

Submerged  
Horizontal  
Electrophoresis

**Sub-Cell**<sup>®</sup> Systems



**Handcast or Precast**

Bio-Rad's Sub-Cell Family Gives You More Options



# Sub-Cell Essentials for the Total Solution

## Reload With ReadyAgarose™ Precast Gels

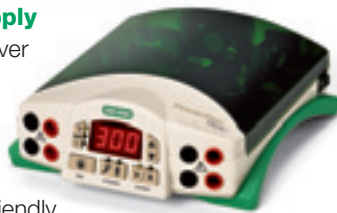
Sample separation has never been easier. ReadyAgarose gels are a complete line of individually packaged precast agarose gels. The UV-transparent tray that holds each gel locks into all Sub-Cell family systems except Models 96 and 192. These gels have been specifically designed to ensure handcast performance from precast gels. Choose from over 50 gel types that provide resolution of nucleic acids from 20 to 20,000 bp.

## Quantitation

Bio-Rad has a line of affordable quantitation instruments to suit your needs. Choose the affordable SmartSpec™ Plus spectrophotometer for fast, accurate quantitation of nucleic acids. Choose the flexible VersaFluor™ fluorometer for more sensitive nucleic acid quantitation.

## Power Your Sub-Cell System With the PowerPac™ Basic Power Supply

Four sets of output terminals deliver constant voltage or current with maximum outputs of 300 V, 400 mA, and 75 W. Both continuous and timed runs are easily programmed with a user-friendly interface, and the unit is lightweight and stackable. In addition, the vertical display is easily visible from shelf or bench level.

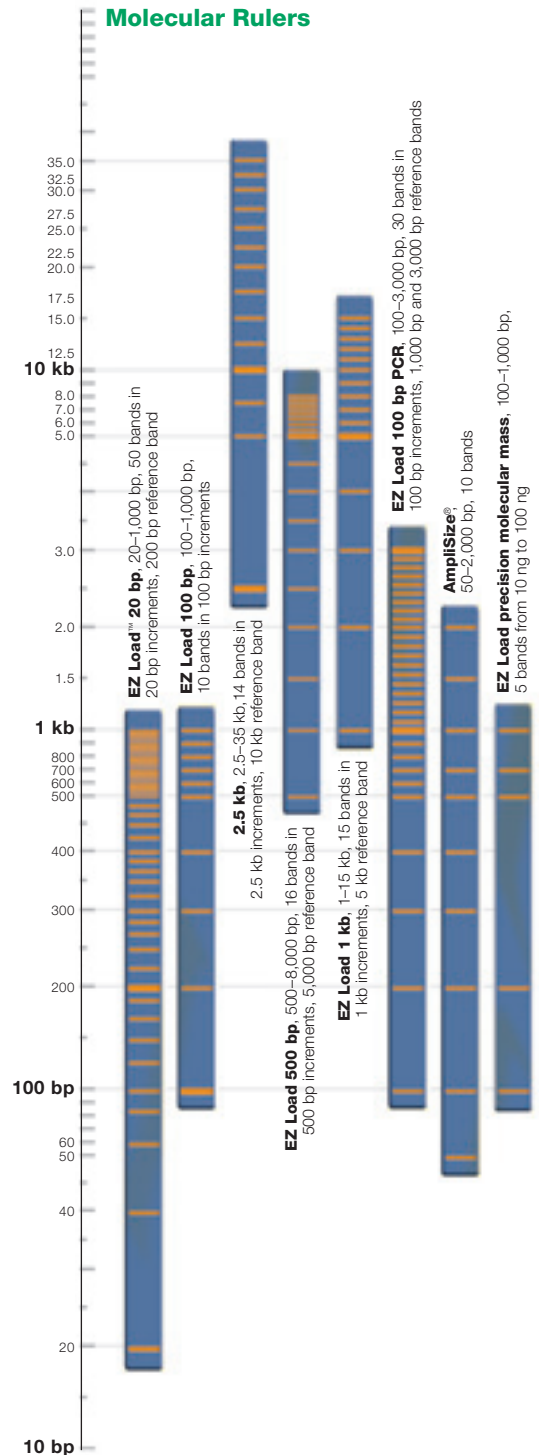


## Handcasting Reagents, Buffers, and Fluorescent Stains

Bio-Rad maintains a complete line of quality reagents for preparing custom handcast gels. From powdered agarose to premixed buffer solutions, Bio-Rad has it all.



Complete your nucleic acid electrophoresis analysis by using one of Bio-Rad's popular fluorescent stains. Choose ethidium bromide solution or tablets to visualize DNA. Choose our easy-to-use Radiant® Red fluorescent RNA stain for highly sensitive detection of RNA in denaturing agarose gels.



# A Sub-Cell System for Every Application

The Sub-Cell family of submerged horizontal electrophoresis systems from Bio-Rad is designed with you, the molecular biologist, in mind. To fulfill your needs, we've created electrophoresis cells that are remarkably advanced, versatile, and user-friendly.

## **Sub-Cell GT Systems Mean Flexibility**

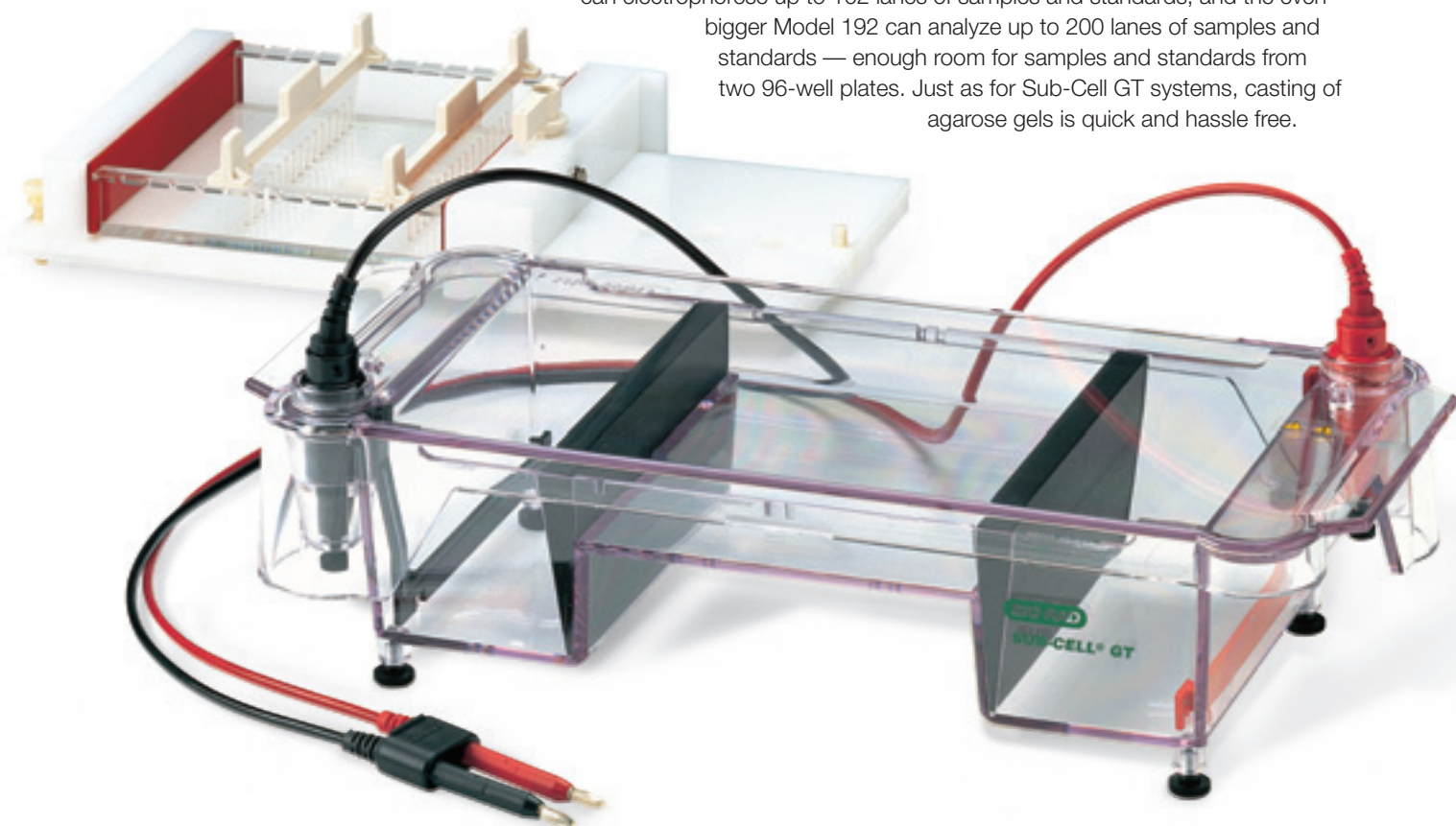
The compact Sub-Cell GT systems provide the utmost in versatility. Whether you need to separate just a few samples or up to 120, there's a Sub-Cell GT system just right for your application. Casting of agarose gels is quick and hassle free. But if you'd rather not cast your own gels, Bio-Rad's line of precast, easy-to-use ReadyAgarose gels fits Mini-Sub<sup>®</sup> cell, wide Mini-Sub cell, mini ReadySub-Cell™, wide mini ReadySub-Cell, and Sub-Cell GT systems.

## **ReadySub-Cell GT Systems Jump-Start Separations**

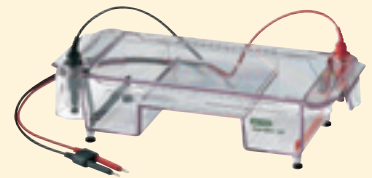
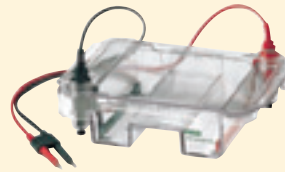
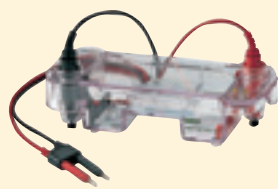
For the ultimate in streamlined operation and convenience, Bio-Rad offers the economical ReadySub-Cell GT systems in mini and wide mini formats. Ideal for simplified "run and reload" electrophoresis, ReadySub-Cell GT systems are dedicated to running ReadyAgarose precast gels.

## **Sub-Cell Models 96 and 192 Handle the Big Loads**

Designed to accommodate the fixed spacing of multichannel pipets, the Model 96 can electrophorese up to 102 lanes of samples and standards, and the even bigger Model 192 can analyze up to 200 lanes of samples and standards — enough room for samples and standards from two 96-well plates. Just as for Sub-Cell GT systems, casting of agarose gels is quick and hassle free.



## Bio-Rad Has a Sub-Cell System That's Right for You



### Convenient Sub-Cell Systems

#### Mini-Sub Cell GT System

Speed up your DNA separations using the Mini-Sub cell GT cell. The short, slim format allows 7 and 10 cm runs, making it a highly economical choice. Small DNA fragments can be separated in as little as 15 minutes. Up to 30 samples can be run simultaneously.

#### Mini ReadySub-Cell GT

The mini ReadySub-Cell GT cell is just like the Mini-Sub cell GT, except it is dedicated to running precast ReadyAgarose gels. This cell does not include casting gates, tray, or combs.

#### Wide Mini-Sub Cell GT System

Increase your sample capacity and run up to three times more samples than in other mini cells. The wide platform is ideal for fast screening applications. Up to 60 samples can be run simultaneously.

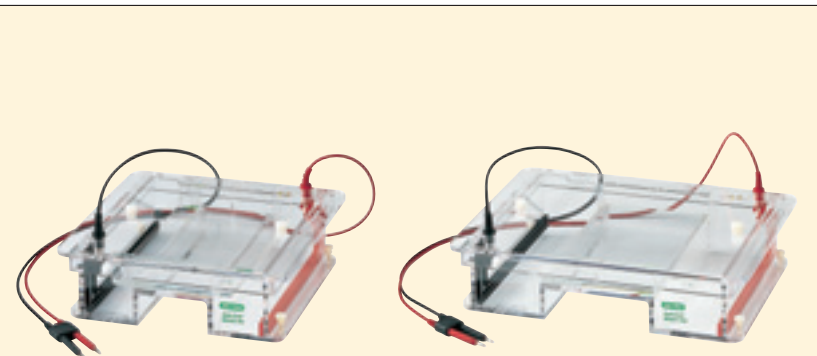
#### Wide Mini ReadySub-Cell GT

The wide mini ReadySub-Cell GT cell is just like the wide Mini-Sub cell GT, except it is dedicated to running precast ReadyAgarose gels. This cell does not include casting gates, tray, or combs.

#### Sub-Cell GT Cell System

The Sub-Cell GT cell offers the widest choice of gel lengths, comb types, and lane configurations of any Sub-Cell model. Separate 30 samples over a distance of up to 25 cm, or use four combs and analyze as many as 120 samples.

Gel sizes, cm (W x L)	7 x 7 (Mini-Sub cell GT only) 7 x 10 (both)	15 x 7 (wide Mini-Sub cell GT only) 15 x 10 (both)	15 x 10 15 x 15 15 x 20 15 x 25
Sample throughput	8–30* (Mini-Sub cell GT) 8 or 12 (mini ReadySub-Cell GT)	10–60* (wide Mini-Sub cell GT) 20, 32, or 2 x 32 (wide mini ReadySub-Cell GT)	1–120**
Base buffer volume, L	~0.27	~0.65	~1.0
Cell size, cm (W x L x H)	12 x 26 x 6.5	20 x 26 x 7.5	20 x 42 x 10
Distance to electrode, cm	14.5	14.5	29.5
Bromophenol Blue dye migration rates	4.5 cm/hr (at 75 V)	~4.5 cm/hr (at 75 V)	~3.0 cm/hr (at 75 V)



### High-Throughput Sub-Cell Models

#### Sub-Cell Model 96 Cell

Designed for high-throughput electrophoresis, the Model 96 cell can analyze up to 102 lanes of samples and standards. Combs are spaced to be compatible with multichannel pipets, making gel loading from a 96-well plate easy. Use the 26-well comb and shorter gel tray lengths for routine laboratory separations. Buffer recirculation ports ensure consistent performance for applications that require high voltages or extended runs.

#### Sub-Cell Model 192 Cell

The Model 192 cell has even greater sample capacity than the Model 96. The 25 cm extended gel length means that over 200 lanes are available for separations. This model is ideal for RFLP, Southern and northern blotting, and PCR sample screening.

25 x 10 25 x 15	25 x 10 25 x 15 25 x 20 25 x 25
24–96*	24–192**
~2.0	~3.0
29 x 30 x 9	29 x 40 x 9
22.0	32.0
~6.2 cm/hr (at 200 V)	~5.2 cm/hr (at 200 V)

\* Sample throughput value assumes 1–2 combs per gel.

\*\* Sample throughput value assumes 1–4 combs per gel.

## Features

### Sub-Cell systems have the features you want:

- Clear plastic construction for easy sample visualization
- UV-transparent gel trays with fluorescent ruler
- Lock-in design to run precast ReadyAgarose gels
- Gel-casting gates to cast your own gels right in the cell, or optional caster for tape-free casting†
- Combs to fit every need (multichannel pipet compatible; fixed-height drop-in combs; adjustable-height combs; preparative combs)†
- Buffer recirculation ports (Models 96 and 192 only)
- Easy-to-replace electrode cassettes

† Purchase separately for ReadySub-Cell GT systems.

## Applications

### Sub-Cell systems are ideal for all kinds of applications:

- PCR fragment analysis
- Restriction digest analysis
- DNA fingerprinting
- Northern and Southern blotting
- Microsatellite analysis
- Cosmid library restriction analysis
- RFLP analysis
- RAPD analysis

## Ordering Information

Catalog #	Description
<b>Sub-Cell GT Systems*</b>	
170-4406	Mini-Sub Cell GT System, with 7 x 7 cm tray
170-4466	Mini-Sub Cell GT System, with 7 x 10 cm tray
170-4486	Mini-Sub Cell GT System, with 7 x 7 cm tray, mini-gel caster
170-4467	Mini-Sub Cell GT System, with 7 x 10 cm tray, mini-gel caster
170-4487	Mini ReadySub-Cell GT System, includes Sub-Cell GT tank, lid, leveling bubble
170-4405	Wide Mini-Sub Cell GT System, with 15 x 7 cm tray
170-4468	Wide Mini-Sub Cell GT System, with 15 x 10 cm tray
170-4485	Wide Mini-Sub Cell GT System, with 15 x 7 cm tray, mini-gel caster
170-4469	Wide Mini-Sub Cell GT System, with 15 x 10 cm tray, mini-gel caster
170-4489	Wide Mini ReadySub-Cell GT System, includes Sub-Cell GT tank, lid, leveling bubble
170-4401	Sub-Cell GT System, with 15 x 10 cm tray
170-4402	Sub-Cell GT System, with 15 x 15 cm tray
170-4403	Sub-Cell GT System, with 15 x 20 cm tray
170-4404	Sub-Cell GT System, with 15 x 25 cm tray
170-4481	Sub-Cell GT System, with 15 x 10 cm tray, gel caster
170-4482	Sub-Cell GT System, with 15 x 15 cm tray, gel caster
170-4483	Sub-Cell GT System, with 15 x 20 cm tray, gel caster
170-4484	Sub-Cell GT System, with 15 x 25 cm tray, gel caster
<b>Upgrade Kits**</b>	
170-4491	Mini Handcasting Kit
170-4497	Wide Mini Handcasting Kit
<b>Quantitation</b>	
170-2525	SmartSpec Plus Spectrophotometer
170-2402	VersaFluor Fluorometer, 100/120/220 V, includes 1 standard cuvette holder, 100 standard cuvettes, and choice of 1 excitation and 1 emission filter
<b>Sub-Cell GT/PowerPac Basic Power Supply Systems***</b>	
164-0300	Mini-Sub Cell GT/PowerPac Basic System, 100/120 V
164-0301	Wide Mini-Sub Cell GT/PowerPac Basic System, 100/120 V
164-0302	Sub-Cell GT/PowerPac Basic System, 100/120 V

\* All Sub-Cell GT systems include casting gates and two 1.5 mm thick fixed-height combs: 15- and 20-well for Sub-Cell and wide Mini-Sub cell, 8- and 15-well combs for Mini-Sub cell.

\*\* Handcasting kits can be purchased to upgrade ReadySub-Cell systems to Mini-Sub or wide Mini-Sub cell systems. The kits include casting gates and 1.5 mm thick 8- and 15-well combs for mini ReadySub-Cell models or 15- and 20-well combs for wide mini ReadySub-Cell models.

\*\*\* All Sub-Cell GT/PowerPac Basic systems include the same accessories listed above and gel caster.

Catalog #	Description
<b>Sub-Cell Model 96 and 192 Systems†</b>	
170-4502	Sub-Cell Model 96 Cell, with 25 x 10 cm tray
170-4503	Sub-Cell Model 96 Cell, with 25 x 15 cm tray
170-4500	Sub-Cell Model 96 Cell, with 25 x 10 cm tray, gel caster
170-4501	Sub-Cell Model 96 Cell, with 25 x 15 cm tray, gel caster
170-4508	Sub-Cell Model 192 Cell, with 25 x 10 cm tray
170-4509	Sub-Cell Model 192 Cell, with 25 x 15 cm tray
170-4510	Sub-Cell Model 192 Cell, with 25 x 20 cm tray
170-4511	Sub-Cell Model 192 Cell, with 25 x 25 cm tray
170-4504	Sub-Cell Model 192 Cell, with 25 x 10 cm tray, gel caster
170-4505	Sub-Cell Model 192 Cell, with 25 x 15 cm tray, gel caster
170-4506	Sub-Cell Model 192 Cell, with 25 x 20 cm tray, gel caster
170-4507	Sub-Cell Model 192 Cell, with 25 x 25 cm tray, gel caster
<b>Sub-Cell Model 96 and 192/PowerPac Basic Power Supply Systems††</b>	
164-0305	Sub-Cell Model 96/PowerPac Basic System, 100/120 V
164-0306	Sub-Cell Model 192/PowerPac Basic System, 100/120 V
<b>DNA Size Standards</b>	
170-8351	EZ Load 20 bp Molecular Ruler, 20–1,000 bp, 100 applications
170-8352	EZ Load 100 bp Molecular Ruler, 100–1,000 bp, 100 applications
170-8353	EZ Load 100 bp PCR Molecular Ruler, 100–3,000 bp, 100 applications
170-8354	EZ Load 500 bp Molecular Ruler, 500–8,000 bp, 100 applications
170-8355	EZ Load 1 kb Molecular Ruler, 1–15 kb, 100 applications
170-8356	EZ Load Precision Molecular Mass Ruler, 100–1,000 bp, 100 applications
170-8200	AmpliSize Molecular Ruler, 50–2,000 bp, 50 applications
170-8205	2.5 kb Molecular Ruler, 2.5–35 kb, 100 applications
<b>Fluorescent Stains</b>	
170-3122	Radiant Red Fluorescent RNA Stain, 10 ml
161-0433	Ethidium Bromide Solution, 10 ml, 10 mg/ml
161-0430	Ethidium Bromide Tablets, 10 x 11 mg
<b>Premixed Buffers</b>	
161-0733	10x TBE, 1 L
161-0770	10x TBE, 5 L cube
161-0743	50x TAE, 1 L
161-0773	10x TAE, 5 L cube

† All Sub-Cell Model 96 and 192 systems include casting gates and a 51-well, 1.5 mm thick comb.

†† All Sub-Cell Model 96 and 192/PowerPac Basic systems include a gel caster and 25 x 10 cm tray (Model 96) or 25 x 15 cm tray (Model 192).

Practice of the patented polymerase chain reaction (PCR) process requires a license.

### ReadyAgarose Mini Gels

### ReadyAgarose Wide Mini Gels

TBE Gels	8-Well (20 µl)	12-Well (10 µl)	2 x 8-Well (20 µl)	20-Well (20 µl)	32-Well (15 µl)	2 x 32-Well (15 µl)
0.8%	161-3001	161-3007	—	161-3025	161-3031	—
0.8% plus ethidium bromide	161-3002	161-3008	—	161-3026	161-3032	—
1%	161-3003	161-3009	—	161-3027	161-3033	161-3037
1% plus ethidium bromide	161-3004	161-3010	—	161-3028	161-3034	161-3038
3%	161-3005	161-3011	—	161-3029	161-3035	161-3039
3% plus ethidium bromide	161-3006	161-3012	—	161-3030	161-3036	161-3040
TAE Gels						
0.8%	161-3013	161-3019	—	161-3041	161-3047	—
0.8% plus ethidium bromide	161-3014	161-3020	—	161-3042	161-3048	—
1%	161-3015	161-3021	161-3057	161-3043	161-3049	161-3053
1% plus ethidium bromide	161-3016	161-3022	—	161-3044	161-3050	161-3054
3%	161-3017	161-3023	—	161-3045	161-3051	161-3055
3% plus ethidium bromide	161-3018	161-3024	—	161-3046	161-3052	161-3056

Gel shelf life at room temperature: 12 months without ethidium bromide, 6 months with ethidium bromide.

For more information, contact your local Bio-Rad representative or call 1-800-4BIORAD (1-800-424-6723).

Visit us on the Web at [discover.bio-rad.com](http://discover.bio-rad.com)



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