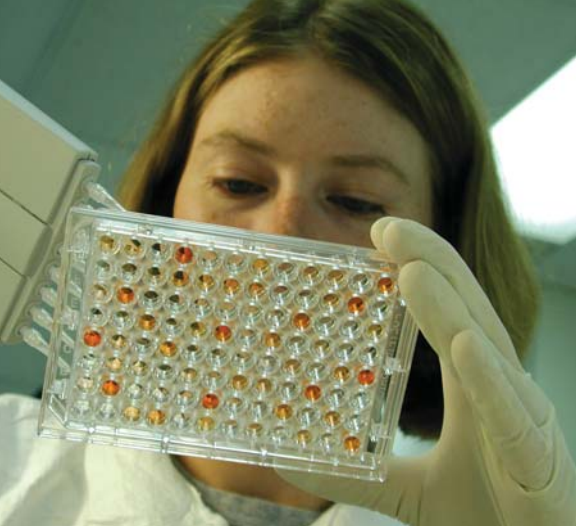


# bio-EUREKA

G Biosciences/Geno Technology Inc. St. Louis, MO. USA.

VOL. 3

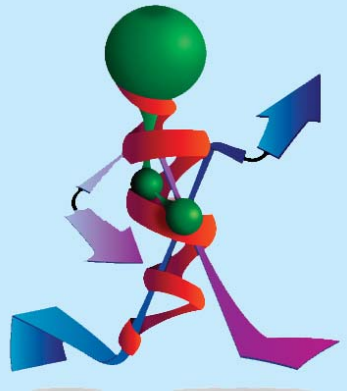


BIOSCIENCES<sup>®</sup>

*For  
All Your  
Proteomic  
Needs*



*For Innovative  
Genomic Products*



# SPECIAL OFFERS

## 10% OFF

### LYSIS BUFFERS

#### Protein Extraction & Lysis Buffers



- Extract total soluble protein
- Species Specific buffers available:
  - Bacterial-PE LB™
  - Yeast-PE LB™
  - Mammalian-PE LB™ for cells
  - Tissue-PE LB™ for animal tissues
- Extracts suitable for enzyme assays and Immunoassays
- 500ml Ready to Use solution

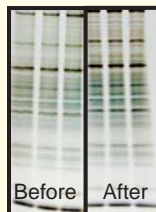
Cat. #	Description
786-177	Bacterial PE LB™
786-179	Yeast PE LB™
786-180	Mammalian PE LB™
786-181	Tissue PE LB™

Other lysis buffers are available, visit [www.GBiosciences.com](http://www.GBiosciences.com) in the Protein Extraction and Isolation section.  
Use quote # BE805-1 when ordering

All offers expire September 30, 2005

### PROTEIN CONCENTRATION UPPA-PROTEIN- Concentrate™

Rapid precipitation and concentration of protein solutions.



- ~100% Protein Recovery
- Remove non protein agents
- Concentrate as low as 1ng/ml
- Two Sizes Available
  - Micro for up to 10ml sample
  - Medi for up to 30ml sample

Cat. # 786-120 (Micro)  
Cat. # 786-121 (Medi)

Other concentration reagents are available, visit [www.GBiosciences.com](http://www.GBiosciences.com) in the Protein Concentration Tools section.  
Use quote # BE805-2 when ordering

All offers expire September 30, 2005

### GRINDING RESIN

#### EZ-Grind™

A Basic & Efficient Grinding Resin



- Supplied with:
  - 20 Tubes with 20 Matching pestles
- Ideal for protein and DNA extraction
- Resin does not bind protein or DNA

Cat. # 786-139

Many more sample preparation kits and reagents are available, visit [www.GBiosciences.com](http://www.GBiosciences.com) in the Sample Preparation section.  
Use quote # BE805-3 when ordering

All offers expire September 30, 2005

### SAMPLE PREPARATION

#### FOCUS™ Total Proteome

Tissue Protein Extraction & Lysis Buffer



- Extracts the entire proteome
- Membrane and soluble proteins
- Suitable for many tissues, including mammalian, plant, bacteria and yeast
- Suitable for 2D electrophoresis

Cat. # 786-246

Other specific proteome kits are available, visit [www.GBiosciences.com](http://www.GBiosciences.com) in the Sample Preparation section.  
Use quote # BE805-4 when ordering

All offers expire September 30, 2005

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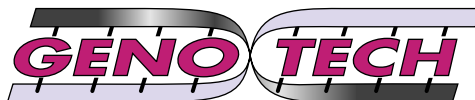
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## Geno Technology, One Great Company: Two Excellent Brands



**BIOSCIENCES<sup>®</sup>**

*for our Proteomic products*

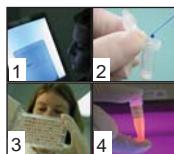


GENO TECHNOLOGY, INC.

*for our Genomic products*

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Cover Description



- |                                      |                              |
|--------------------------------------|------------------------------|
| 1 Chemiluminescence Reagents page 12 | 2 SPN™ Protein Assay page 8  |
| 3 Protease Assay page 19             | 4 GLOW™ Dyes for DNA page 21 |

# PROTEIN STAINS

## Protein Stains for Every Occasion

We supply all the stains every lab needs, including improved Coomassie based stains, enhanced ultra sensitive silver stains, reversible stains, and our new fluorescent protein stain. All of our protein stains are competitively priced with guaranteed quality.

### **RUBEO™:** Suitable for high sensitivity 1D or 2D gel fluorescent staining.



- **Fluorescent:** Red emission at 605nm.
- **High Sensitivity:** Easily detect ng levels of protein.
- **Minimal protein variation:** Allows quantitative comparison of proteins.
- **Compatible:** Ideal for subsequent analysis, including mass spectroscopy, microsequencing and immunostaining.

- **Versatile:** Stain native, denaturing, IEF and 2D gels.
- **Suitability:** Visualize with the simplest UV transilluminators to the complex laser scanners.

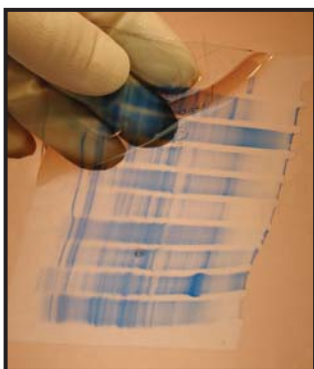
### **FOCUS FAST silver™:** Mass Spectroscopy compatible silver staining.



- **Ultrasensitive:** Visualize 1ng protein or 0.3ng nucleic acids on a crystal clear background.
- **Adaptable:** Stain protein and nucleic acids.
- **Compatible:** Stain native, denaturing, IEF and 2D gels.
- **Rapid:** Complete staining in 1 hour.

- **Mass Spectroscopy Suitable:** No glutaraldehyde, therefore complete protein and peptide recovery.

### **LabSafe™ GEL Blue:** A rapid Coomassie based stain



- **Sensitive:** Detects as little as 4ng protein.
- **Rapid staining:** Bands visible in 10 minutes with no destaining.
- **Versatile:** Stain native, denaturing, IEF and 2D gels.
- **Ready-To-Use:** One liter supplied, enough for up to 50 mini gels. One gallon size also available.
- **Non Toxic Destaining:** Simply destain in ultrapure water.

# PROTEIN STAINS

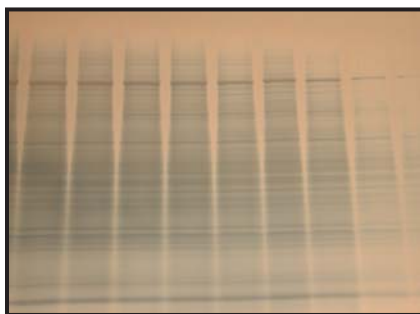
## Reversible 5 Minute Copper and Zinc Stains: Rapid reversible protein stains



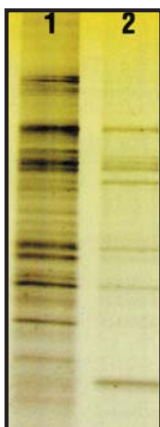
- **Reversible:** No destaining, ideal for electroelution, blotting, sequencing and mass spectroscopy.
- **Sensitive:** Detect as low as 8-12ng.
- **High Visibility:** Produce negative image of gel, clear bands on a semi opaque back ground.
- **Ultrarapid:** Proteins detected within 5 minutes.

### • Compatibility:

- *Copper Stain* : Stains SDS denatured gels, not compatible with native, tricine or glycine gels.
- *Zinc Stain* : Stains native, SDS denatured, tricine and glycine gels.



## Glyco-Stain™: Enhanced staining of glycoproteins after electrophoresis



- **Specific:** A modified silver stain for enhanced glycoprotein staining.
- **Sensitive:** Nanogram level detection, greater than 2 fold increase in glycoprotein and proteoglycan detection.
- **Detection:** Detects both glycosylated and non-glycosylated proteins.

## Ordering Information

Cat. #	Description/ Size
786-310	RUBEO™/ 200ml
786-311	RUBEO™/ 1 liter
786-312	RUBEO™/ 5 liters
786-240	FOCUS-Fast Silver™/ 25 mini gels
786-35	LabSafe™ GEL Blue / 50 mini gels
786-35G	LabSafe™ GEL Blue / 1 gallon
786-32CU	5 Minute Reversible Copper Stain/ 25 mini gels
786-32ZN	Reversible Zinc Stain/ 25 mini gels
786-254	Glyco-Stain™/ 25 mini gels

# DETERGENTS

## Proteomic Grade Detergents

A selection of highly efficient zwitterionic detergents for 2D electrophoresis



- Specifically purified for proteomic analysis.
- Peroxide, carbonyl, and other contaminant free detergents.
- No risk of protein modification or denaturation.
- Suitable for total and membrane protein extraction and 2D gel electrophoresis.
- Non-ionic, ionic, zwitterionic and non-detergent sulfobetaine detergents are available as individual reagents or in variety packs. For complete range features and applications- visit

of individual detergents, their [www.GBiosciences.com](http://www.GBiosciences.com) .

## Detergent Variety Packs

Convenient test quantities of popular detergents. Supplied with Optimizer-blueBALLS™ for protocol optimization.



**Detergent Variety Pack-I:** 10 non-ionic detergents and Optimizer-blueBALLS™: Proteomic grade, ready-to-use detergents: NP-40, Triton X-100, Triton X-114, Brij-35, Brij-58, Tween-20, Tween-80, OctylGlucoside, MEG-8, and MEG-10.

**Detergent Variety Pack-II:** 10 popular non-ionic, zwitterionic and non-detergent sulfobetaines and Optimizer-blueBALLS™: NP-40, Triton X-100, Brij-35, Tween-20, Octyl Glucoside, MEG-8, CHAPS, NDSB-201, ASB-16, and SB3-10.

**Detergents Variety Pack-III/FOCUS™ Detergents:** Efficient Zwitterionic detergents for 2D electrophoresis and Optimizer-blueBALLS™: CHAPS, SB3-10, SB3-14, ASB-16, ASB-C8Ø and a non-detergent sulfobetaine, NDSB-201.

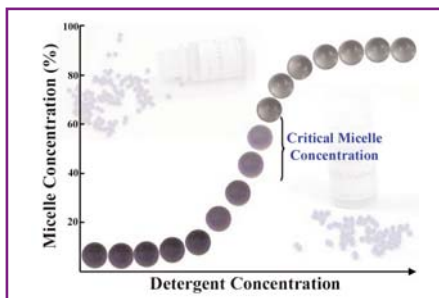
## Ordering Information

Cat. #	Description/ Size
DG050	CHAPS/ 5 gm
DG051	CHAPS/ 25 gm
DG052	CHAPSO/ 1 gm
DG053	CHAPSO/ 5 gm
DG062	ASB-16/ 5 gm
DG063	ASB-16/ 10 gm
DGP01	Detergent Variety Pack-I/ 1 Pack
DGP02	Detergent Variety Pack-II/ 1 Pack
DGP03	Detergent Variety Pack-III, FOCUS™ Detergents

# DETERGENT OPTIMIZATION & REMOVAL

## Precise membrane solubilization with OPTIMIZER-blueBALLS™

For establishing optimal detergent NP concentration and time for complete membrane extraction



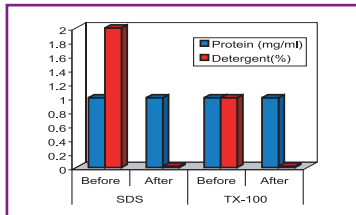
A straightforward aid for determining “Critical Micellar Concentration” (CMC) for detergents in extraction buffers. Avoids excessive amount of detergents, which are problematic during downstream applications.

Optimizer-blueBALLS™ are glass balls coated with a non-reactive, hydrophobic blue dye, which behave like membrane proteins. Use in a parallel extraction protocol and observe the

progress of lysis as the blue dye begins to solubilize. Solubilization of dye occurs only when micelles are present in the extraction buffer, giving a visual guide for extraction. Works with all types of detergents, including steroid-based detergents. The dye has no effect on subsequent downstream processing.

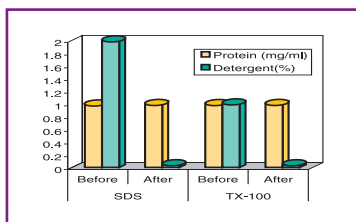
## Detergent Removal Systems

We offer uncomplicated and highly efficient kits for the removal of free detergents from protein solutions.



Two rapid, spin-column Detergent-OUT™ kits are available for the removal of SDS (**Detergent-OUT™ SDS-300**) and a wide variety of detergents, including Triton, NP-40, CTAB and CHAPS (**Detergent-OUT™ DTG-100X**).

- 5-10 minute protocol
- >95% recovery



The third kit, **OrgoSol-Detergent-OUT™**, utilizes protein precipitation and organic extraction of the detergents. This kit is preferably for detergent removal from hydrophobic protein solutions.

To monitor removal of SDS, we offer a colorimetric SDS detection and estimation kit.

## Ordering Information

Cat. #	Description/ Size
786-127	OrgoSol-Detergent-OUT™, Micro/ for 10ml solution
786-128	OrgoSol-Detergent-OUT™, Medi/ for 30ml solution
786-150	Detergent-OUT™ SDS-300, Micro/ 10/Kit
786-151	Detergent-OUT™ SDS-300, Medi/ 10/Kit
786-152	Detergent-OUT™DTG-100X, Micro/ 10/Kit
786-153	Detergent-OUT™DTG-100X, Medi/ 10/Kit
DGA01	Optimizer-blueBALLS™/ 500
786-129	SDS Detection Kit/ 10 tests

# PROTEIN ASSAYS

NEW

## Spin your way to rapid, accurate Protein Assays

Measure your protein concentration even in the presence of electrophoresis loading buffer.

SPN™ Protein Assay is a unique, fast and efficient spin column assay.

Assay is unaffected by interfering agents, such as detergents and chaotropes, which are effectively spun away from the protein.

SPN™ Protein Assay is a single tube format.



### FEATURES

- Linear response between 0.5µg and 10µg.
- Unaffected by non-protein chemicals and agents.
- Rapid assay; protein standards are optional.
- Small sample requirement, only 1-10µl.
- No toxic agents used, laboratory & environment safe.

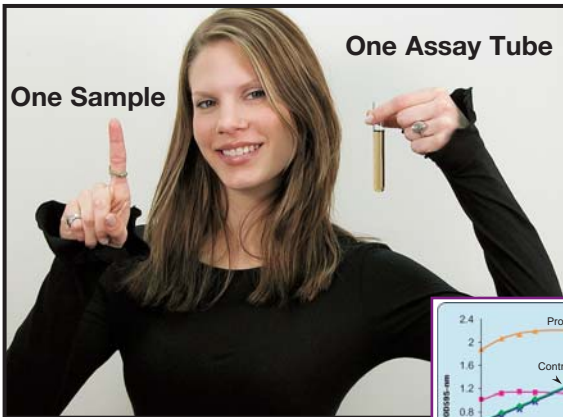
### Ordering Information

Cat. #	Description / Size
786-020	SPN™ Protein Assay / 50 assays

## CB-X™ Protein Assay

Do you use Coomassie dye based protein assays?  
Are they affected by detergents or reducing agents?  
Want a compatible, easy-to-use single tube assay?

**CB-X™ Protein Assay is your solution!!!**



Highly sensitive, measure as little as 0.5µg/ml, compared to Pierce's BCA™ assay (20µg).

Simple to use. Just mix your protein sample with reagents and collect your clean protein. Resuspend protein in CB-X™/Dye reagents, read at 595nm and use the lot specific Universal Calibration Plot to estimate the concentration. No need for your own calibration plot.

Protein standards and optional protocol for performing own calibration plots are supplied.



CB-X™ Protein Assay is a Coomassie dye based protein assay compatible with detergents, reducing agents, reducing sugars, thiols & chelating agents. Suitable for all proteins, including detergent solubilized membrane proteins.

# PROTEIN ASSAYS

## CB-X™ FEATURES:

- Sensitivity: Linear responses over the range of 0.5-50µg/assay
- Flexible Protocols-Suitable for tube or microtiter plate.
- Ready to use assay reagents and no preparation required.
- Fast color development.
- Long shelf life, stable for 12 months.
- Reliable results without preparing a calibration plot.

(Patent Pending).

## Ordering Information

Cat.#	Description/ Size
786-12X	CB-X™ Protein Assay /500 Assays

**dotMETRIC™ - Use a single microliter of sample in a fast, simple, reliable protein assay.**



Simply mix 1µl of protein with the dilution buffer supplied and apply 1µl to the test strip. Develop the test strip in 5-8 minutes. A circular protein spot is produced. Measure the diameter of the spots with the supplied dotMETRIC™ scale and determine concentration.

For increased reproducibility and test reliability the dotMETRIC™ kits are supplied with an optional "Spot Application Device". Allows for the application of samples using fixed volume capillary tips and simplifies the task of applying multiple samples on the test strips. No need for a spectrophotometer.

## Ordering Information

Cat. #	Description/ Size
786-20	dotMETRIC Protein Assay, Basic Kit, >300 assays
786-21	dotMETRIC Basic Kit, with spot application Device/ >300 assays

**Worried about contaminating reagents? Worry No Longer. Use NI™ A Non-Interfering Protein Assay™**

**A colorimetric protein assay that overcomes interference by common laboratory agents. High sensitivity and simple to use protocols.**

The 2-step process involves precipitation of proteins from interfering agents followed by a colorimetric assay based on the detection of copper ions. Suitable for protein samples containing reducing agents ( $\beta$ -mercaptoethanol, DTT), chelating agents (EDTA), detergents, amines, sugars and is highly tolerant of strong chaotropic buffers.



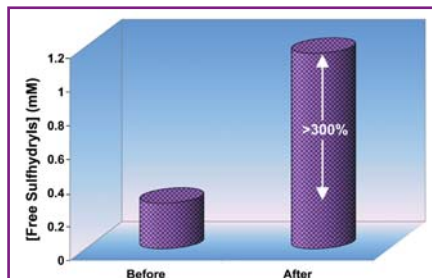
## Ordering Information

Cat. #	DESCRIPTION/ SIZE
786-005	NI™-Protein Assay Kit with Albumin Standard/ 500 assays

# PROTEIN MODIFICATION

## Reducing Resin™ (Immobilized TCEP)

TCEP (Tris[2-carboxyethyl] phosphine hydrochloride) is a highly stable, potent, non-toxic and odorless protein reducing agent for disulfide bonds.



Reducing Resin™ is perfect for the reduction of small proteins and peptides as the TCEP remains securely bound to the agarose. Perfect for the reduction of disulfide bonds in peptides and small proteins for coupling through cysteine residues to agarose or carrier proteins.



Reduction with Reducing Resin™ occurs over a wide pH range (pH 4.0-9.0) and temperature (4°C-80°C) and is compatible with most aqueous buffers.

### Ordering Information

Cat. #	Description/ size
786-235	Reducing Resin™ (Immobilized TCEP)/ 10ml slurry

**Ellman's Reagent (DTNB):** 5,5'-dithio-bis-(2-nitrobenzoic acid) is a versatile, water-soluble compound for quantifying free sulfhydryl groups in solution. A simple colorimetric assay. Ideal for measuring the degree of reduction achieved by Reducing Resin™.

### Ordering Information

Cat. #	Description/ size
BC87	Ellman's Reagent/ 5gm

## Other Protein Modifying Reagents

### Ordering Information

Cat. #	Description	Size
<b>REDUCING AGENTS</b>		
786-030	TCEP (Tris[2-carboxyethyl] phosphine hydrochloride)	1gm
BC99	DTT (Dithiothreitol)	5gm
BC98	β-Mercaptoethanol	100ml
<b>PROTEIN GROUP MODIFICATION</b>		
BC97	sulfo NHS (N-hydroxysulfosuccinimide ) <i>Generate amine reactive peptides on carboxyl groups</i>	500mg
BC96	SATA (N-Succinimidyl S-acetylthioacetate) <i>Converts amines to sulfhydryl residues.</i>	100mg
BC95	Traut's Reagent (2-Iminothiolane.HCl) <i>Converts amines to sulfhydryl residues.</i>	500mg
BC94	HPG (p-Hydroxyphenyl glyoxal) <i>Modifies arginine residues.</i>	100mg
BC93	1,3,4,6-tetrachloro-3,6-diphenylglycoluril <i>Iodination agent</i>	1gm
BC92	Bolton-Hunter Reagent (Sulfo SHPP) <i>Water soluble, membrane impermeable iodination agent</i>	100mg
BC91	Sulfo NHS Acetate (Sulfosuccinimidyl acetate) <i>Water soluble acylating agent, blocks amine groups</i>	100mg
BC90	BNPS Skatole (2-(2'-nitrophenylsulfenyl)-3-methyl-3-bromoindolenine). <i>Cleaves tryptophan residues</i>	1gm
<b>CHAOTROPIC AGENTS</b>		
BC89	Urea	500gm
BC88	Guanidine.HCl	500gm

# ENZYME LABELING



## HOOK™ Enzyme Labeling

Horseradish peroxidase (HRP) and alkaline phosphatase (AP) protein labeling kits are now available. Saves valuable research time as each kit is supplied with Tube - O-Reactor™ (see below) that allows for the equilibration, coupling reactions and dialysis to be achieved in a single tube.

**HOOK™ HRP PLUS Labeling kit** uses an amine reactive activated HRP that offers >90% coupling efficiency, which is superior to the commonly used glutaraldehyde coupling chemistry. Proteins have a higher abundance of amines, compared to free sulfhydryls, allowing for a greater degree of labeling.

**HOOK™ HRP SULFO Labeling kit** is supplied with a maleimide activated HRP to bind to free sulfhydryl groups of proteins. This eliminates the first step of the 2-step maleimide method, saving valuable research time and effort.

**HOOK™ AP SULFO Labeling kit** contains maleimide activated AP that reacts with sulfhydryl groups of proteins. The preactivated AP saves time and effort by eliminating the first step of the maleimide activation method.

### Ordering Information

Cat. #	Description/size
786-313	HOOK™ HRP PLUS Labeling/ 1 kit
786-314	HOOK™ HRP SULFO Labeling/ 1 kit
786-315	HOOK™ AP SULFO Labeling/ 1 kit

## Tube-O-Reactor™: Achieve complete biochemical reactions in a single tube.



- Minimal hands-on time and no sample loss.
  - Complete equilibration of reaction conditions, the biochemical reaction and the removal of unreacted reagents and byproducts in a single tube.
  - Supplied with 5 Micro for 20-250µl samples & 5 Medi for 250µl-2.5ml samples Tube-O-Dialyzers, dialysis cups and stirring balls.
- Available as 4,000, 8,000 and 15,000 MWCO.
  - Ideal for biotin and enzyme labeling of proteins.

### Ordering Information

Cat. #	Description/ size
786-027-4K	Tube-O-Reactor™ 4,000 MWCO/ 1 kit
786-027-8K	Tube-O-Reactor™ 8,000 MWCO/ 1 kit
786-027-15K	Tube-O-Reactor™ 15,000 MWCO/ 1 kit

# CHEMILUMINESCENCE DETECTION

## NEW Chemiluminescent Substrates

We now offer three products for detection of horseradish peroxidase (HRP), with variations in sensitivity and signal duration.

### OptiBlaze WEST femtoLUCENT™: *For the ultimate in detection levels.*

- Low femtogram detection ( $10^{-15}$ )
- Low Background : High signal ratio
- Working solution stable for up to 45 days
- Signal Duration of 6-8 hours
- 1 year shelf life
- Nitrocellulose or PVDF compatible
- Enough reagent for 1,000cm<sup>2</sup>
- Includes substrates, HRP-conjugated goat anti-rabbit and anti-mouse secondary antibodies, and **FREE NAP BLOCKER™** sample.



### OptiBlaze WEST picoLUCENT™: *Superior detection, superior price.*

- Low picogram detection ( $10^{-12}$ )
- Low Background : High signal ratio
- 1 year shelf life
- Enough reagent for 5,000cm<sup>2</sup> membrane
- Nitrocellulose or PVDF compatible
- Includes substrates and **FREE NAP BLOCKER™** sample, no secondary antibody included



### OptiBlaze WEST extendoLUCENT™:

#### *Extended signal duration, ultimate sensitivity.*

- Femtogram detection levels ( $10^{-14}$ )
- Up to 24 hour signal duration, with minimal background
- Working solution stable for up to 45 days
- Nitrocellulose or PVDF compatible
- 1 year shelf life
- Enough reagents for 1,000cm<sup>2</sup>
- Includes substrates, HRP-conjugated goat anti-rabbit and anti-mouse secondary antibodies, and **FREE NAP BLOCKER™** sample.



Also available is **OptiBlaze WEST LUCENT AP™** for chemiluminescent detection with alkaline phosphatase. A low femtogram detection, low background and economical reagent. This kit includes substrates, AP-conjugated goat anti-rabbit and anti-mouse secondary antibodies, and **FREE NAP BLOCKER™** sample.

Trial kits contain 20% of the chemiluminescence substrates and no secondary antibodies or blocking agents.

## Ordering Information

Cat. #	Description/ Size
786-301	OptiBlaze WEST femtoLUCENT™/ 1000cm <sup>2</sup>
786-301T	OptiBlaze WEST femtoLUCENT™ Trial Kit/ 200cm <sup>2</sup>
786-303	OptiBlaze WEST picoLUCENT™/ 5000cm <sup>2</sup>
786-303T	OptiBlaze WEST picoLUCENT™ Trial Kit/ 1000cm <sup>2</sup>
786-305	OptiBlaze WEST extendoLUCENT™/ 1000cm <sup>2</sup>
786-305T	OptiBlaze WEST extendoLUCENT™ Trial Kit/ 200cm <sup>2</sup>
786-307	OptiBlaze WEST LUCENT AP™/ 1000cm <sup>2</sup>
786-307T	OptiBlaze WEST LUCENT AP™ Trial Kit/ 200cm <sup>2</sup>

# WESTERN BLOTTING REAGENTS

## Western Blotting Reagents

G Biosciences provides numerous products to aid researchers in obtaining perfect Western blot results. These include numerous blocking solutions and reagents, wash buffers and secondary antibodies.

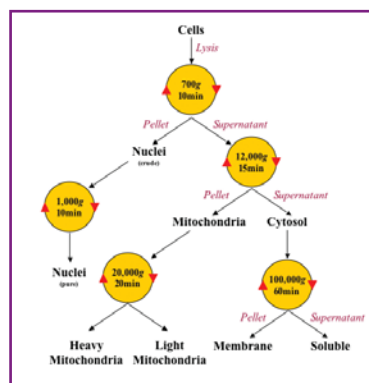
### Ordering Information

Cat. #	Description/ Size
786-190	NAP-BLOCKER™ [2X]: A non-animal protein blocker/ 1L
786-190T	NAP-BLOCKER™ [2X] in TBS/ 1L
786-190P	NAP-BLOCKER™ [2X] in PBS/ 1L
786-011	BLOT-QuickBlocker™ : A modified milk protein blocker/ 175gm
786-193	BLOK™ BSA in TBS : 10% solution, no need to waste time dissolving BSA/ 125ml
786-195	BLOK™ BSA in PBS : 10% solution/ 200ml
786-196	BLOK™ Casein in TBS: Ready to use, excellent alternative to milk solutions/ 1L
786-194	BLOK™ Casein in PBS: Ready to use/ 1L
786-192	BLOK™ BLOTTO: Ready to use non fat dry milk solution in TBS/ 1L
786-161	femtoTBST™ washing buffer [10X]/ 250ml
786-162	femtoPBST™ [10X]/ 250ml
786-R38	goat anti mouse; IgG H&L-HRP 2ml
786-R39	goat anti rabbit; IgG H&L-HRP 2ml

## SUBCELLULAR FRACTIONATION

### Enrichment of Subcellular fractions with FOCUS™ SubCell

- Fast and easy isolation of enriched nuclear, mitochondrial, membrane and cytosolic fractions.
- Fractionate mitochondria into heavy and light fractions.
- Produce >80% intact and active mitochondria.
- Utilizes proprietary buffers and centrifugation.
- Ideal for cultured mammalian cells and fully adaptable for animal tissues.
- Suitable for Cell Biology & Proteomic Analysis.



### Ordering Information

Cat. #	Description/ size
786-260	FOCUS™ SubCell/ 1 kit

# AFFINITY RESINS

## Affinity Chromatography Resins & Supplies

For the purification of proteins, recombinant proteins and antibodies.

### Glutathione Resin for GST

- Affinity purification of recombinant proteins with a glutathione S-transferase (GST) tag.
- Reduced glutathione covalently coupled to 4% crosslinked agarose.
- 10 carbon spacer arm.
- Binding Capacity: ~8mg/ml resin.
- Ligand Density: 7-15 $\mu$ mole glutathione/ ml resin.
- Bead Structure: 4% crosslinked agarose.
- Bead Size: 50-160 $\mu$ m.



### Nickel Chelating Resin for His tags

- Immobilized Metal (Nickel) Ion Affinity chromatography.
- Purification of proteins with metal chelating groups, such as His6 tagged proteins.
- Ligand Density: 20-40 $\mu$ moles Ni<sup>2+</sup>/ ml resin
- Binding Capacity: ~4mg/ml
- Bead Structure: 6% cross-linked agarose

### Calmodulin Resin for CBP tags

- For the affinity purification of calmodulin binding proteins and proteins with a calmodulin binding peptide (CBP) tag.
- Ligand Density: 0.9-1.2mg calmodulin/ml resin
- Binding capacity: 1-3mg/ml (approx.)
- Bead Structure: 4% agarose
- Bead Size: 50-160 $\mu$ m

### Protein A Resin for Immunoglobulin

- Immobilized protein A for the purification of various immunoglobulins.
- Binding Capacity: >20mg human IgG/ml resin
- Bead Structure: 4% highly cross-linked agarose
- For Immunoglobulin specificity, see table on next page.

### Protein G Resin for Immunoglobulin

- Immobilized protein G for the purification of various immunoglobulins.
- Binding Capacity: >20mg human IgG/ml resin
- Ligand Density: ~2mg protein G/ml resin
- Bead Structure: 4% highly cross-linked agarose
- Bead Size: 50-160 $\mu$ m
- For Immunoglobulin specificity, see table on next page.

## Ordering Information

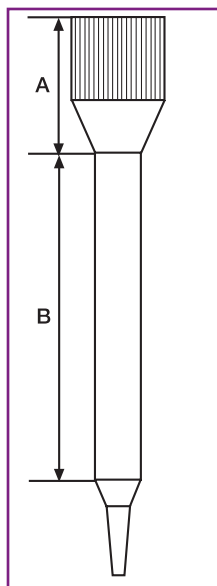
Cat. #	Description / Size
786-280	Glutathione Resin / 10ml
786-281	Nickel Chelating Resin / 25ml
786-282	Calmodulin Resin / 10ml
786-283	Protein A Resin / 5ml
786-284	Protein G Resin / 5ml

# AFFINITY RESINS

Immunoglobulin Specificity Table			
Species	Antibody Class	Protein A	Protein G
Mouse	Total IgG	++++	++++
	IgG <sub>1</sub>	+	+++
	IgG <sub>2a</sub>	++++	++++
	IgG <sub>2b</sub>	++++	++++
	IgG <sub>3</sub>	+++	+++
Human	Total IgG	++++	++++
	IgG <sub>1</sub>	++++	++++
	IgG <sub>2</sub>	++++	++++
	IgG <sub>3</sub>	+	++++
	IgG <sub>4</sub>	++++	++++
Rat	Total IgG	+	++
	IgG <sub>1</sub>	-	+
	IgG <sub>2a</sub>	-	++++
	IgG <sub>2b</sub>	-	++
	IgG <sub>2c</sub>	++	+++
Hamster	Total IgG	++	++
Guinea Pig	Total IgG	++++	++
Rabbit	Total IgG	++++	+++
Horse	Total IgG	++	++++
Cow	Total IgG	++	++++
Pig	Total IgG	+++	++
Sheep	Total IgG	+	++
Goat	Total IgG	+	++
Chicken	Total IgG	-	-

## Disposable Columns

Affordable, disposable columns available in three convenient sizes.



## Ordering Information

Cat. #	Size	Quantity	Volume		
			Column(A) (ml)	Reservoir(B) (ml)	Total (ml)
786-198	Micro	10	n/a	1	1
786-169	Medi	25	4	3	7
786-197	Maxi	25	10	22	32

# CELL TOXICITY & APOPTOSIS

## Cell Toxicity & Apoptosis Reagents & Kits

### CytoScan™ Cytotoxicity Assay Kits

Convenient high-throughput screening for cell death, cell proliferation, and compounds that induce cytotoxicity.

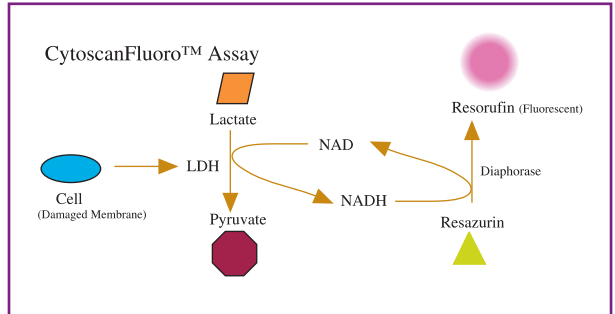
Quick, non-radioactive and convenient identification of cytotoxic effects. High throughput, 96 well assay.

Available in two formats:

#### 1. CytoScan™-fluoro

Based on cellular lactate dehydrogenase (LDH) released from damaged or stressed cells. Released LDH measured with a

diaphorase coupled enzymatic assay, converting a non-fluorescent compound to a fluorescent one. Detects low level damage undetectable by other commercial products.



#### 2. CytoScan™-LDH

CytoScan™-LDH measures cytosolic enzyme lactate dehydrogenase (LDH) released as cells die. Released LDH is measured with a color producing diaphorase linked tetrazolium salt reaction. The amount of color produced, is proportional to the number of cell deaths. Expensive fluorometers not required!

### Ordering Information

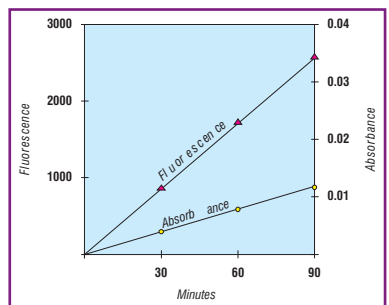
Cat. #	Description/ Size
786-211	CytoScan™-fluoro Cytotoxicity Assay Kit/ > 500 assays
786-210	CytoScan™-LDH Cytotoxicity Assay Kit/ 1000 assays

### APOPTOSIS ASSAY & KITS CasPASE™ Apoptosis Assay Kit:

#### Fluorometric & Colormetric assays in one.

These kits detect apoptosis by measuring caspase activity- an early indicator of apoptosis. The assay can be monitored with a fluorescence reader or spectrophotometer. Uses AFC-substrate, which exhibits both fluorescence and absorbance spectral shifts between the substrate-conjugate and the free dye (AFC).

The CasPASE™ assay kits provide assays for caspases 1-10 and 13. All kits supplied with appropriate AFC substrate and FMK inhibitor.



# CELL TOXICITY & APOPTOSIS

## Ordering Information

Cat.#	Description/ Size
786-200A	Cas-PASE™-1, 4, 5 Assay kit/ 50 assays
786-200B	Cas-PASE™-1, 4, 5 Assay kit / 100 assays
786-201A	Cas-PASE™-2 Assay kit / 50 assays
786-201B	Cas-PASE™-2 Assay kit / 100 assays
786-202A	Cas-PASE™-3, 7, 10 Assay kit / 50 assays
786-202B	Cas-PASE™-3 Assay kit / 100 assays
786-203A	Cas-PASE™-6 Assay kit / 50 assays
786-203B	Cas-PASE™-6 Assay kit / 100 assays
786-204A	Cas-PASE™-8 Assay kit / 50 assays
786-204B	Cas-PASE™-8 Assay kit / 100 assays
786-205A	Cas-PASE™-9 Assay kit / 50 assays
786-205B	Cas-PASE™-9 Assay kit / 100 assays
786-206A	Cas-PASE™-13 Assay kit / 50 assays
786-206B	Cas-PASE™-13 Assay kit / 100 assays

## Individual Caspase Substrates & Inhibitors



Ready-to-use caspase substrates and inhibitors save time and money. These substrates are AFC-substrates. Supplied as 1mM ready-to-use solutions and recommended for use at 50 $\mu$ M in assays.

The inhibitors are potent fluoromethyl ketone (FMK) based, non-toxic, and membrane permeable. Supplied as 2mM ready-to-use solutions and are recommended for use at 1  $\mu$ l/ml cell culture or in caspase assays.

**Ordering Information**– for a complete list of substrates and inhibitors, price, and online ordering information visit [www.GBiosciences.com](http://www.GBiosciences.com)

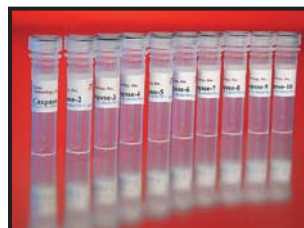


## Apoptotic DNA Ladder Kit & Apoptotic Nucleosomal DNA Control

The Apoptotic-LADDER™ kit contains all of the reagents necessary for the preparation of a nucleosomal DNA ladder. The nucleosomal DNA is detected by 1.8% agarose gel electrophoresis. A preparation of nucleosomal apoptotic DNA as control is also offered separately.

## Apoptosis Inducers

Ready-to-use high quality apoptosis inducers allow users an easy tool for the induction of apoptosis in cultured cells.



## Caspase Induced Lysate & Uninduced Lysate Controls

Caspase induced cell lysate and uninduced control cell lysates are simple tools for studying apoptosis phenomenon. Useful as controls.

## Active Recombinant Human Caspases

Active recombinant human caspases are useful in screening of caspase inhibitors and as positive controls for investigating apoptotic pathways, caspase activity assays and in determining caspase specificity. We offer Caspase-1 to Caspase-10.

**Ordering Information**– for a complete list of substrates and inhibitors, price, and online ordering information visit [www.GBiosciences.com](http://www.GBiosciences.com)

# PROTEASES

## Proteases:

### Modified Sequencing Grade (MSG) Proteases

#### Highly Purified and Chemically Stabilized

#### Suitable for Protein Fragmentation and Sequencing Reactions

**MSG-Trypsin:** A modified sequencing grade serine endopeptidase, cleaves the carboxy side of arginine, lysine and s-aminoethyl cysteine.

**MSG-Arginine-C:** A sulfhydryl endopeptidase, hydrolyzes the carboxy bond of arginine.

**MSG-Aspartic-N:** A metallo-endoproteinase, hydrolyzes on the N-terminal side of aspartic acid and cysteine.

**MSG-Chymotrypsin:** A serine endopeptidase, predominantly cleaves the carboxy side of tyrosine, phenylalanine and tryptophan.

**MSG-Lysine-C:** A serine protease, highly specific cleavage at the carboxy side of lysine.

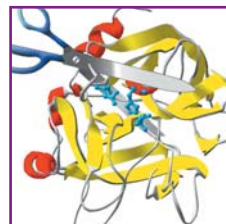
**MSG-Glutamic-C:** A serine endopeptidase, cleaves at the carboxy side of either aspartic or glutamic acid.

**MSG-Protease Sampler Pack** provides one vial each of our six MSG-proteases. There are numerous benefits of the Sampler Pack:

**Trypsin Incompatibility:** Some protein samples are resistant to trypsin digestion, the sampler allows researchers to conveniently find an alternative protease.

**Consecutive Digestions:** Some primary digests result in fragments greater than 5,000 daltons, which are hard to sequence. The sampler kit allows for a second consecutive digestion to generate smaller peptides.

For additional information, request Protease Bulletin #38B or visit [www.GBiosciences.com](http://www.GBiosciences.com)



## Ordering Information

Cat.#	Description/ Size
786-245	MSG-Trypsin (Porcine)/ 5 vials, 20µg/vial
786-245B	MSG-Trypsin (Bovine)/ 5 vials, 20µg/vial
786-11	MSG-Arginine-C/ 2 vials, 5µg/vial
786-12	MSG-Aspartic-N/ 2 vials, 3µg/vial
786-13	MSG-Chymotrypsin/ 2 vials, 25µg/vial
786-14	MSG-Lysine-C/ 2 vials, 5µg/vial
786-15	MSG-Glutamic-C/ 2 vials, 10µg/vial
786-16	MSG-Protease Sampler Pack/ 6 vials

# PROTEASE ASSAYS & INHIBITORS

## Protease Assay Kits

G Biosciences offers 3 kits for screening and assaying for proteases.

**Protease Screening™ Kit** for discovery of proteases or testing for proteolysis in protein sample preparations. The kit uses resorufin-protein conjugate as a protease substrate which allows detection of nanogram levels.



**Protease Assay Kit** for the assaying of protease activity. A simple and reliable protease assay kit that uses dye-labeled protein conjugate as a protease substrate that allows detection of nanogram levels.

**Fluoro Protease Assay Kit: A sensitive and rapid fluorescent protease assay.** A fluorescein isothiocyanate (FITC) labeled protein acts as the protease substrate, the level of protease activity is monitored with the increase in fluorescent intensity.



**Resorufin and FITC Labeled Casein** are also available as individual protease substrates.

## Ordering Information

Cat. #	Description/ Size
786-137	Protease Screening™ Kit/ 50 Assays
786-028	Protease Assay Kit/ 50 Assays
786-320	Fluoro Protease Assay/ 1000 assays
786-321	Resorufin-casein protease substrate/ 4mg
786-322	FITC-casein protease substrate/ 1mg

## Highly Stable Protease Inhibitor Cocktails

**ProteaseArrest™** and **FOCUS-ProteaseArrest™** contain agents to inhibit serine, cysteine, metallo- and calpain proteases, consisting of irreversible and reversible protease inhibitors and an optional EDTA solution is provided for the inhibition of metalloproteases. Suitable for most samples.

**FOCUS-ProteaseArrest™** is specifically designed to be used with samples destined for 2D electrophoresis and mass spec analysis. For additional information, request Protease Inhibitor Bulletin #38A or visit [www.GBiosciences.com](http://www.GBiosciences.com). Individual protease inhibitors are also available. See Ordering information below.

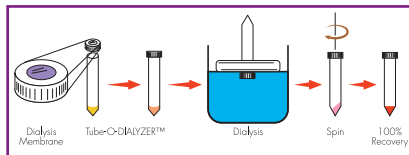
Cat. #	Description/Size
786-108	ProteaseArrest™ [100X]/ 2ml
786-108F	FOCUS ProteaseArrest™ [100X]/ 1ml
786-045	Antipain-dihydrochloride/ 5 mg
786-046	Aprotinin/ 100 mg
786-047	Bestatin/ 10 mg
786-048	Chymostatin/ 5 mg
786-049	E-64 (N-(N-(L-3-Trans-carboxirane-2-carbonyl)/ 5mg
786-050	EDTA-Na <sub>2</sub> 100g
786-051	Leupeptin/ 25 mg
786-052	Pepstatin/ 25 mg
786-053	AEBSF (4-(2-Aminoethyl)-benzenesulfonyl-fluoride, hydrochloride)/ 1g
786-054	Phosphoramidon/ 10 mg
786-055	PMSF (Phenylmethylsulfonylfluoride)/ 5g

# Dialysis

## Dialysis

Fast and Easy Dialysis with Tube-O-Dialyzer™

- 100% Sample Recovery, even if precipitation occurs.
- Tube format for easy sample handling and centrifugation.
- No Awkward Sample Loading, simply pipette sample into tube.
- 20µl-250µl and 200µl-2.5ml sizes available.
- 1K, 4K, 8K, 15K and 50K MWCO.
- Ready-To-Use.



## Ordering Information

Cat. #	Description/ Size
786-141-1K	Tube-O-DIALYZER, Micro (up to 250µl), 1000MWCO/ 50 units
786-141-4K	Tube-O-DIALYZER, Micro (up to 250µl), 4000MWCO/ 50 units
786-141-8K	Tube-O-DIALYZER, Micro (up to 250µl), 8000MWCO/ 50 units
786-141-15K	Tube-O-DIALYZER, Micro (up to 250µl), 15,000MWCO/ 50 units
786-141-50K	Tube-O-DIALYZER, Micro (up to 250µl), 50,000MWCO/ 50 units
786-142-1K	Tube-O-DIALYZER, Medi (up to 2.5 ml), 1000MWCO/ 50 units
786-142-4K	Tube-O-DIALYZER, Medi (up to 2.5 ml), 4000MWCO/ 50 units
786-142-8K	Tube-O-DIALYZER, Medi (up to 2.5 ml), 8000MWCO/ 50 units
786-142-15K	Tube-O-DIALYZER, Medi (up to 2.5 ml), 15,000MWCO/ 50 units
786-142-50K	Tube-O-DIALYZER, Medi (up to 2.5 ml), 50,000MWCO/ 50 units
786-143-1K	Tube-O-DIALYZER, Mixed, (Medi & Micro), 1000MWCO/ 50 units (25 of each size)
786-143-4K	Tube-O-DIALYZER, Mixed, (Medi & Micro), 4000MWCO/ 50 units (25 of each size)
786-143-8K	Tube-O-DIALYZER, Mixed, (Medi & Micro), 8000MWCO/ 50 units (25 of each size)
786-143-15K	Tube-O-DIALYZER, Mixed, (Medi & Micro), 15,000MWCO/ 50 units (25 of each size)
786-143-50K	Tube-O-DIALYZER, Mixed, (Medi & Micro), 50,000MWCO/ 50 units (25 of each size)
786-145A	Tube-O-Array Dialyzer™/ 1 tray and 12 dialysis assemblies/ 1 each
786-145D	Tube-O-Tanks for micro size/ 1 tank
786-145E	Tube-O-Tanks for medi size/ 1 tank

In addition, we supply Tube-O-Array™ that includes dialysis cups, stirring balls and holder, a complete setup for high throughput sample dialysis.

For larger dialysis, order our Tube-O-Tanks. A specific tank for both Tube-O-Dialyzer™ sizes, each holds 7 Tube-O-Dialyzers™.



# GENOTECH MOLECULAR BIOLOGY PRODUCTS

## RNase OUT™ Decontamination Solution.

Kills RNases on contact, just spray and rinse. RNase OUT™ allows common equipment to be safely and confidently used for all your RNA work.

- Non-toxic and residue free.
- Kills RNases on contact from glassware, plastic surfaces, countertops, and pipettes.
- Simply spray items or area to decontaminate and rinse.

For economy, refilling spray bottles, or cleaning large items, RNase OUT™ is also available in 1 liter containers.



### Ordering Information

Catalog #	Description/ Size
786-70	RNaseOUT™, 250ml spray bottle
786-71	RNaseOUT™, 1L refill

## GT 250 Power Pack, a digital programmable power supply unit.



- Ideal for vertical & horizontal electrophoresis.
- Constant voltage or constant current operation.
- Maximum output of 250 volts, 400mA or 100watts.
- Programmable; 10 programs, with optional audio alarm.
- Light weight, compact and stackable.
- 1 year warranty.

**Special Price until September 30th, 2005**

Catalog #	Description/ Size
GT-250	GT250 Power Pack/ 1 unit

## Glow Dyes™: Tired of having trays of toxic ethidium bromide in the lab.

Our *Glow CleanAway Dyes*™ contain only a trace amount of ethidium bromide to visualize DNA and RNA bands.

The *Glow CleanAway Dyes*™ enable intense staining, without the need for additional ethidium bromide in the agarose or subsequent staining.

3 effortless steps to visualization:

- Mix with sample
- Run gel
- Visualize on your standard UV illuminator.

Universal Loading Dyes™ are also available without ethidium bromide.



### Ordering Information

Cat. #	Description/ Size
786-105	6x Glow CleanAway™/ 1.5ml
786-102	6x Universal Loading Dyes™/ 1.5ml
786-107	2x RNA Glow CleanAway™/ 1.5ml
786-106	2x Universal RNA™ Loading Dyes/ 1.5ml

## Geno-ElectroPhore™:

### A mini horizontal Gel Electrophoresis System.

The Ultimate in simplicity and convenience in casting agarose gels.

System comes complete with;

- Casting Tray, designed to eliminate leaks.
- 2 mini trays (2" x 4 1/4"; 5 x 8.3 cm).
- 1 large gel tray (5 1/8" x 4 1/4"; 10.5 x 8.3cm).
- 1mm thick combs
  - 6 or 8 wells for mini gels.
  - 13 or 17 wells for large gels.
- Gel box and leads



### Ordering Information

Cat. #	Description/ Size
MT-108	Geno-Electrophore™/ 1 unit
MT-109	Complete-Electrophore™/ 1 Geno-Electrophore + Power supply

## Yeast Research Systems

### **Fast Yeast Transformation Kit™** -A rapid single step yeast transformation kit.

Takes less than 10 minutes to prepare competent yeast cells.

Competent yeast cells can be used immediately or frozen for later use.

Suitable for both circular and linear plasmid transformations.

High transformation efficiency, yield ~10<sup>5</sup>-10<sup>6</sup> transformants per µg circular DNA.

Broad spectrum, works well with *C. albicans*, *S. pombe*, *Pichia pastoris* and *S. cerevisiae*.

### **EZ Yeast Plasmid Prep™** - A simple yeast plasmid mini prep.

Simple and efficient alkaline lysis method for *E. coli* modified for yeast plasmid isolation.

Isolate high yield yeast plasmid without the use of glass beads, phenol or vortexing. Supplied Longlife™ Zymolyase® efficiently releases plasmids.

Plasmid yield up to 0.1-0.3ng for most 2µ-based plasmid from 1.5ml culture.

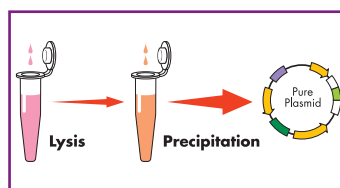
Suitable even for low copy number yeast plasmids.

### **Longlife™ Zymolyase®** -A stabilized and ready-to-use preparation of yeast lytic enzyme.

Ready to use solution.

High yeast lytic activity with low non-specific activity.

Suitable for yeast cell lysis, spheroplast preparation, glucan hydrolysis, etc.



### **Yeast Geno-DNA-Template™** - For isolation of high quality DNA from yeast.

Two step process

High yield DNA of ~100Kb in size and A<sub>260/280</sub>=1.8-2.0.

### Ordering Information

Cat. #	Description/ Size
GZ-1	Fast Yeast Transformation Kit™/ 120 preps
GZ-2	EZ Yeast Plasmid™/ 100 preps
786-134	Yeast GenoDNA Template™/ 100 preps
786-036	LongLife® Zymolase/ 2x0.5ml, 1.5U/ml

# Purification of High Quality Genomic DNA

**OmniPrep™** - For isolation of high quality genomic DNA from a wide variety of samples.

- Isolates genomic DNA from whole blood, animal tissues, plant tissues (rich in polysaccharides), cultured cells, bacteria, fungi, yeast and many more.
- Unique and proprietary formulation of detergents and salts. Extract and purify DNA from almost any sample.
- Quick protocol - isolates extremely clean DNA: high yield, ~100kb,  $A_{260}/_{280}=1.8-2.0$ .
- Option to modify protocol for difficult to handle samples.
- Enough reagents for extracting DNA from over 150 preps of 10-50 mg tissue.



**MegaLong™ DNA** - For isolation of high molecular weight (>100Kb) genomic DNA.

Extract high molecular weight (>100kb) genomic DNA without any physical manipulation, not even pipetting. Using Tube-O-Dialyzer™ to yield fully hydrated and ready-to-use DNA that is compatible with DNA libraries, PCR amplification, Southern blot analysis, pulse-field electrophoresis, and other applications where high molecular weight DNA is needed.

**OmniTemplate™ DNA** - Template preparation in a single tube.

Rapid preparation of DNA template for large throughput microanalysis. The kit allows high recovery of ready to use DNA templates in a short period of time.

**RapidDNA-Template Prep™ Kit** - Template preparation from small samples.

Specific binding pinkRESIN™ allows recovery of 100% DNA template from any sample including blood, animal tissues, cultured cells, and plant samples.

**Plant Geno-DNA-Template™** - For isolation of contamination-free plant DNA template.

**Yeast Geno-DNA-Template™** - For isolation of high quality DNA from yeast.

## Ordering Information

Cat. #	Description/ Size
786-136	OmniPrep™/ 150 Preps
786-146	MegaLong™/ Micro, 25 Preps
786-147	MegaLong™/ Medi, 50 Preps
786-013	OmniTemplate™/ 100 Preps
786-014	Rapid Template Prep™ Kit/ 50 Preps
786-015	Rapid Template Prep™ Kit/ 100 Preps
786-135	Plant Geno-DNA-Template™/ 100 Preps
786-134	Yeast Geno-DNA-Template™/ 100 Preps