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Notes & Tips

Introducing color into stacking gels makes sample loading easy

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Polyacrylamide gel electrophoresis (PAGE) is ubiquitous in molecular biology laboratories. Discontinuous PAGE systems introduced in 1964 by Ornstein [1] and Davis [2] consist of two components known as stacking and resolving gels. When the gel is cast, a comb-shaped insert is used to form an array of uniformly spaced sample wells. This standard technology leads to one apparent inconvenience—the wells are barely visible in the colorless and transparent electrophoretic solution. As a result, loading the sample onto the gel is more difficult than it should be.

We propose a simple improvement to the existing procedure whereupon the color is added to the stacking portion

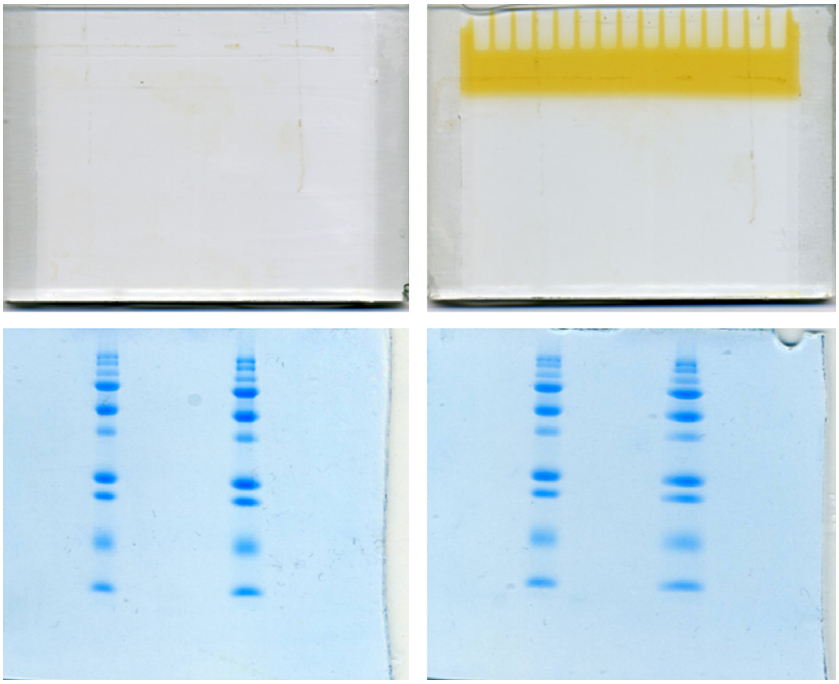

Fig. 1. Traditional (left half of the figure) and new (right half of the figure) renditions of sodium dodecyl sulfate (SDS) PAGE gels. Upper panels show the gels before loading; bottom panels show the scans of the processed gels. In the new preparation, 1.5 mg/ml of methyl orange dye was added to 4%-acrylamide stacking buffer (upper right). The performance of the gels has been verified using Bio-Rad protein marker (Catalog No. 161-0373).

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of the gel (Fig. 1, upper right). A variety of simple dyes, such as methyl orange, phenol red, and methyl green, are suitable for this purpose. The performance of the gel remains unaffected. We hope that this simple modification will ease the strain associated with millions of gel manipulations performed each year in laboratories across the world.

References

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[2] B.J. Davis, Disc Electrophoresis .2. Method and Application to Human Serum Proteins, Ann. N.Y. Acad. Sci. 121 (1964) 404–427.