Protein Electrophoresis

ProteoGel IPG Strip, 11 cm, pH 5-8

I 3781 Gel Matrix: Polyacrylamide, 4%T, 3%C — 12 each
–20-0°C Gel Backing: Polyester Film

ProteoGel IPG Strips, 11 cm, pH 6-11

I 7531 Gel Matrix: Polyacrylamide 4% T, 3% C — 12 each
2-8°C Gel Backing: Polyester Film

ProteoGel IPG Strip, 11 cm, pH 8-11

I 3906 Gel Matrix: Polyacrylamide: 4%T, 3%C — 12 each
–20-0°C Gel Backing: Polyester Film

ProteoGel IPG Strip, 18 cm, pH 3-10

I 4031 Gel Matrix: Polyacrylamide: 4%T, 3%C — 12 each
–20-0°C Gel Backing: Polyester Film

ProteoGel IPG Strip, 18 cm, pH 3-5

I 4281 Gel Matrix: Polyacrylamide. 4%T, 3%C — 12 each
–20-0°C Gel Backing: Polyester Film

ProteoGel IPG Strip, 18 cm, pH 4-7

I 4156 Gel Matrix: Polyacrylamide, 4%T, 3%C — 12 each
–20-0°C Gel Backing: Polyester Film

ProteoGel IPG Strip, 18 cm, pH 5-8

I 4406 Gel Matrix: Polyacrylamide, 4%T, 3%C — 12 each
–20-0°C Gel Backing: Polyester Film

ProteoGel IPG Strips, 18 cm, pH 6-11

I 7656 Gel Matrix: Polyacrylamide 4%T, 3%C — 12 each
2-8°C Gel Backing: Polyester Film

ProteoGel IPG Strip, 18 cm, pH 8-11

I 4531 Gel Matrix: Polyacrylamide, 4%T, 3%C — 12 each
–20-0°C Gel Backing: Polyester Film

ProteoGel™ IPG Equilibration Buffer

I 7281 (IPG Equilibration Buffer) — 1 bottle
RT
Following isoelectric focusing, ProteoGel IPG Equilibration Buffer conveniently prepares IPG strips for SDS-PAGE 2D analysis. It adjusts IPG strips to an appropriate pH, maintains protein solubility and further denatures protein samples.
R: 36/37/38 S: 26-36

Kit for Isoelectric Focusing range 3.6 - 9.3

IEF-M1A **Components:** — 1 kit
–0°C
Marker dye, 1 vial
Protein mixture, 1 vial
Proteins (A 2910, T 1021, L 5137, C 6403, C 6653, M 9267, L 1277, T 1146), 8 vials
Sigma Technical Bulletin No.IEF-100A,
R: 20/21/22-40 S: 26-36

IEF mix 3.6-9.3

I 3018 **Lyophilized powder** — 1 vial
–0°C
Contains eight proteins producing 11 bands on IEF (non-urea).
Isoelectric focusing marker
Vial contains 0.2 M glycine, pH 6, after reconstituting with 0.25 ml water.

IEF mix 3.6-6.6

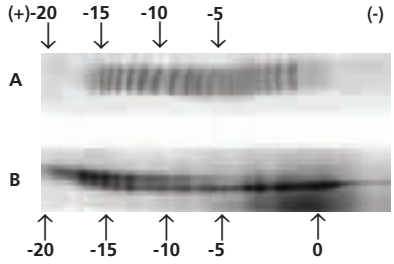
I 8012 **Lyophilized powder** — 1 vial
–0°C
Mixture of 40 µg of each of the seven proteins from kit IEF-M2 (A 2910, G 7146, T 1021, L 5137, C 3666, C 6403, C 6653) producing seven bands on IEF (non-urea).
Isoelectric focusing marker
Vial contains 0.2 M glycine, pH 6, after reconstituting with 0.25 ml water.

Kit for Isoelectric Focusing range 3.6 - 6.6

IEF-M2 **Components:** — 1 kit
–0°C
Marker Dye, 1 vial
Protein mixture, 1 vial
Proteins (Products A 2910, G 7146, T 1021, L 5137, C 3666, C 6403, C 6653), 7 vials
Sigma Technical Bulletin No. IEF-100,
R: 20/21/22-36/37/38-40 S: 22-36

Myoglobin, Carbamylated 2D Electrophoresis Marker

M 3286 **from equine heart** — 1 vial
2-8°C
mol wt approx. 17,600

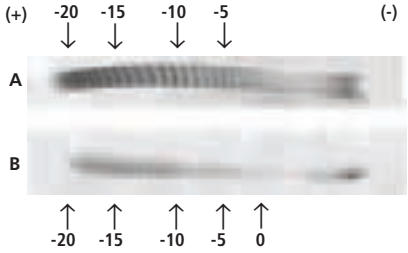


25 µg of carbamylated myoglobin was run on (A) IEF urea gel, pH 3-10 (1D); (B) 12% SDS-PAGE gel (2D)

Protein Electrophoresis

Glyceraldehyde-3-phosphate Dehydrogenase, Carbamylated 2D Electrophoresis Marker

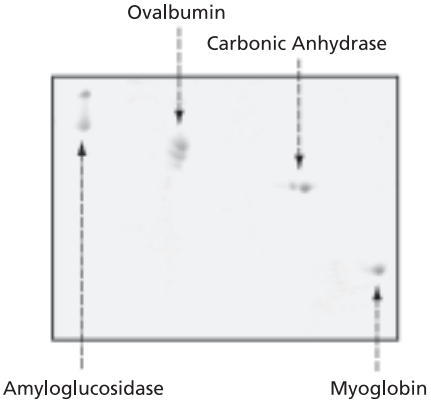
G 0653 **from rabbit muscle** 1 vial
2-8°C
mol wt approx. 36,000



30 µg of carbamylated glyceraldehyde-3-phosphate dehydrogenase was run on (A) IEF urea gel, pH 3-10 (1D); (B) 12% SDS-PAGE gel (2D)

Marker for 2D Electrophoresis

M 3411 **Urea solution** 1 vial
-70°C
DRY ICE
This marker is specifically designed for two-dimensional electrophoresis (2D) and denaturing (urea) IEF. The four proteins in this marker have been selected to provide a diagonal pattern across a 2D gel.
Solution in 8 M urea, 2% 2-mercaptoethanol
Vial contains approx. 200 µl of a mixture of four proteins.
1 vial sufficient for 20-40 applications (on gels to be stained with Brilliant Blue)
mol wt 17,000-89,000
R: 20/22-24-37/38-40-41 S: 53-26-36/37/39-45

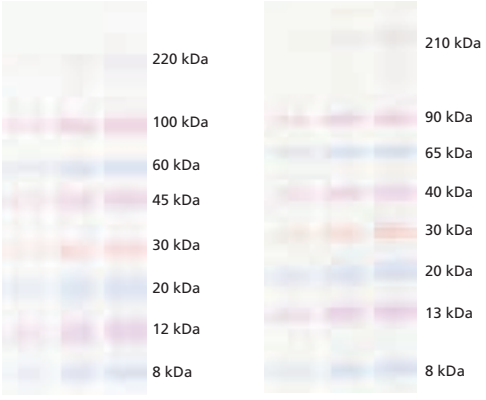


5 µl of 2D markers (M 3411) were separated with a mixture of Ampholine pH 3.5-9.5 and Ampholine pH 2.5-4.5 in the ratio 1:2.5 and then separated on a 12.5% SDS-PAGE gel. The gel was stained with Coomassie Brilliant Blue G

ColorBurst™ Electrophoresis Markers

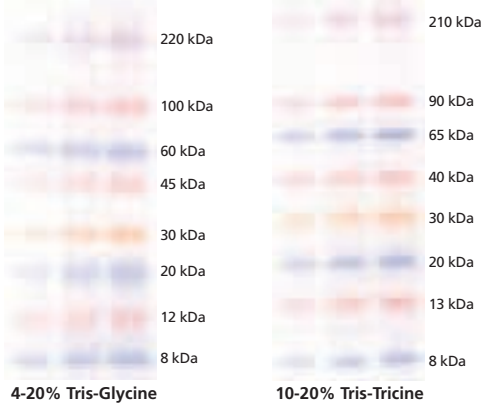
C 4105 **pH 8, solution** 1 vial
-20°C
NEW
Each vial of ColorBurst contains 500 µL of solution, enough for at least 50 mini gel applications.
Colorburst can be used to estimate sample molecular weights, to monitor the progress of an electrophoretic run, or to confirm than an electroblot is complete.
Brilliantly colored, exceptionally well-resolved, convenient, and stable, Colorburst protein molecular weight markers perform impressively in a variety of gel compositions and concentrations. ColorBurst Markers are composed of 8 polypeptides which have been chemically reduced and conjugated to brilliantly colored dyes. Conveniently, Colorburst Markers require no resuspension, reduction, or heating prior to use.
R: 61-37/38-41 S: 53-23-26-36/37/39-45

Figure 1



Both gels were loaded (left to right) with 3, 5 and 7 µl of ColorBurst Marker. The marker was run using standard conditions on 10 x 10 cm, 1 mm thick, 10-well precast gels.

Figure 2



Bands transferred to nitrocellulose membranes from the gels in Figure 1. Transfers were completed in 90 minutes at 70 volts with Towbin"s buffer (Tris-Glycine in 20% methanol.) Molecular Masses (kDa) given are apparent values as compared to Sigma"s wide range marker set (M 4038). The Colorburst markers migrate differently with respect to M 4038 in the different gel systems tested.

Chemichrome™ Western Control

C 4236 **(Color Molecular Weight Marker)** 1 vial
2-8°C
Chemichrome Western Control is an ideal molecular weight marker and positive control for researchers performing electrophoresis and subsequent Western blotting. Similar to Colorburst™, Chemichrome contains an additional band of mouse IgG. During electrophoresis, brightly colored protein bands serve as positive controls for protein migration. During blotting, the same brightly colored bands indicate that the transfer is complete. After incubation with mouse primary and secondary antibodies, the band of mouse IgG serves as a positive control using either colorimetric or chemiluminescent substrates. Chemichrome is supplied in vials containing 200 µl of ready-to-use solution.

Features and Benefits

- Confirms that a membrane transfer is complete
- Confirms successful Western Blotting Conditions
- Compatible with many peroxidase and phosphatase substrates, including TMB and ECL®.

R: 61-37/38-41 S: 53-23-26-36/37/39-45

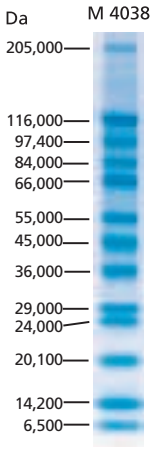
Colorburst (lane 1), Chemichrome (lane 2), and varying concentrations of FLAG-BAP (lanes 3-6) were run on a 6-15% tris-acetate gel (T 1571), transferred to PVDF and developed with a TMB substrate.

Colorburst (lane 1, undetected), Chemichrome (lane 2), and varying concentrations of FLAG®-BAP (lanes 3-6) were run on a 6-15% tris-acetate gel (T 1571), transferred to PVDF and developed with a chemiluminescent substrate for approximately 5 seconds.

SigmaMarker™ Wide Range (M.W. 6,500-205,000)

M 4038 Will yield 13 protein bands with Coomassie 1 vial
2-8°C Blue staining: aprotinin, α-lactalbumin, 10 vials
trypsin inhibitor, trypsinogen, carbonic anhydrase, glyceraldehyde-3-phosphate dehydrogenase, ovalbumin, glutamic dehydrogenase, albumin, fructose-6-phosphate kinase, phosphorylase b, β-galactosidase and myosin

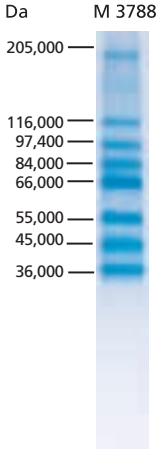
R: 42/43 S: 36



M 4038 (5 µl) was run on a 4-20% PAGE gel and stained with EZBlue (G 1041)

SigmaMarker™ High Range (M.W. 36,000-205,000)

M 3788 Will yield eight protein bands with 1 vial
2-8°C Coomassie Blue staining: glyceraldehyde-3- 10 vials
phosphate dehydrogenase, ovalbumin, glutamic dehydrogenase, albumin, fructose-6-phosphate kinase, phosphorylase b, β-galactosidase and myosin.



M 3788 (5 µL) was run on a 4-20% PAGE gel and stained with EZ Blue (G1041).

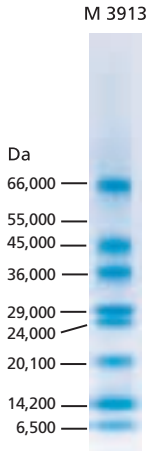
Protein Electrophoresis

SigmaMarker™ Low Range (M.W. 6,500-66,000)

M 3913 Will yield eight protein bands with Coomassie Blue staining: aprotinin, α-lactalbumin, trypsin inhibitor, trypsinogen, carbonic anhydrase, glyceraldehyde-3-phosphate dehydrogenase, ovalbumin and albumin — 1 vial, 10 vials

2–8°C

R: 42/43 S: 36



Fluorescent Molecular Weight Standards for SDS-PAGE and Protein Transfer High Range: M.W. 20,100-205,000

F 3526 **Lyophilized powder** — 1 vial

−20°C

This product contains the following proteins:

- Trypsin Inhibitor, Soybean: 20,100 Da
- Carbonic Anhydrase, Bovine Erythrocyte: 29,000 Da
- Alcohol Dehydrogenase, Horse Liver: 39,800 Da
- Albumin, Bovine Serum: 66,000 Da
- β-Galactosidase, *E. coli*: 116,000 Da
- Myosin, Rabbit Muscle: 205,000 Da

Color. . . . . blue

Fluorescent Molecular Weight Standards for SDS-PAGE and Protein Transfer Low Range: M.W. 6,500-39,800

F 3401 **Lyophilized powder** — 1 vial

−20°C

This product contains the following proteins:

- Aprotinin, Bovine Lung: 6,500 Da
- α-Lactalbumin, Bovine Milk: 14,200 Da
- Trypsin Inhibitor, Soybean: 20,100 Da
- Carbonic Anhydrase, Bovine Erythrocyte: 29,000 Da
- Alcohol Dehydrogenase, Horse Liver: 39,800 Da

Color. . . . . blue

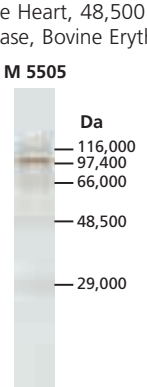
Silver Stain SDS-PAGE Molecular Weight Standard Mixtures High Molecular Weight Standard

M 5505 This product contains the following proteins: — 1 vial

−20°C

DRY ICE

- β-Galactosidase, *E. coli,* 116,000 Da
- Phosphorylase b, Rabbit Muscle, 97,400 Da
- Serum Albumin, Bovine, 66,000 Da
- Fumarase, Porcine Heart, 48,500 Da
- Carbonic Anhydrase, Bovine Erythrocytes, 29,000 Da



M 5505 (7.5 µl of a 1:15 dilution) was run on a 10-18% SDS-PAGE gel and silver stained.

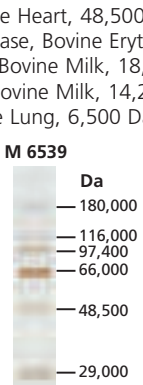
Silver Stain SDS-PAGE Molecular Weight Standard Mixtures Wide Molecular Weight Standard

M 6539 This product contains the following proteins: — 1 vial

−20°C

DRY ICE

- α_2-Macroglobulin, 180,000 Da
- β-Galactosidase, *E. coli*, 116,000 Da
- Phosphorylase b, Rabbit Muscle, 97,400 Da
- Serum Albumin, Bovine, 66,000 Da
- Fumarase, Porcine Heart, 48,500 Da
- Carbonic Anhydrase, Bovine Erythrocytes, 29,000 Da
- β-Lactoglobulin, Bovine Milk, 18,400 Da
- α-Lactalbumin, Bovine Milk, 14,200 Da
- Aprotinin, Bovine Lung, 6,500 Da

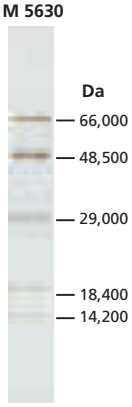


M 6539 (7.5 µl of a 1:15 dilution) was run on a 10-18% SDS-PAGE gel and silver-stained.

Protein Electrophoresis

Silver Stain SDS-PAGE Molecular Weight Standard Mixtures Low Molecular Weight Standard

M 5630 This product contains the following proteins: 1 vial
–20°C
DRY ICE
- Serum Albumin, Bovine, 66,000 Da
- Fumarase, Porcine Heart, 48,500 Da
- Carbonic Anhydrase, Bovine Erythrocytes, 29,000 Da
- β-Lactoglobulin, Bovine Milk, 18,400 Da
- α-Lactalbumin, Bovine Milk, 14,200 Da



M 5630 (7.5 µl of a 1:15 dilution) was run on a 10-18% SDS-PAGE gel and silver stained.

Protein Detection

Antibodies and Conjugates

FLAG

ANTI-FLAG® M2 Monoclonal Antibody

F 3165 **from mouse** 200 µg
–20-0°C **Purified immunoglobulin, Buffered** 1 mg
aqueous solution 5 mg
DRY ICE
Binds to the FLAG epitope wherever it is located in the fusion protein: amino-terminal, Met-amino-terminal, carboxy-terminal, or internal. Binding is not Ca^{2+}-dependent.
For detection of FLAG fusion proteins by immunoprecipitation, immunoblotting, or EIA.
Clone M2
Application(s)
Indirect immunoblotting (chemiluminescent). . . . . 10 µg/mL
Isotype. IgG1

ANTI-FLAG® BioM2

F 9291 **from mouse** 200 µg
–20-0°C (ANTI-FLAG® M2–Biotin from mouse) 1 mg
Purified immunoglobulin, Buffered 5 × 1 mg
DRY ICE **aqueous solution**
Binds to the FLAG epitope wherever it is located in the fusion protein: amino-terminal, Met-amino-terminal, carboxy-terminal, or internal. Binding is not Ca^{2+}-dependent.
Biotin-labeled antibody is used for immunodetection methods using avidin- or streptavidin-conjugated reporter enzymes such as streptavidin-peroxidase. Primary antibody conjugates are preferred when using murine cells as the recombinant protein host.
Solution in 10 mM sodium phosphate, pH 7.4, containing 150 mM NaCl and 0.02% sodium azide
Application(s)
Indirect immunoblotting (chemiluminescent). . . . . 10 µg/mL
Isotype. IgG1

ANTI-FLAG® Polyclonal Antibody

F 7425 **from rabbit** 200 µg
–20-0°C **Affinity isolated antibody, Buffered**
aqueous solution
DRY ICE
Immunogen: Synthetic FLAG sequence containing peptide DYKDDDDK-GC conjugated through a terminal cysteine thiol to maleimide-activated KLH.
The antibody recognizes the FLAG epitope located on FLAG-tagged fusion proteins at the N-terminus or C-terminus, applying dot blot, immunoblotting, immunoprecipitation and immunocytochemistry assays.
Solution in 0.01 M phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide
Purified by affinity chromatography on a column bearing the immunizing peptide.
Application(s)
Indirect immunoblotting (chemiluminescent). . . . 2.5 µg/mL using an *Escherichia coli* periplasmic extract expressing an N-terminal FLAGfusion protein
Indirect immunofluorescence. . 5 µg/mL using 293T cells transfected with a plasmid encoding FLAG-JNK

ANTI-FLAG® M2-Alkaline Phosphatase Conjugate

A 9469 **from mouse** 200 µg
–20-0°C **Purified immunoglobulin, Buffered** 1 mg
aqueous glycerol solution 5 × 1 mg
WET ICE
Binds to the FLAG epitope wherever it is located in the fusion protein: amino-terminal, Met-amino-terminal, carboxy-terminal, or internal. Binding is not Ca^{2+}-dependent.
For simple, one-step detection by immunocytochemistry, immunohistochemistry, ELISA, or Western blotting. Especially useful in detection of FLAG fusion proteins expressed in murine host, where secondary anti-mouse antibodies may cause cross-reactivity.
Solution in Tris buffered saline containing 50% glycerol plus stabilizer and preservative
Clone M2
Application(s)
Direct ELISA. 1:20,000
Isotype. IgG1
R: 21/22 S: 36