prepare the gelatine solution using ion-free water that has been boiled beforehand. After boiling, the water is cooled to 60°C in a 600-ml beaker. To 360 ml of the water, 40 g of pulverized highly viscous gelatine (*e.g.*, edible gelatine, 280 Bloom grade, produced by Deutsche Gelatine-Fabriken Stoess, Eberbach, F.R.G.) are added. The solution is stirred continuously until the gelatine has dissolved completely, and the

0021-9673/91/$03.50

temperature should be maintained in the range 55–60°C using a temperature-controlled water-bath. Finally, 2% glycerol (8 ml) and for microbiological stabilization a few drops of a 0.1% percent aqueous solution of sodium azide are added.

COATING THE GELS WITH GELATINE

The hot gelatine solution is transferred carefully into a suitable dish so that the formation of foam is avoided. Then the dry polyacrylamide gel is inserted slowly in the gelatine solution and the foil of the gel is fixed at the margin by a clamp. For this purpose, a staining and destaining dish from Pharmacia–LKB (Cat. No. 2117-109) is recommended (the cover of which limits losses from evaporation).

After immersing the gel for a short period (5–10 s) in the gelatine solution the gel is removed and, after allowing the excess of solution to run off, it is dried by hanging it in air. This procedure has been applied successfully to 0.15–0.50-mm gels of different dimensions (125 × 125 and 245 × 125 mm) after staining the gels with silver [3], Coomassie Brilliant Blue [4] or pseudoperoxidase [5].

STORAGE OF THE GELATINE SOLUTION

After use, the gelatine solution should be returned to the beaker and sealed, *e.g.*, with Parafilm. The solution solidifies when the temperature falls and it can be used again several times after warming to 55–60°C.

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