Protein Electrophoresis

Interchim BioSciences innovation proposes a complete range of other products for electrophoresis and downstream analysis: see the Protein Electrophoresis Chart.

Electrophoresis Gels – matrice rghts & soln, precast gels

Acrylamides

Acrylamides are the most used matrix used for protein electrophoresis, so-called PAGE (Polyacrylamide Gel Electrophoresis), starting with the SDS-PAGE method for protein molecular size determination, the Native Electrophoresis, the IEF method for determination of protein isoforms, and their combinations, notably 2 Dimensional electrophoresis (IEF/SDS PAGE).

Uptima reagents provide highest quality for high resolution matrix in 1-D, 2-D and IEF separations.

- Uptima Standard stock solutions:
  - Acrylamide/Bis-Acrylamide 19:1 Solution 40% contains 38.1% Acrylamide/2.0% Bis-Acryl (w/v) UP86489B, 500 ml
  - Acrylamide/Bis-Acrylamide 29:1 Solution 40% contains 38.87% Acrylamide/1.33 bis-Acryl (w/v) UP864927, 500 ml
  - Acrylamide/Bis-Acrylamide 37.5:1 Solution 40% contains 38.96% Acrylamide/1.04% bis-Acryl (w/v) (or 30:0.8 Solution) UP864937, 500 ml

- Uptima Concentrate stock solutions – Biotechnology grade: see technical sheet
  - Acrylamide Solution 4X-40% 873376, 500 ml
  - Bis-Acrylamide Solution 2% UP864965, 500 ml

- Also exists as powders, and proteomic grade solutions. Please see the Laboratory Biochemicals catalog. Also see Technical sheet (bis, PDA, DATP) for more reproducible, safer, home mode solutions.

Other biochemicals for gel/matrices preparation

- Crosslinkers for acrylamide gel preparation:

  Le bis-Acrylamide est les crosslinker le plus largement utilisé pour réticuler (crosslinker les chaînes d'acrylamide) des gels d'électrophorèse. 2 crosslinkers alternatifs sont disponibles pour rendre les gels plus flexibles et résistants, diminuer le bruit de fond dans certaines colorations de gels/proteines

  - Bis-Acrylamide Solution 2% UP864965, 500ml Technical sheet (bis, PDA, DATP)

  - Piperazine Diacrylamide (PDA, BPD) 1A5041, 10g Structure du PDA Source Structure du DATP (118221):

    H2C=N\_N\_CH2

- N’ diallyltartardiamide (DATD) 118221, 50g
Un cross linker utile pour préparer les gels délectrophorèse en polyacrylamide. 

● Reducers for electrophoresis

**Tributylphosphine (TBP)**
CAS: CAS: 98-40-3; MW: 202.32
Agent réducteur utilisé pour la préparation d'échantillons protéiques en électrophorèse (IEF, 2D). La réduction suivie d'un alkylation par l'iodoacétamide améliore la résolution de séparation, permet de charger plus d'échantillon, et de visualiser des protéines très peu abondantes. Aussi utilisé comme catalyseur en synthèse organique (1,4-addition avec des disulfides pour la thioétherification des alcools; acylation pour préparer des esters actifs; hydroformylation of alkenes par le cobalt).

● Agaroses:
Agarose is usually used for nucleic acids electrophoresis, but some agarose types also provide nice analytical method for large proteins. See more in the Genomics catalog. [BD001c].

**AGAROSE, regular uses (Trial Size)**
31272L, 100g 31272L, 500g
New Electrophoresis X’PRESS Technology (NEXT GEL™)

The new generation of ultra-resolutive and ultra-rapid gels

Save time! Ready-to-use, in just ONE min!
- No stacking gel needed
- All-in-one Product: just add APS/TEMED then pour!
- 20X running buffer included

Highly resolutive and suitable for distant MW analysis!
- Resolve 14.2kDa proteins from 14.4 kDa proteins on one mini-gel
- Separate proteins ranging from 3.5kDa to 212 kDa on one non-gradient gel

Safe, stable and economic:
- Stable at room temperature for over 1 year
- Much less expensive than pre-gradient gels!

The unique matrix of NEXT GEL™ proprietary chemistry slows the migration of proteins, eliminating the need of a stacking gel. It has gradient-like properties, which enables the separation of small peptides and high molecular weight proteins in the same gel – match or exceeds resolution of pre-cast gradient gels! It also permits the proteins to run across a longer gel surface resulting in increased resolution.

This system is fully compatible with all standard SDS-PAGE, 1D and 2D equipments, and all downstream applications such as Western blots, protein sequencing, MALDI analysis, and common stain methods.

Beside the original format, the NEXT GEL™ family includes special formats dedicated to large proteins, large gels, native proteins and HTS applications. See below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Fine resolution range</th>
<th>cat.# / 100ml</th>
<th>cat.#/500ml (1)</th>
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<tbody>
<tr>
<td>Acrylamide based</td>
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<td>NEXT Gel™ original</td>
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<td>NEXT Gel 5%</td>
<td>50-200 KDa</td>
<td>GS4270</td>
<td>GS4271</td>
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<td>NEXT Gel 7.5%</td>
<td>20-100 KDa</td>
<td>GS4280</td>
<td>GS4281</td>
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<td>NEXT Gel 10%</td>
<td>10-70 KDa</td>
<td>BG6290</td>
<td>BG6291</td>
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<td>NEXT Gel 12.5%</td>
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<td>NEXT Gel 15%</td>
<td>5-40 KDa</td>
<td>GS4300</td>
<td>GS4301</td>
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<td>NEXT Gel Running Buffer, 20X</td>
<td>GS4310 (2)</td>
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<td>GS4311</td>
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<tr>
<td>NEXT Gel Trial Kit</td>
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<td>/ 1 kit (3)</td>
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<tr>
<td>Sprint NEXT Gel™</td>
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<td>Sprint NEXT Gel 10%</td>
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<td>CI3000-M312</td>
<td>CI3001-M312</td>
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<td>Sprint NEXT Gel 12.5%</td>
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<td>CI3010-M311</td>
<td>CI3011-M311</td>
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<td>TurboNEXT Gel™</td>
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<td>TurboNEXT Gel 7.5%</td>
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<td>DR9191-M323</td>
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<td>CI2980-M313</td>
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<td>CI2990-M310</td>
<td>CI2991-M310</td>
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<tr>
<td>Fluorescent SprintNEXT Gel™</td>
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<td>CN0250-M318</td>
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<td>Agarose based</td>
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<tr>
<td>Agarose NEXT Gel™</td>
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<td></td>
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<tr>
<td>LP-NEXT Gel™</td>
<td>1-3 000kDa</td>
<td>BI6150 / 1 kit (4)</td>
<td>-M272</td>
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<tr>
<td>HTS-NEXT Gel™</td>
<td></td>
<td>IU6350 / 1 kit (5)</td>
<td>-M281</td>
</tr>
<tr>
<td>Native NEXT Gel™</td>
<td></td>
<td>BI6140 / 1 kit (6)</td>
<td>-M271</td>
</tr>
</tbody>
</table>

Sprint NEXT Gel™ cast and polymerize a 10x10x0.75cm mini-gel in less that 15min, run in >30min!

Turbo NEXT Gel™ is optimized for larges gels: 16x16cm gels are cast in 2.5-3hours
**FluorescentNEXT Gel™** includes a fluorescent protein stains that allows to visualize proteins bands within 5min of UV illumination. The stain is compatible with downstream applications including Western blotting and 2-D electrophoresis.

**HTS- NEXT Gel™** allows for the analysis of 20 to 200 samples in one to two hours, using SDS PAGE standard horizontal gel apparatus.

**LP- NEXT Gel™** is optimized for the separation of SDS-denatured proteins between 0.2 and 6.4 megadaltons. It is provides with optional fluorescent stain.

**Native NEXT Gel™** include a proprietary agarose blend and running buffer optimized for optimal resolution while maintaining native protein confirmation. It is optimized to analyse proteins while maintaining their native conformation. The agarose gel eliminates hazards concerns and simplifies recovery of the protein following electrophoresis.
GEBAGEL electrophoresis precast gels & runner system

An economic, easy-to-use horizontal electrophoresis system, with resolutive and cost-effective pre-cast gels

User-friendly protein electrophoresis system.
Easy-to-use: horizontal apparatus (deposit sample with standard pipette tips).
No special loading tips needed, agarose standard-loading tips used.
No leakage of running buffer from inner tank to the outer tank.
Running buffer saving, use 150 ml only, with the same standard Tris-glycine running buffer even for peptides
High resolution: sharper bands provide clear accurate results.
Multiple applications: proteins, peptides *
Cost-effective & 12-months shelf-life guarantee.

The GeBa Electrophoresis system is a novel semi dry horizontal pre-cast gel system. Each research can have its own electrophoresis units instead of sharing costly systems! The horizontal design simplify considerably handling procedure:
No more cumbersome assembly of the gel with the running apparatus.
Robust sample wells dividers eliminate damage when removing the comb and loading, and don’t deform or fall over.
Effortless cassette opening compared to competitor pre-cast gels.

The GeBa Electrophoresis system is a very versatile system, for protein, peptide as well nucleic acids!
Gels can be removed easily, stained, electroeluted for MS, or electrotransferred using standard membrane transfer buffer.

Comparison of GeBaGel system with standard pre-cast gel (vertical) electrophoresis systems:

<table>
<thead>
<tr>
<th>Competitors</th>
<th>GeBaGel system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode</td>
<td>Vertical</td>
</tr>
<tr>
<td>System assembly</td>
<td>Assembly is awkward and need skill</td>
</tr>
<tr>
<td>Sample loading</td>
<td>Need skill, special loading tips</td>
</tr>
<tr>
<td>Leakage possibility</td>
<td>Exists from time to time</td>
</tr>
<tr>
<td>Volume of buffer / run Protein Peptide</td>
<td>500ml costly buffers (MOPS, MES, HEPES)</td>
</tr>
<tr>
<td></td>
<td>costly Tricine or MES buffer</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Home made gels</th>
<th>Pre-cast gels pH8.7</th>
<th>Pre-cast gels pH7</th>
<th>GeBaGels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Resolution</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Reproducibility</td>
<td>+</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Cost</td>
<td>1-2€/gel for reagents =&gt;1H working time* (250-7€ for 100gels)</td>
<td>Expensive (8-12€/gel)</td>
<td>Expensive (11-15€/gel)</td>
</tr>
<tr>
<td>Ease of use</td>
<td>++</td>
<td>++</td>
<td>++</td>
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<tr>
<td>Applications</td>
<td>Proteins, Peptides</td>
<td>Proteins</td>
<td>Proteins</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Proteins, Peptides,DNA, RNA</td>
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Wells Volume

<table>
<thead>
<tr>
<th>1+(1) wells</th>
<th>1+(1)-1 wells</th>
<th>10 wells</th>
<th>15 wells</th>
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<tbody>
<tr>
<td>250+(10) µl</td>
<td>100+(10)+100 µl</td>
<td>40 µl</td>
<td>25 µl</td>
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CHANGER LES REF ! ex BI9720 -> BI9725

<table>
<thead>
<tr>
<th>GeBaGel (Tris-Glycine)</th>
<th>1+1 wells</th>
<th>1+1-1 wells</th>
<th>10 wells</th>
<th>15 wells</th>
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<tbody>
<tr>
<td>7% GeBaGel</td>
<td>DZ3841</td>
<td>DZ3901</td>
<td>UVA830</td>
<td>RC7582</td>
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<tr>
<td>10% GeBaGel</td>
<td>DZ3851</td>
<td>DZ3911</td>
<td>BI9605</td>
<td>RC7592</td>
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<tr>
<td>12% GeBaGel</td>
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<td>DZ3941</td>
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<td>UVA840</td>
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<td>15% GeBaGel</td>
<td>DZ3891</td>
<td>DZ3971</td>
<td>BI9715</td>
<td>UVA850</td>
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<tr>
<td>4-12% GeBaGel</td>
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<td>DZ3961</td>
<td>RC7732</td>
<td>RC7602</td>
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<tr>
<td>8-16% GeBaGel</td>
<td></td>
<td></td>
<td>RC7622</td>
<td>RC7612</td>
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<tr>
<td>4-20% GeBaGel</td>
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</table>

<table>
<thead>
<tr>
<th>GeBaGel (TBE-Urea)</th>
<th>1+1 wells</th>
<th>1+1-1 wells</th>
<th>10 wells</th>
<th>15 wells</th>
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<tbody>
<tr>
<td>6% GeBaGel TBE-Urea</td>
<td>RC7642</td>
<td>RC7660</td>
<td>DZ4050</td>
<td>DZ4080</td>
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<td>12.5% GeBaGel TBE-Urea</td>
<td>RC7650</td>
<td>RC7670</td>
<td>DZ4060</td>
<td>DZ4090</td>
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InterBioTech ‘Protein Electrophoresis Catalog’ [BB194c] p.5/20

211 bis Av. J.F. - BP 1140 03103 Montluçon Cedex - Tel. 33 (0) 4 70 03 88 55 - Fax 33 (0) 4 70 03 82 60
e-mail interchim@interchim.com - web www.interchim.com
ExpressPlus™ PAGE precast Gels

Long shelf life, short running time, large loading volume, and high transfer efficiency.

ExpressPlus™ PAGE Gels are upgraded from Express PAGE Gels with a shorter running time, larger loading volume, higher transfer efficiency, and most important – better price. The ExpressPlus™ PAGE Gels are cast in a weak acidic pH environment that minimizes the hydrolysis of polyacrylamide and results in extra gel stability and superior band resolution.

The ExpressPlus™ PAGE Gels are available in gradient (4-20%, 4-12%, and 8-16%) and fixed (8%, 10%, and 12%) concentrations and in 10 well, 12 well and 15 well formats. Gel cassette size: 100 x 85.4 x 4.7 mm (L x W x T), Gel size: 80 x 70 x 1 mm (L x W x T).

Request free sample package (Two 4-20% 12 well gels, MOPS buffer powder and adapters for Invitrogen Novex® gel tanks)
1 Unit = 20 Gels + Free Pre-mixed MOPS buffer

Features & Benefits

- **Bis-Tris Gels:**
  Weak acidic pH environment, minimizes protein modifications and significantly delays acrylamide hydrolysis.

- **Easy to Use:** Simple to set up, special loading tips not required.

- **Large Loading Volume:**
  Upgraded loading volume (up to 80 µl)

- **High Resolution:**
  Proprietary gel casting technique, high-resolution separation of protein bands.

- **High Reproducibility:**
  Consistent performance from gel to gel.

- **Long Shelf Life:**
  Up to 12 months if store at 2-8 °C.

- **Compatible Cassette Design:**
  Compatible with most mini-gel tanks, adapters are included for Invitrogen Novex® Mini-Cell tank.

- **Complimentary MOPS powder:**
  Good for 1 L MOPS buffer, convenient package.

---

### Product ordering information

<table>
<thead>
<tr>
<th>cat. number</th>
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<tbody>
<tr>
<td>M42010</td>
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<td>M42012</td>
<td>M41212</td>
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<td>M42015</td>
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### Accessory reagents

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<tr>
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<tr>
<td>MB01015</td>
<td>5 ml</td>
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<tr>
<td>M00138</td>
<td>5/PK</td>
</tr>
<tr>
<td>M00139</td>
<td>10/PK</td>
</tr>
</tbody>
</table>

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### Others available Electrophoresis Gels products

- **RunBlue Bis - Tris Protein precast gels**: no more fear to break gels, with higher quality electrophoresis protein gel.
- **CosmoPAGE precast gels**: very consistent and compatible with standards electrophoresis systems.

Ask for iPAGE precast gels and electrophoresis system.

See more products in the [Electrophoresis Gel Matrices Web Page](#)
Electrophoresis Running reagents

■ Protein Molecular size markers:

Molecular Weight protein markers are used as standards in gel electrophoresis (PAGE) to determine the molecular size of analysed protein samples. These are often pre-stained for visualizing the electrophoresis running process and for convenient reading whatever the gel staining is (i.e. staining of glycosides (PAS) or phospho groups ). Interchim Biosciences provide standard blue MW markers for routine/economic uses, and colored proteins that ease reading of multiple markers, as well a marker that include a control for blotting with ECL detection.

● Protein MW markers for Electrophoresis

**BLUeye Prestained Protein Ladder (12 bands - 10-245 KDa)**

FO9810, 500 µl (>100 tests)

Ready-to-use MW protein markers (in loading buffer) with 2 colored reference bands and 10 blue bands [11 KDa, 17 KDa, 20 KDa, 25 KDa (Green), 35 KDa, 48 KDa, 63 KDa, 75 KDa (Red), 100 KDa, 135 KDa, 180 KDa, 245 KDa]. Technical sheet

**Wide Range Molecular Weight standard (8 bands 14.4 – 212 KDa)**

BB7080 500 µl

Contains 6 protein bands of 212, 116, 97.4, 66.2, 45.0, 31.0, 11 KDa (Green), 17 KDa (Red), 20 KDa, 25 KDa (Green), 35 KDa, 48 KDa, 63 KDa, 75 KDa (Red), 100 KDa, 135 KDa, 180 KDa, 245 KDa.

**Low Range Protein MW marker 31-3.5 KDa**

587231, 200 µl

Contains 6 protein bands of 31, 20.4, 16.9, 14.4, 6.1, 3.5 KDa.

**Precise Molecular Weight standard (7 bands 15.0 – 150 KDa)**

N14020 200 µl

Contains 6 protein bands of 15, 25, 35, 50, 75, 100 and 150 KDa recombinant proteins, providing convenient intervals. In loading buffer. 800 µg/ml. Technical sheet

**Coolored™ MW markers proteins (19.5-213 KDa)**

L771512, 500 µl

8 colored MW markers: 213 KDa (Orange minor), 144 KDa (Orange major), 82 KDa (Blue), 61 KDa (Blue), 45 KDa (Green), 34 KDa (Violet), 26.5 KDa (Blue), 19.5 KDa (Green).

Further descriptions of these products and more MW products here.

See also on-line:

**Blueaqua Prestained Protein Ladder (10 - 170 KDa, 11 Bands)**

Technical sheet

PM009-050, 500 µl PM009-0500E, 5x500 µl Pink Plus Prestained Protein Ladder (10 - 175 KDa, 3 Reference Bands: 10, 40 And 90 KDa)

PM005-0500, 2x250 µl PM005-0500E, 5x500 µl

A wide selection of prestained and unstained molecular weight standards for SDS-PAGE and Western Blot

**Smart Advanced Broad-Range Protein Standard**

M00441, 250 µl

**Smart Dual Color Pre-Stained Protein Standard**

M0044, 250 µl

**Smart Multi Color Pre-Stained Protein Standard**

M0043, 250 µl

**PAGE-MASTER Protein Standard (for SDS-PAGE)**

M00516, 500 µl

**PAGE-MASTER Protein Standard Plus**

MM1397-500, 500 µl

+ see below MW for WBlotting

**Blue protein Markers, High MW range (14.4-97.4 KDa)**

67275A, 500 µl

Blue ready-to-use pre-stained protein molecular weight markers, 14.4/20.1/29/43/68/97.4 KDa. Technical sheet

**Low range molecular weight range (23.86-43 KDa)**

82673A, 500 µl

Blue ready-to-use pre-stained protein molecular weight markers, 23.86/6.5/14.4/20.1/29/43 KDa. Technical sheet

**Pro-Stain Protein MW Markers, Blue/Violet stained (9-198 KDa/9 bands)**

MP2940, 250 µl

**Pro-View Protein MW Markers, for Western Blots (16-215 KDa/8 bands)**

1E7370, 250 µl

**Protein molecular weight markers**

FQ2520

Contains β-Galactosidase (116 KDa), Phosphorylase b (97.4 KDa), BSA (66.2 KDa), Alcohol Deshydrogenase (28.5 KDa), Carbonic anhydrase (28.5 KDa), Myoglobin (18.4 KDa), Lysozyme (14.0 KDa).
Protein MW markers with detection system for Western-Blots

**WB-MASTER Protein Standard**

M00521, 250 μl

B-MASTER Protein Standard is designed for convenient protein identification in western blot. This standard consists of seven recombinant proteins with molecular weight of 20 kDa, 30 kDa, 40 kDa, 50 kDa, 60 kDa, 80 kDa and 120 kDa. Each of the proteins contains an IgG banding site that is able to bind to primary or secondary antibodies derived from a wide range of host species. The standard thus enables direct visualization of both the protein marker and user’s samples on the same western blot membrane without any additional reagents.

The apparent molecular weights of its seven protein bands are 20 kDa, 30 kDa, 40 kDa, 50 kDa, 60 kDa, 80 kDa and 120 kDa. Recommended loading volume: 2.5-10 μl per well.

**WB-MASTER Protein Marker for Fluorescent Western Blotting**

M00124, 100 Lanes

This protein marker is designed for convenient protein band identification in fluorescent Western Blotting. It is a lyophilized mixture of five recombinant proteins that are able to bind to primary and/or secondary antibodies derived from a wide range of host species. It thus enables direct visualization of both the protein marker and users’ samples on the same western blot membrane without any additional reagents.

The apparent molecular weights of its five protein bands are 22 kDa, 40 kDa, 60 kDa, 85 kDa and 120 kDa. Recommended loading volume: 2.5-10 μl per well.
Buffers for other electrophoresis techniques
See buffers in sections 'Capillary electrophoresis'.

Others available Electrophoresis Buffers products
See Buffers for capillary electrophoresis in the 'Capillary Electrophoresis' section.
See more products in the Electrophoresis Buffers Web Page.

Capillary electrophoresis
Search also in the Capillary Electrophoresis Web Page.

Western-Blotting
See more products in the Electrophoresis/Blotting Web Page.
## Protein gel Staining

### Overview

<table>
<thead>
<tr>
<th>Product</th>
<th>Method</th>
<th>Sensib.</th>
<th>Easy</th>
<th>Downstream applications</th>
<th>cat.#</th>
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</thead>
<tbody>
<tr>
<td>LavaPurple Protein Gel &amp; Blot stain</td>
<td>Fluo Rev.</td>
<td>+++</td>
<td>++</td>
<td>1h30 (45min/blots)</td>
<td>Any/Blot</td>
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<tr>
<td>Lumitein Protein Gel stain</td>
<td>Fluo</td>
<td>+++ng</td>
<td>+++</td>
<td>1hour</td>
<td>MS, Seq</td>
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<tr>
<td>ProLuma Protein Gel stain</td>
<td>Fluo</td>
<td>++</td>
<td>+++</td>
<td>15min</td>
<td>MS, Seq</td>
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<tr>
<td>SilverBullit Protein Gel stain</td>
<td>Chrom.</td>
<td>+++ng</td>
<td>***</td>
<td>1hour</td>
<td>almost any appl. (+electroelution)</td>
</tr>
<tr>
<td>CooBlue Protein Stain</td>
<td>Chrom. Rev.</td>
<td>++</td>
<td>***</td>
<td>1hour</td>
<td>Any</td>
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<tr>
<td>ProSave™ Protein Gel stain</td>
<td>Chrom. Rev.</td>
<td>++/+++</td>
<td>++</td>
<td>5-10min</td>
<td>Any</td>
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</tbody>
</table>

Other standard stains are available as powders. See below.

### CooBlue™ Protein Gel stains

*Our quick and easiest coomassie protein gel stain: do not destain!*

- Hands-Off! Stain and read directly (no destaining)
- High Sensitivity, below 10-20 ng of Protein per Band
- Compatible with further analysis of gel (silver staining) or proteins (MS)
- Safe and environment friendly: No More Methanol nor Acetic Acid!

CooBlue Instant Stain is a superior alternative to traditional Coomassie Blue staining procedures, based on a colloidal formulation. Environmentally friendly, this ready-to-use stain does not contain methanol and acetic acid and does not require hazardous solvents for destaining. The protein bands are directly visible during the staining process. Water yields clear background, allowing optimal sensitivity. There is no need for multistep ssie stainings. The simple “hands-off” staining/destaining procedure saves valuable time ials and solvent waste in your laboratory.

#### CooBlueFX Protein Gel stain

1 kit provides sufficient quantity of 2 solutions (a sensitizer and a developing) to stain 20-25 minigels.

1 kit provides sufficient quantity of 2 solutions (a sensitizer and a developing) to stain 20-25 minigels.

#### CooBlue Native Protein Gel stain

1 kit provides sufficient quantity of 2 solutions (a sensitizer and a developing) to stain 20-25 minigels.

#### Dispensing Pump

Fits to CooBlue containers of 4.5L, and deliver a 20ml dose by pressing a button.
■ Silver Bullit™ protein gel stain

### Silver Staining & Destaining Kit

M335, 1 Kit
Contains one Silver Bullit™ Staining kit, and one Silver Subtract Destaining Kit.

### Silver Bullit™ - Silver Stain Kit

M227, 1Kit

**Kit includes** (sufficient for 50 mini-gels):
- Silver Stain, 10X, 250 ml
- Sensitizer, 10X, 250 ml
- Developer, 5X, 250 ml x 2

30min and 4HR procedures. [Technical sheet](#).

- Ultra-sensitive protein detection with clear background
- Mass spectrometry compatible
- Liquid concentrates for convenient reagent preparation

### Silver Subtract™ - Silver Destaining Reagent

M322, 1 Kit
Contains (sufficient for 12 mini-gels):
- Silver Subtract Solution A 25X (25 ml)
- Silver Subtract Solution B 25X (25 ml)

**Description**

The Silver Staining – Destaining Kit combines for convenience the Silver Bullit™ Silver Stain Kit and Silver Subtract™ Silver Destaining Reagent.

Proteins can be detected in polyacrylamide gels with high sensitivity and nearly undetectable background using Silver Bullit™ Silver Stain Kit. The kit's colorimetric staining procedure allows detection of subnanogram levels of protein, and is 100-fold more sensitive than Coomassie® Blue staining. This product is ideal for visualization of proteins present in trace levels on a gel. Fast staining procedure takes only 30min. The highest sensitivity procedure lasts 4HR.

Gels stained with Silver Bullit™ or any other silver staining product can be completely destained with Silver Subtract™ Silver Destaining Reagent. It is an excellent kit for the removal of silver ions before re-staining with silver stain. Silver Subtract™ is also compatible with subsequent visualization of the gel with fluorescent or chemiluminescent stains, or with chromogenic stains such as Coomassie® Blue. Partial destaining can also be achieved with less dilute reagents to remove high background, reduce staining of overloaded gels, or remove artifacts and uneven background. Gels re-stained after using Silver Subtract™ do not exhibit a decrease in band intensity or increase in background.

Also available:
- other silver stains

### Silver Gel Stain

CE1980, 20 tests
One kit is sufficient to stains 20 minigels. Sensitivity: 0.3ng BSA, 2h-2h30 procedure. Compatible with MS. [Technical Sheet](#).

### Silver Stain MS Kit

BI9791, 20tests
Sensitivity: 1ng protein, 1hr-20

- silver powders

<table>
<thead>
<tr>
<th>SILVER NITRATE</th>
<th>084961-0377, 25g</th>
<th>084962, 100g</th>
<th>084963, 500g</th>
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</thead>
<tbody>
<tr>
<td>SILVER NITRATE, Proteomics grade</td>
<td>08496Q-M122, 25g</td>
<td>08496R, 100g</td>
<td>08496S, 500g</td>
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<td>SILVER NITRATE, MolBio grade</td>
<td>151681, 25g</td>
<td>151682, 100g</td>
<td></td>
</tr>
</tbody>
</table>

UN: 1483

99% pure

■ One-Step™ Protein Gel Stains

**Ready-to-use, one step protein gel staining solutions!**

- Low-cost, rapid, non-toxic protein gel stains.
- Alternative to tedious Coomassie staining.
- No fixing or washing required.
- Entirely aqueous-based for easy disposal.
- Fully compatible with mass spectrometry and Edman-based sequencing.

One-Step Blue™ stained proteins are detected by visible blue staining or by near-infrared fluorescence.

One-Step Lumitein™ is a sensitive red fluorescent gel stain, for protein detection using a UV transilluminator or laser gel scanner.

One-Step Lumitein™ UV gel staining requires only a single 5-30 minute staining step without fixation.
ProLuma™ protein gel stain
Fast fluorescent staining or proteins in gels...

Simple & Fast procedure
Staining consists of a simple 20 minute incubation with no need for washing and destaining steps, followed by a UV transillumination for 3-5 minutes. Since the unbound probe does not fluoresce, the protein bands appear bright white against a dark background.

Sensitive
The sensitivity is similar to Coomassie® Blue although the staining intensity of individual proteins will vary. Membrane and hydrophobic proteins tend to stain with greater intensity while some proteins such as BSA have reduced intensity.

Compatible with existing instruments, and with downstream applications
Gels can be documented with an image analyzer or Polaroid® photography. Compatible with Western Blotting and 2-D electrophoresis – but may impact downstream amino acid analysis such as MALDI or sequencing.

Economical
Down 0.2€/minigel!

- ProLuma™ protein gel stain, 20X CF8590, 10mL CF8591, 125mL
Contains 20X Proluma solution (to dilute with 50%MeOH 10% Acetic acid), sufficient to stain ca 125 min gels
- Lumitein™ protein gel stain

- **Highly Sensitive**
  At least as sensitive as silver stain by detecting as little as 1 ng or less protein.

- **Extremely Simple & Fast Staining**
  Fixation and staining is a single combined step. Use the 30-min Rapid Protocol for excellent result, or the 90-min Basic Protocol for the ultimate sensitivity; no overstaining with longer staining time.

- **Excellent Compatibility with Existing Instruments**
  Can be used with either a simple UV-box (designed for DNA gel viewing), a Dark Reader, or a high-end laser scanner (See Figure 2 for spectra).

- **Wide Linear Detection Range**
  At least three orders of magnitude.

- **Perfectly Compatible with Downstream Analysis**
  Compatible with MS and sequencing.

- **Economical**
  The 100X concentrated solution reduce manufacturing and shipping costs (both the 100X and the 1X solutions)

---

**Figure:** Linear detection range of Lumitein for 4 different proteins. Various amounts of each protein were separated via SDS-PAGE. Gel images were taken by GE Typhoon Trio gel scanner using 532 nm excitation and 610BP30 emission filter. The bands were quantitated using ImageQuant volume analysis. Log luminescence intensity was plotted against log protein amount per band for each protein.

Lumitein Protein Gel Stain, 100X

Lumitein Protein Gel Stain, 1X

CJ5260, 2mL 100X

CI8760, 200 mL 1X

CJ5261, 10 mL 100X

CI8761, 1L 1X

CJ5262, 50 mL 100X

CI8762, 5x 1L

- UV excitation maximum at around ~280 nm
- Broad visible excitation centered around ~450 nm
- Emits bright red fluorescence at around ~610 nm.
LavaPurple™ protein gel & blot stain

The most versatile and sensitive protein stain for gels AND blots, with superior results for proteomics requirements

- **Ultimate Sensitivity**: detect as low as 50pg
- Low protein to protein variability – excellent for glycoproteins
- High signal to noise
- **Safer** to use & simpler to dispose of (biodegradable - not heavy metals)*
- **Simple and quick**: 1h30 (gels) or <45min (blots)
- Suits automated high throughput systems

**Gel staining applications**
- Linear quantitation over 4 orders of magnitude
- More compatible with sequencing or functional analysis, and mass spectrometry **:
- More real protein spots / less false positives on 2D gels
- Staining can be reversed easily
  - Multiplex compatible with DIGE (Cy™), Phosphoprotein (PQ), silver and Coomassie staining

**Blot staining applications**
- 16-Fold more sensitive than Rubys stains
- Works for all blots (WesternB., 2D, IEF)
- Low background and no speckling
- Compatible with MS** and Edman-based sequencing
- Compatible with functional analysis and Ab staining

**More compatible than competitor products:** see figure below

No heavy metals unlike Rubis and silver stains.

![Gel Staining Example](image1)

![Blot Staining Example](image2)

TotalProteinStain : 1076 spots
Rubys stain: 877 spots
Rat microsomal proteins focused in 17 cm pH 3 – 10 IPG strips and separated in large format 2D gels.

TotalProteinStain : Rubys stain:
Low molecular weight markers two-fold diluted from approximately 128–1 ng blotted to Hybond-P (PVDF) and stained with LavaPurple Total Protein Stain.
■ **Glycoprotein staining**

**Glycoprotein Staining Kit**  903470, 1 kit  
Green bands indicate specific, in-gel detection of phosphorylated proteins.  
For staining glycosylated proteins in polyacrylamide gels using the periodic acid-Schiff (PAS) method.  
Kit contains sufficient for: 10 mini gels (SDS-PAGE): 250mL reagent (1 bottle of liquid reagent + 2 dry), plus positive and negative control proteins (1mg each)  
Shipped Separately: Oxidation Reagent (2.5g powder to make 250mL), Reduction Reagent (1.25g powder to make 250mL), Positive Control (Horseradish Peroxidase, 1mg), Negative Control (Soybean Trypsin Inhibitor, 1mg)

■ **Phosphoprotein staining**

**Phosphoprotein Staining Kit**  Q57730, 1 kit  
Green bands indicate specific, in-gel detection of phosphorylated proteins.  
Staining is achieved by first hydrolyzing the phosphoprotein phosphoester linkage using 0.5 N NaOH in the presence of calcium ions. The gel containing the newly formed insoluble calcium phosphate is then treated with ammonium molybdate in dilute nitric acid. The resultant insoluble nitrophospho-molybdate complex is finally stained with the basic dye, Methyl Green Solution. The reagents in this kit hydrolyze the phosphoester linkage of phosphoserine and phosphothreonine. Phosphotyrosine is not hydrolyzed and cannot be detected with this kit.

■ **His Tagged gel detection**

**Fluorescent detection specific for histidine-tagged proteins directly on the gel**  
Detects down to 5.7 picomoles histidine-tagged protein  
Protein can be transferred after staining allowing Western-based detection, if necessary  
Stained gel can be further stained by CooBlue Coomassie or ProSave stains for a total protein profile determination.

**6xHis Protein Tag Stain Kit**  Q74710-24575, 1 kit  
Sufficient reagent to stain 10 PAGE mini-gels. Kit contains: 6xHis Protein Tag Stain (500 ml), 6xHis Protein Tag Developer (500 ml), Positive Control Lysate (0.5 ml), Negative Control Lysate (0.5 ml)  
Kit contains: 6xHis Protein Tag Stain (500 ml), 6xHis Protein Tag Developer (500 ml)/6xHis Protein Control Set 24572, 1 Kit  
Sufficient for 50-100 mini-gel lanes. Kit contains: Positive Control Lysate (0.5 ml), Negative Control Lysate (0.5 ml)
### Biochemicals for protein gel staining

#### Alcian Blue
For detecting glycoproteins on nitrocellulose and in PAGE gels.
Soluble in water; MW: 1298-1408; λabs.: 615-670 nm
- **Alcian Blue 8GX, high purity**
  - N12351 100 mg
- **Alcian Blue 8GX, Ultrapure**
  - N1235A 100 mg

#### Coomassie® Brilliant Blue R-250
For protein staining after electrophoretic separations (SDS-PAGE, Agarose, PVDF).
- More water soluble and more sensitive than the G-250 stain.
Soluble in water; MW: 825.99; λabs.: 585 nm
- **Coomassie® Brilliant Blue R-250, Biotech grade**
  - 115252, 5g
  - 115253, 10g
  - 115254, 25g
- **Coomassie® Brilliant Blue R-250, Proteomics grade**
  - 115252, 10g
  - 115253, 25g
  - 115254, 50g

#### Coomassie® Brilliant Blue G-250
Soluble in water. MW: 854.04;
- **Coomassie® Brilliant Blue G-250, Biotech grade**
  - 077582, 5g
  - 077583, 25g
  - 077584, 50g
- **Coomassie® Brilliant Blue G-250, Proteomics grade**
  - 11524A, 10g
  - 11524B, 25g
  - 11524C, 50g

#### Colloidal Coomassie Blue Protein Stain-Safe Stain

#### Congo Red
General protein stain for SDS-PAGE and agarose gels; also color stain for early diagnosis of amyloid deposition.
Soluble in water; MW: 696.67; λabs.: 610 nm
- **Congo Red**
  - N12511 1 g
  - N12513 100 g

#### Eosin Y
Reversibly stain peptides and proteins following SDS-PAGE; used for protein recovering and MS characterization.
Soluble in DMSo/DMF; MW: 691.88; λabs.: 517 nm
- **Eosin Y**
  - 12504A 1 g
  - 12504C 100 g

#### Fast Green FCF
General protein stain for native PAGE, SDS-PAGE and particularly useful for IEF gels.
Soluble in DMSo/DMF; MW: 808.86; λabs.: 622 nm
- **Fast Green FCF, Ultrapure**
  - 648891 1 g
  - 648891 50 g
  - 648891 100 g

#### Hydrazide conjugated labels
Hydrazide conjugated labels (biotin, fluorophores,...) can be used to label glycoproteins via periodate oxidation/reductive amination. Please see corresponding description in section "Labeling".
- Biotin-PEO-Hydrazine
  - BJ008A
- SulfoRhodamine101 Hydrazid
  - FP-AY7720
- FluoProbes® 6547-Hydrazide
  - FP-BP5530
- FTSC
  - FP-47552A

#### Nile red
General protein stain for native PAGE, SDS-PAGE and IEF gels, direct blotting, sequencing.
Fluorescent polarity probe for protein structure and configuration.
Soluble in DMSo/DMF; MW: 318.37, λexc/λem.: 552/636 nm
- **Nile red**
- **Oil Red O**
Lipid/lipoprotein stain on cellulose acetate
Soluble in DMSo/DMF; MW: 408.51; λexc: 518 nm
- **Oil Red O (Sudan Red 5B).**
  - N13001 100 g
- **Oil Red O**
  - N13002 250 g
- **Oil Red O - Ultrapure**
  - N13005 1 g
- **Oil Red O - Solution**
  - AQ3890 100 tests

#### Ponceau S
Rapid reversible protein stain on nitrocellulose, cellulose acetate and PVDF membranes.
Soluble in water; MW: 790.52; λabs.: 520 nm
- **Ponceau S**
  - 050268 50 g
  - 050269 100 g
  - 05026A 1 g
- **Ponceau S - Ultrapure**
  - 200785 50 ml
- **Ponceau S - Concentrate**
  - 200786 500 ml

#### Silver Nitrate
Silver Nitrate, Proteomics grade 08496Q, 25g
MW: 169.87; CAS [7755-84-8]. Widely used for electrophoresis gel staining
- **Silver Nitrate**
  - 08496R, 100g
  - 08496S, 500g

Please see the **Cell Stains** catalogue for descriptions of most the following products (dyes).
Crack-Free kit is based on a unique solution and cellophane sheets, which together regulate the rate of water released from the gel to ensure crack-free gel of up to 20% polyacrylamide content. Crack-free allows drying polyacrylamide gels without cracks for fluorography, densitometry, autoradiography and permanent storage.

- Suits native and denatured (SDS or urea) 4-20% PAGE gels

<table>
<thead>
<tr>
<th>Crack-Free Kit</th>
<th>U50450 -1kit</th>
<th>U50451 -1kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reagent</td>
<td>500 ml 4X</td>
<td>500 ml (1X)</td>
</tr>
<tr>
<td>Cellophane sheets (20 x 20 cm)</td>
<td>20u</td>
<td>10u</td>
</tr>
<tr>
<td>Number of gels (midi [20 x 20 cm] / mini [10 x 10 cm])</td>
<td>20/40u</td>
<td>5/10u</td>
</tr>
</tbody>
</table>

Elimination of Staining solutions

Uptima DY-capt destaining bags

DY-capt destaining bags provide a fast yet efficient and cost-effective method to de-stain gels. The special absorbant mixture efficiently absorbs on the bag the dye molecules that are leaching from the stained gel in the destaining buffer. With protein gels for example, it absorbs the Coomassie Blue from the destaining solution, leaving only the protein bands stained in gel. Hence,
- destaining is speeded up and there is no need to change the destaining solution; you save destaining solution!
- destaining solutions can be re-used for next gel stainings: you save destaining solution!

Additionally, DY-capt destaining bags are biodegradable and require no special disposal unless contaminated with radiolabeled or other hazardous substances. With nucleic acid gels for example, they safely remove dangerous dyes such as Ethidium Bromide from solutions. Hence,
- destaining solution does not need to be disposed off according costly regulated ways
- concentrate toxic material can be disposed off more economically (incineration or other mean according local rules).

- High binding capacity (>5mg Ethidium Bromide by bag)
- Made of material that is easily disposed off in incinerated trash
- convenient packaging
- minimize the exposure of research personnel to toxic material.

<table>
<thead>
<tr>
<th>DY-Capt Destaining bags</th>
<th>988421, 25u</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each bag extracts up to 5 mg of Ethidium Bromide from solution.</td>
<td><a href="#">Technical sheet</a></td>
</tr>
</tbody>
</table>

Also available

<table>
<thead>
<tr>
<th>COZAP PADS, 76x76x2mm</th>
<th>746800, 25u</th>
<th>746801, 100u</th>
<th>746801B, bulk</th>
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</thead>
<tbody>
<tr>
<td>COZAP PADS, 38x76x2mm</td>
<td>746802, 100u</td>
<td>746803, 200u</td>
<td></td>
</tr>
</tbody>
</table>
**Electrophoresis apparatus**

**GEBAGel Electrophoresis System**

*An economic, easy-to-use horizontal electrophoresis system, with resolutive and cost-effective pre-cast gels*

- **User-friendly** protein electrophoresis system.
- **Easy-to-use**: horizontal apparatus (deposit sample with standard pipette tips).
- **No special loading tips needed**: agarose standard-loading tips used.
- **No leakage** of running buffer from inner tank to the outer tank.
- **Running buffer saving**: use 150 ml only, with the same standard Tris-glycine running buffer even for peptides.
- **High resolution**: sharper bands provide clear accurate results.
- **Multiple applications**: proteins, peptides *
- **Cost-effective & 12-months shelf-life guarantee.**

See description here of this genius GeBaGel electrophoresis system with the pre-GebaGel precast gels (BI9710). Each researchers can now have his own electrophoresis cuve !

* Also available:
  - IPAGE Gel Electrophoresis System  
  
  **eStain™ Protein Staining System**

Making protein gel staining faster, easier, cleaner and safer

- **Faster** - complete protein gel staining in 7 minutes or less
- **Easier** - hit button and run
- **Cleaner** - no solutions and buffers prepared
- **Safer** - unique formulation without methanol

A unique electric system combined with eStain™ Protein Staining Pad containing proprietary electrode buffers with Coomassie blue dye allows for very fast (7min) procedure. Suited various types of mini gels, including Tris-Glycine, Bis-Tris, Tris-Acetate and Tris-Tricine gels, the system is more convenient and saves 1h30 and up 6hours compared the SimplyBlue and BioSafe stains, and provides more consistant protein gel staining results.

<table>
<thead>
<tr>
<th>eStain™ Protein Staining Device</th>
<th>L02010, 1 unit</th>
<th>See <a href="PH-BB205g">full description</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>eStain™ Protein Staining Pads (R-250, 20-pak)</td>
<td>L02011, 1 box</td>
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</tr>
<tr>
<td>eStain™ Protein Staining Pads (G-250, 20-pak)</td>
<td>L02012, 1 box</td>
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<tr>
<td>eStain™ Graphite Electrode (10mm, 1-pak)</td>
<td>L02013, 1 unit</td>
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<tr>
<td>eStain™ Graphite Electrode (11mm, 1-pak)</td>
<td>L02014, 1 unit</td>
<td></td>
</tr>
<tr>
<td>eStain™ Graphite Electrode (12mm, 1-pak)</td>
<td>L02015, 1 unit</td>
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**Nbx instruments (Hoeffer) et accessoires ajoutables cher Harvard/Y55 (accord distrib 201505)**

| 680603 New | 2016,71 | SLAB GEL DRYER SYSTEM 50x40, COMPLETE |
| 680592 New | 1177,99 | SEMI-DRY BLOTTING SYSTEM 10x10cm |
| 683761 New | 1143,68 | SEMI-DRY BLOTTING SYSTEM 20x20cm |
| 680809 New | 1982,48 | VACUUM BLOTTER 115VAC 60hz 15 |
| 683128 New | 279,58 | CAPILLARY BLOTTING UNIT 28X26 |

**Capillary electrophoresis**

**A.C.E.™ Buffer and reagents**

See the genomics & MolecularBiology catalog.
Protein Sample preparation for electrophoresis

- **Protein preparation from complex samples**
  
  Extraction reagent and kits are provided for easy extraction of proteins from complex samples (cells suspension or tissues).

  See the section 'Extraction/Purification' for our large range of biochemicals –detergents, additives- ready-to-use buffers, extraction kits and purification techniques. Following are just some examples, and complementary product dedicated to 2D-electrophoresis.

  **Acid Labile Surfactants and Kits**
  See section 'Extraction/detergents'

  Unique “smart surfactants” that are acid cleavable so once their work is completed, can be quickly and efficiently degraded by acidifying the sample solution.

  **Cell Protein Extraction Kits**
  See section 'Extraction/detergents'

  - **Total Protein Cell Lysis Buffer**
    - DZ7320, 10ml (20 extr.)
  - **Cytoplasmic/nuclear Protein Enrichment Kit**
    - 884930, 1 Kit (20 extr.)
  - **Mitochondrial Protein isolation Buffer**
    - FN1202, 30ml (20 extr.)
  - **Protease Cell Lysis Kit, for bacterial and mammalian**
    - DO4440, 50ml
  - **TrioMol Isolation Reagent (Protein/RNA/DNA)**
    - QZ9950, 100 ml
  - **Yeast protein extraction reagent**
    - 821001, 200ml
  - **Inclusion Body solubilization reagent**
    - 922830, 100ml

- **Sample preparation kits for 2D-electrophoresis:**

  **2D sample preparation kit for insoluble proteins**

  rapidly remove salts, buffers and other small ionic contaminants from proteins that are more difficult to solubilize, including cell extracts containing larger and/or more hydrophobic proteins, proteins that tend to aggregate, and nuclear proteins for 2-D gel electrophoresis, maintaining protein solubility and improving recovery.

  **2D sample preparation kit for soluble proteins**

  rapidly remove salts, buffers and other small ionic contaminants from whole cell and tissue extracts as well as for fractionated proteins in which the proteins of interest are predominantly hydrophilic in preparation for 2-D gel electrophoresis, maintaining protein solubility and improving recovery.
Extraction of proteins from electrophoresis gels

**Electroelution** is an efficient to desalt, remove electrophoresis buffer or other purification buffers from nucleic acids, especially for small size DNA and RNAs. This can be achieved using the GebaFlex dialysis devices, or the Electroprep/FastDialyzer system, using your usual electric power supply.

See also the section ‘Extraction/Purification’ section.

**GebaGel Extraction kits (electroelution)** see in the ‘Dialysis’ section.

Device and buffers to perform electroelution in your usual horizontal electrophoresis tank.

**ElectroPrep Electroelution SYSTEM** see the presentation here

Convenient electroelution system for 10µl – 10ml samples using the FastDialyzer devices and your usual electric power supply.

**GPR 100 Electroelution SYSTEM** Inquire

Convenient electroelution system for 10µl – 10ml samples using the FastDialyzer devices and your usual electric power supply. Reduces the number of handling steps, resulting in higher sample yield with excellent reproducibility.

- **Related and accessory reagents for electroelution**

**Precipitation reagent (TCA)** BI2941, 20x21ml

A reagent to precipitate proteins by the TriChloracetic Method. Included in the electroeluction method using GeBFlex devices. [GebaFlex Tech Sheet]

**Precipitation reagent (KAc)** BI2943, 20x3ml

A reagent to precipitate proteins. Included in the electroeluction method using GeBaFlex devices. [GebaFlex Tech Sheet]

**CYCLO-PURE, Gel Extraction Kit** N15171

Cyclo-Pure Agarose Gel Extraction Kit is a fast, spin column-based kit for the quick isolation of DNA fragments (40 bp - 100 kb) from agarose slices. In just 10 minutes, ultra-pure DNA can be extracted that is ready-to-use in restriction enzyme digestion, labeling, ligation, transformation, in vitro transcription and sequencing protocols. All reagents are room temperature stable. Kit includes: Binding buffer, 40 ml, Wash Buffer, 50 ml, Spin Columns, 50, and Collection Tubes, 50. Contains sufficient material for 50 isolations. Compatible with standard agarose gels in TAE or TBE buffer. HTS procedure increases productivity. Technical Sheet

**GPR Electroelution Buffer (AALS buffer)** POA.GPR-020, 25mL

Use a unique acid-labile detergent.

**Other Electrophoresis products**

See also Electrophoresis Web Page