

Advantages of Duracryl™ High Tensile Strength Acrylamide

Proteomic Technical Note

INTRODUCTION

Duracryl is a mechanically strong and elastic acrylamide-based matrix, useful for a wide variety of electrophoretic applications.¹ A recent study in Genomic Solutions' laboratory has shown that, in addition to being a more durable material for gels, Duracryl also offers the advantage of higher resolution and yields less diffuse low molecular weight protein spots.

PROTOCOL

1. Four 18 cm 4-8 pFlash™ strips were rehydrated with 100 µg of E. coli lysate protein in 400 µl of urea/thiourea solubilization/rehydration solution.
2. The rehydrated gels were focused for 80000 volt-hours using the Genomic Solutions pHaser™ and Investigator power supply. During focusing, the gels were maintained at 20 °C using the Investigator chiller.
3. Upon completion of focusing, two strips were run in the second dimension on 10% acrylamide gels and two on 10% Duracryl gels. Both sets of gels were Investigator Pre-cast Gels made by Genomic Solutions.
4. The second dimension gels were fixed and then stained with SYPRO® Ruby.
5. After destaining, the gels were imaged using the ProXPRESS™.

RESULTS: (Figure 1)

- Although great care was taken to handle the acrylamide gels gently, both gels broke into several pieces. Both of the Duracryl gels remained intact with no special care.
- More protein spots were resolved on the Duracryl gels than on the acrylamide gels.
- Protein spots in the lower molecular weight range are less diffuse in the Duracryl gels.

MATERIALS

Part Number	Description
0070-4318	pH 4-8 pFlash Strips, 18 cm, pack of 10
0070-4019	Urea/ thiourea solubilization/ rehydration buffer, 10 X 1 ml
0080-0084	Acrylamide 30% (30T, 2.6C), 1L
0070-3995	SYPRO Ruby Gel Stain, 1 L
ESPCGS	Electrophoresis System with pHaser

¹ Patton, WF; Lopez, MF; Barry, P; and Skea, WM. 1991. A mechanically strong matrix for protein electrophoresis with enhanced silver staining properties. *Biotechniques* 12:580-585.

Advantages of Duracryl

2-D Analysis

Protein Picking

Protein Arraying

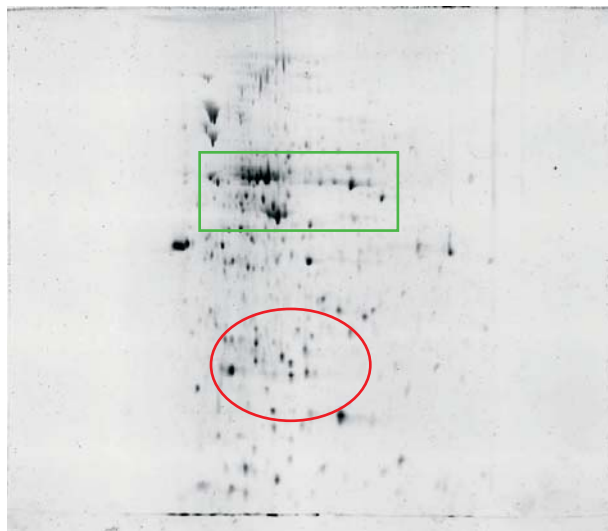
Protein Digestion

MORE SPOTS
RESOLVED ON
DURACRYL
GEL

MALDI

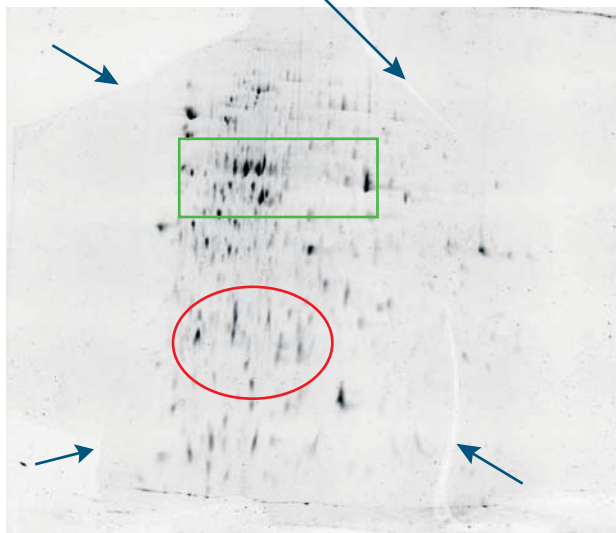
Data Integration

Duracryl Gel Results



LOW MOLECULAR
WEIGHT PROTEIN
SPOTS ARE LESS
DIFFUSE ON
DURACRYL

Acrylamide Gel Results



→ ARROWS INDICATE
BREAKS IN
ACRYLAMIDE GEL

Figure 1
10% Duracryl and Acrylamide Gels
stained with SYPRO Ruby

©2001 Genomic Solutions Inc. 10/01 v 1.0, rev 1.0
SYPRO is a registered trademark of Molecular Probes, Inc. ProXPRESS is a trademark of PerkinElmer Life Science, Inc.
Investigator, pHaser, pFlash, Duracryl, and Genomic Solutions are trademarks of Genomic Solutions Inc.

Worldwide Headquarters: 4355 Varsity Drive
Ann Arbor, Michigan 48108 USA
Ph: +1.734.975.4800 • Fx: +1.734.975.4808
Toll Free: 1.877.GENOMIC (436.6642)

Europe: Genomic Solutions Ltd. • 8 Blackstone Road
Huntingdon • Cambridgeshire
PE29 6EF • United Kingdom
Ph: +44 (0) 1480 426 700 • Fx: +44 (0) 1480 426 767

The Genomic Solutions Family

