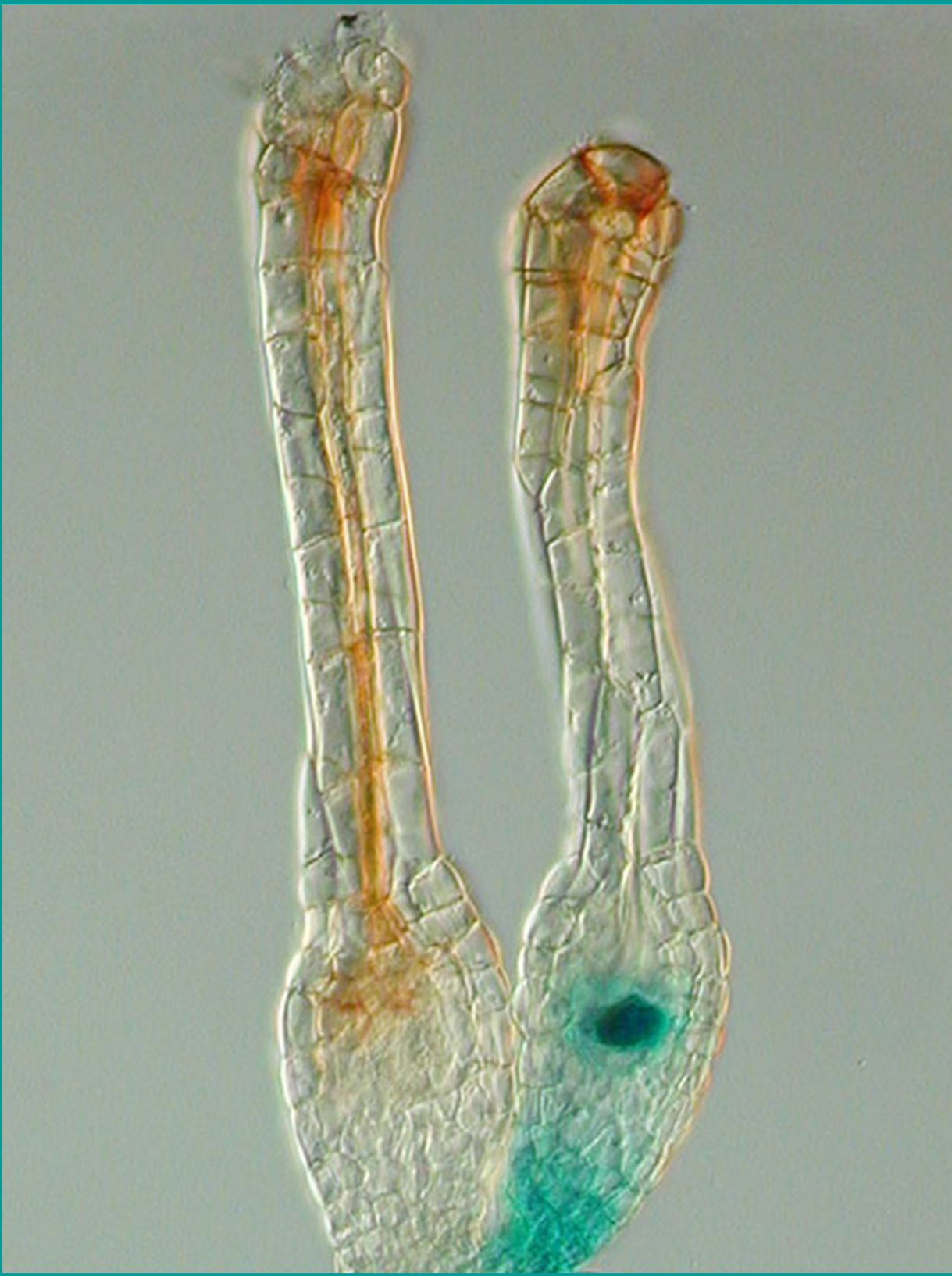


# MOLECULAR BIOLOGY



**MOLECULAR BIOLOGY**

*Phyto*Technology Laboratories® offers a wide variety of products for use in plant molecular biology. The products listed in this section are those that are most commonly used in various molecular biology applications. For bacteria growth media please refer to the Microbiology section on page 151 and the Phytopathology section on page 161.

If you have trouble finding a product please consult the indices at the back of this catalogue. Be sure to check back at [www.phytotechlab.com](http://www.phytotechlab.com) for new products!

**Sterile Antibiotic Solutions**

*Phyto*Technology Laboratories® offers a line of ready-to-use, sterile-filtered antibiotic solutions for use in molecular biology. Each solution is manufactured in-house and then sterile-filtered at the main campus of *Phyto*Technology Laboratories®. All sterile filtered liquids are confirmed sterile according to USP<71> protocols.

Many of our sterile antibiotic solutions are offered, for your convenience, in packages of ten 1mL aliquots. Sterile antibiotic solutions are not only convenient and easy-to-use, but also allow the use of antibiotics without the need for a full body respirator. For more information about antibiotics, see "Antibiotic Selection, Preparation, & Storage" on page 257.



**Featured in this section**

- Antibiotics
- Antibiotic Solutions
- Buffers
- Transformation
- Stains & Dyes
- Reagents
- And more...






**C540 - CARBENICILLIN SOLUTION (100 MG/ML)**

$\alpha$ -Carboxybenzylpenicillin, Disodium Salt  
Aqueous Solution  
Sterile Filtered  
Plant Tissue Culture Tested

- Liquid
- CAS Number: 4800-94-6
- Formula:  $C_{17}H_{16}N_2O_6SNa_2$
- Molecular Weight: 422.41
- Miscible with Water
- Store at -20 to 0 °C
- Ship on dry ice




**AVAILABLE PACKAGE SIZES**

10x1mL	10mL	25mL	100mL
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**C2046 - CARBENICILLIN SOLUTION (250 MG/ML)**

$\alpha$ -Carboxybenzylpenicillin, Disodium Salt  
Aqueous Solution  
Sterile Filtered  
Plant Tissue Culture Tested

- Liquid
- CAS Number: 4800-94-6
- Formula:  $C_{17}H_{16}N_2O_6SNa_2$
- Molecular Weight: 422.41
- Miscible with Water
- Store at -20 to 0 °C
- Ships on dry ice



**AVAILABLE PACKAGE SIZES**

10x1mL	10mL	25mL	100mL
--------	------	------	-------


**FOR MORE INFORMATION ABOUT ANTIBIOTICS**

See "Figure 30. Antibiotics/Antimycotics/Selection Agent Guide" on page 258 in the Technical Section.

**C380 - CEFOTAXIME, SODIUM SALT**

(6R,7R)-3-[(Acetyloxy)methyl]-7-[[2Z)-(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic Acid, Sodium Salt  
Plant Tissue Culture Tested

- Powder
- CAS Number: 64485-93-4
- Formula:  $C_{16}H_{16}N_5O_7S_2Na$
- Molecular Weight: 477.4
- Soluble in Water
- Store at 2 to 6 °C
- Merck 13, 1946




**AVAILABLE PACKAGE SIZES**

1g	5g	25g	100g
----	----	-----	------

**C537 - CEFOTAXIME SOLUTION (100 MG/ML)**

Aqueous Solution  
Sterile Filtered  
Plant Tissue Culture Tested

- Liquid
- CAS Number: 64485-93-4
- Formula:  $C_{16}H_{16}N_5O_7S_2Na$
- Molecular Weight: 477.4
- Miscible with Water
- Store at -20 to 0 °C
- Ship on dry ice




**AVAILABLE PACKAGE SIZES**

10x1mL	10mL	100mL
--------	------	-------

**C1880 - CEFOTAXIME SOLUTION (250 MG/ML)**

Aqueous Solution  
Sterile Filtered  
Plant Tissue Culture Tested

- Liquid
- CAS Number: 64485-93-4
- Formula:  $C_{16}H_{16}N_5O_7S_2Na$
- Molecular Weight: 477.4
- Miscible with Water
- Store at -20 to 0 °C
- Ships on dry ice



**AVAILABLE PACKAGE SIZES**

10x1mL	10mL	25mL	100mL
--------	------	------	-------

**C526 - CHAPS**

3-[(3-Cholamidopropyl)dimethylammonio]-1-propanesulfonate  
CHAPS is a nondenaturing zwitterionic detergent that is typically used to solubilize membrane proteins.

- Powder
- CAS Number: 75621-03-3
- Formula:  $C_{32}H_{58}N_2O_7S$
- Molecular Weight: 614.89
- Soluble in Water
- Store at Room Temperature
- Merck 13, 2052

**AVAILABLE PACKAGE SIZES**

1g	5g	10g
----	----	-----

**C252 - CHLORAMPHENICOL**

2,2-Dichloro-*N*-[(1*R*,2*R*)2-hydroxy-1-(hydroxymethyl)-2-(4-nitrophenyl)ethyl]acetamide  
Plant Tissue Culture Tested

- Powder
- CAS Number: 56-75-7
- Formula: C<sub>11</sub>H<sub>12</sub>Cl<sub>2</sub>N<sub>2</sub>O<sub>5</sub>
- Molecular Weight: 323.13
- Soluble in Water at 2.5 mg/mL per tje Merck Index.
- Store at Room Temperature
- Merck **13**, 2087



**AVAILABLE PACKAGE SIZES**

100mg      5g      25g      100g

**C2010 - CHLORAMPHENICOL SOLUTION (10 MG/ML)**

2,2-Dichloro-*N*-[(1*R*,2*R*)2-hydroxy-1-(hydroxymethyl)-2-(4-nitrophenyl)ethyl]acetamide  
Sterile Filtered solution in 95% Ethanol  
Plant Tissue Culture Tested

- Liquid
- CAS Number: 56-75-7
- Formula: C<sub>11</sub>H<sub>12</sub>Cl<sub>2</sub>N<sub>2</sub>O<sub>5</sub>
- Molecular Weight: 323.13
- Miscible with Water
- Store at -20 to 0 °C
- Ships on dry ice



**AVAILABLE PACKAGE SIZES**

10x1mL      10mL      25mL      100mL

**C375 - CUPRIC SULFATE**

See Biochemicals Section for Complete Listing

**C466 - COPPER(II) SULFATE SOLUTION (4%)**

Copper(II) Sulfate Pentahydrate  
Typically used with Bicinchoninic Acid Solution (B496) in the determination of protein concentration.

- Liquid
- CAS Number: 7758-99-8
- Formula: CuSO<sub>4</sub>·5H<sub>2</sub>O
- Molecular Weight: 249.68
- Miscible with Water
- Store at Room Temperature
- Merck **13**, 2682



**AVAILABLE PACKAGE SIZES**

100mL      500mL      1L

**H276 - CTAB**

Hexadecyltrimethylammonium Bromide, HTAB, Centimide, Cetrimide, Cetrimonium bromide, *N,N,N*-trimethyl-1-hexadecanaminium bromide  
Molecular Biology Grade

- Powder
- CAS Number: 59-09-0
- Formula: CH<sub>3</sub>(CH<sub>2</sub>)<sub>15</sub>N(Br)(CH<sub>3</sub>)<sub>3</sub>
- Molecular Weight: 364.45
- Soluble in Water
- Store at Room Temperature



**AVAILABLE PACKAGE SIZES**

100g      500g

**H3818 - CTAB SOLUTION (100 MG/ML)**

Hexadecyltrimethylammonium Bromide, HTAB, Centimide, Cetrimide, Cetrimonium bromide, *N,N,N*-trimethyl-1-hexadecanaminium bromide.  
An aqueous solution of CTAB (H276) at 100 milligrams per milliliter. A cationic detergent with bactericidal activity against both gram-positive and gram-negative organisms.

- Liquid
- Sterile Filtered
- CAS Number: 57-09-0
- Formula: C<sub>19</sub>H<sub>42</sub>NBr
- Molecular Weight: 364.45
- Miscible with Water
- Store at Room Temperature



**AVAILABLE PACKAGE SIZES**

10mL      100mL

**C1989 - CYCLOHEXIMIDE**

Actidione, Naramycin A  
3-[2-(3,5-Dimethyl-2-oxocyclohexyl)-2-hydroxyethyl] glutarimide  
An antimycotic derived from *Streptomyces griseus*, which is active against many fungi, molds and yeasts; can be used as a plant growth regulator, since it induces ethylene production in plants.

- Powder
- CAS Number: 66-81-9
- Formula: C<sub>15</sub>H<sub>23</sub>NO<sub>4</sub>
- Molecular Weight: 281.4
- Soluble in Water, DMSO, Ethanol
- Store at 2 to 6 °C



**AVAILABLE PACKAGE SIZES**

1g      5g      25g

**C1796 - CYCLOHEXIMIDE SOLUTION (100 MG/ML)**

A solution of Cycloheximide at 100 milligrams per milliliter. Cycloheximide is also known as Actidione, Naramycin A 3-[2-(3,5-Dimethyl-2-oxocyclohexyl)-2-hydroxyethyl] glutarimide

An antimycotic derived from *Streptomyces griseus*, which is active against many fungi, molds and yeasts; can be used as a plant growth regulator, since it induces ethylene production in plants.

- Liquid
- CAS Number: 66-81-9
- Formula:  $C_{15}H_{23}NO_4$
- Molecular Weight: 281.4
- Miscible with Water
- Store at 2 to 6 °C

**AVAILABLE PACKAGE SIZES**

10x1mL                      10mL                      25mL

**P679 - DL-PHOSPHINOTHRICIN, MONOAMMONIUM SALT**

PPT; 2-Amino-4-(hydroxymethylphosphinyl)butanoic Acid, Monoammonium Salt; Glufosinate Ammonium

- Powder
- CAS Number: 77182-82-2
- Formula:  $C_5H_{15}N_2O_4P$
- Molecular Weight: 198.19
- Soluble in Water
- Store at Room Temperature
- Merck **13**, 7425



**AVAILABLE PACKAGE SIZES**

250mg                      1g

**G523 - DL-PHOSPHINOTHRICIN SOLUTION (1 MG/ML)**

PPT; 2-Amino-4-(hydroxymethylphosphinyl)butanoic Acid, Monoammonium Salt; Glufosinate Ammonium

Aqueous Solution  
Sterile Filtered

- Liquid
- CAS Number: 77182-82-2
- Formula:  $C_5H_{15}N_2O_4P$
- Molecular Weight: 198.19
- Miscible with Water
- Store at 2 to 6 °C



**AVAILABLE PACKAGE SIZES**

10mL                      100mL

**D241 - DIMETHYL SULFOXIDE**

DMSO; Methyl Sulfoxide  
Plant Tissue Culture Tested

Solidifies below and melts above 18.5°C.

- Liquid
- CAS Number: 67-68-5
- Formula:  $(CH_3)_2SO$
- Molecular Weight: 78.13
- Miscible with Water
- Store at Room Temperature
- Merck **13**, 3285



**AVAILABLE PACKAGE SIZES**

500mL                      1L                      4L

**D548 - DNA DENATURING SOLUTION**

Contains 1.5 M Sodium Chloride (87.66 g/L) and 0.5 M Sodium Hydroxide (20.0 g/L)

- Sterile Filtered
- Liquid
- Miscible with Water
- Store at Room Temperature



**AVAILABLE PACKAGE SIZES**

100mL                      500mL                      1L

**DNA EXTRACTION SYSTEM FOR PLANT GENOMIC DNA**

- Viogene® Plant Genomic DNA Extraction System
- Isolation of up to 50kb of Plant Genomic Material with predominant fragments of 20-30 kb, final yield dependant on kit type.
- Tissue is ground with liquid  $N_2$ , Incubated with RNase, lysate is sheared, gDNA is captured on silica-gel membrane.
- Isolation of gDNA (viral, mitochondrial, and chloroplast) from 1g of plant tissue (MaxiPrep) or 0.1g of plant tissue (MiniPrep).
- Purities typically range from  $A_{260}/A_{280} = 1.7-1.9$
- D2251 (MiniPrep Kit), D2275 (MaxiPrep Kit, Pictured Below)



PRODUCT NUMBER	ISOLATION CAPACITY	AVAILABLE PACKAGE SIZES	
D2251	Up to 40µg	50 Preps	250 Preps
D2275	Up to 1000µg	20 Preps	

## DNA EXTRACTION SYSTEM FOR PLASMID DNA

Great kit for cloning plasmid pieces that will be cut-out and ligated into vectors.

Downstream applications: Automated or Manual Sequencing, Restriction analysis, Cloning, and Transfection of most cell lines.

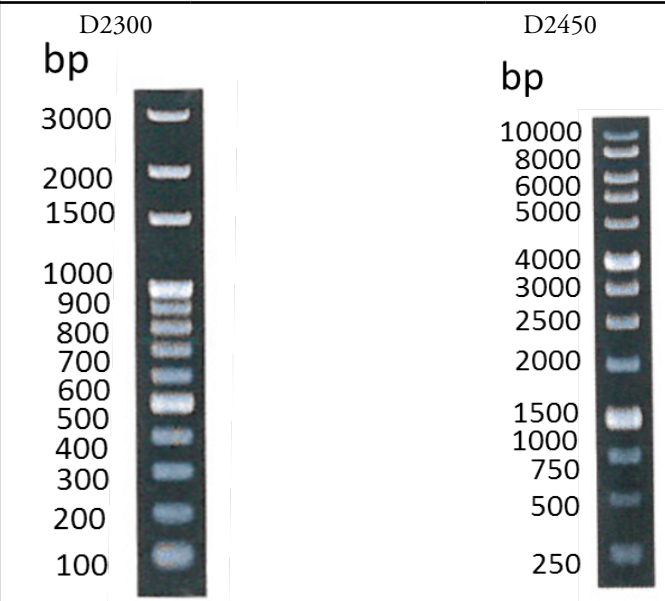
- Viogene® Plasmid DNA Extraction System
- DNA able to be processed at capacity dependant on kit type, which generally corresponds to 1-5 mL of E. Coli culture ( $OD_{600}=0.9-1.5$ ).
- Silica-gel membrane technology that binds up to 40µg of Plasmid DNA in the presence of chaotropic salts (MiniPlus Kit).
- Elution into low-salt buffer so that it doesn't impact sequencing, transfection, etc. (MiniPlus Kit).
- Diethylaminoethyl (DEAE) ligands bound to macropus silica resin for anion exchange in gravity flow. (MidiPlus and MaxiPlus kits)
- D2126 (MiniPlus Kit), D2179 (MidiPlus Kit), D2231 (MaxiPlus Kit, Pictured Below)



PRODUCT NUMBER	PROCESSING CAPACITY	AVAILABLE PACKAGE SIZES	
D2126	> 0.04mg	50 Preps	250 Preps
D2179	> 0.1mg	25 Preps	50 Preps
D2231	> 0.5mg	10 Preps	25 Preps

## DNA LADDERS

- Viogene® VioEasy™ DNA Ladders
- Linear dsDNA with blunt-ends.
- Pictured below are both DNA ladders in 2% LE Agarose (Product Number A1050).
- Preps per kit 166 preps in D2300, 167 preps in D2450.



PRODUCT NUMBER	LADDER SIZE	LANE AMOUNT	PACKAGE SIZES
D2300	100 bp	300 ng	50µg/0.5mL
D2450	1 kb	400 ng	67µg/0.5mL

## D544 - DNA NEUTRALIZING SOLUTION, pH 7.4

Sterile Filtered  
DNase/RNase Free

- Liquid
- Miscible with Water
- Store at Room Temperature



Components (g/L)	
Tris HCl (0.84 M)	132.20
Tris Base (0.16 M)	19.40
Sodium Chloride (1.5 M)	87.66
Contains sufficient HCl to adjust pH to 7.4	
AVAILABLE PACKAGE SIZES	
500mL	1L



E316 - ETHYLENEDIAMINETETRAACETIC ACID, FREE ACID		
EDTA; Edetic Acid Plant Tissue Culture Tested		
<ul style="list-style-type: none"> <li>• Powder</li> <li>• CAS Number: 60-00-4</li> <li>• Formula: <math>C_{10}H_{16}N_2O_8</math></li> <li>• Molecular Weight: 292.24</li> <li>• Soluble in KOH</li> <li>• Store at Room Temperature</li> <li>• Merck 13, 3546</li> </ul>		
AVAILABLE PACKAGE SIZES		
100g	500g	1Kg

E582 - EDTA SOLUTION 0.5 M, pH 8.0	
Sterile Filtered DNase/RNase Free	
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• CAS Number: 6381-92-6</li> <li>• Formula: <math>C_{10}H_{14}N_2O_8Na_2 \cdot 2H_2O</math></li> <li>• Molecular Weight: 372.24</li> <li>• Miscible with Water</li> <li>• Store at Room Temperature</li> <li>• Merck 13, 3543</li> </ul>	
Components (g/L)	
$Na_2EDTA \cdot 2H_2O$ (0.5 M)	186.12
Contains sufficient NaOH to adjust pH to 8.0	
AVAILABLE PACKAGE SIZES	
500mL	1L

E344 - ERYTHROMYCIN	
USP Grade Erythromycin A	
<ul style="list-style-type: none"> <li>• Powder</li> <li>• CAS Number: 114-07-8</li> <li>• Formula: <math>C_{37}H_{67}NO_{13}</math></li> <li>• Molecular Weight: 733.92</li> <li>• Soluble in EtOH at 2mg/mL per the Merck Index</li> <li>• Store at Room Temperature</li> <li>• Merck 13, 3714</li> </ul>	
AVAILABLE PACKAGE SIZES	
5g	25g

G810 - G418 SULFATE		
Geneticin® Geneticin is a registered trademark of Invitrogen Corporation.		
<ul style="list-style-type: none"> <li>• Powder</li> <li>• CAS Number: 108321-42-2</li> <li>• Formula: <math>C_{20}H_{40}N_4O_{10} \cdot 2H_2SO_4</math></li> <li>• Molecular Weight: 692.7</li> <li>• Soluble in Water</li> <li>• Store at 2 to 6 °C</li> </ul>		
AVAILABLE PACKAGE SIZES		
1g	5g	10g

G570 - GENTAMICIN SULFATE	
Gentamycin Sulfate	
<ul style="list-style-type: none"> <li>• Powder</li> <li>• CAS Number: 1405-41-0</li> <li>• Formula: <math>C_{21}H_{43}N_5O_7 \cdot H_2SO_4</math></li> <li>• Molecular Weight: 575.67</li> <li>• Soluble in Water</li> <li>• Store at 2 to 6 °C</li> <li>• Merck 13, 4403</li> </ul>	
Components (g/L)	
$Na_2EDTA \cdot 2H_2O$ (0.5 M)	186.12
Contains sufficient NaOH to adjust pH to 8.0	
AVAILABLE PACKAGE SIZES	
5g	10g

G3410 - GENTAMICIN SOLUTION (100 MG/ML)		
Gentamycin Sulfate Aqueous Solution Sterile Filtered		
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• CAS Number: 1405-41-0</li> <li>• Formula: <math>C_{21}H_{43}N_5O_7 \cdot H_2SO_4</math></li> <li>• Molecular Weight: 575.67</li> <li>• Miscible with Water</li> <li>• Store at 2 to 6 °C</li> </ul>		
AVAILABLE PACKAGE SIZES		
10mL	25mL	100mL

G3350 - GENTAMICIN SOLUTION (50 MG/ML)		
Gentamycin Sulfate Aqueous Solution Sterile Filtered		
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• CAS Number: 1405-41-0</li> <li>• Formula: <math>C_{21}H_{43}N_5O_7 \cdot H_2SO_4</math></li> <li>• Molecular Weight: 575.67</li> <li>• Miscible with Water</li> <li>• Store at 2 to 6 °C</li> </ul>		
AVAILABLE PACKAGE SIZES		
10mL	25mL	100mL

G3574 - GUAIACOL		
See Seed Testing Section for Complete Listing		



**H245 - HYDROCHLORIC ACID SOLUTION 1.0 N**

Hydrogen Chloride Solution 1.0 N; Muriatic Acid  
Plant Tissue Culture Tested  
Contains about 3.06% (w/v) concentrated Hydrochloric Acid per liter

- Liquid
- CAS Number: 7647-01-0
- Formula: HCl
- Molecular Weight: 36.46
- Miscible with Water
- Store at Room Temperature
- Merck 13, 4801

**AVAILABLE PACKAGE SIZES**

500mL                      1L                      4L

**H397 - HYGROMYCIN B**

O-6-Amino-6-deoxy-L-glycero-D-galacto-heptopyranosylidene-(1→2-3)-O-β-D-talopyranosyl-(1→5)-2-deoxy-N<sup>3</sup>-methyl-D-Streptamine  
From *Streptomyces hygroscopicus*

- Powder
- CAS Number: 31282-04-9
- Formula: C<sub>20</sub>H<sub>37</sub>N<sub>3</sub>O<sub>13</sub>
- Molecular Weight: 527.5
- Soluble in Water or PBS Buffer
- Store at 2 to 6 °C
- Merck 13, 4878

**AVAILABLE PACKAGE SIZES**

1g                      5g

**H385 - HYGROMYCIN B SOLUTION, 100 MG/ML IN DISTILLED WATER**

O-6-Amino-6-deoxy-L-glycero-D-galacto-heptopyranosylidene-(1→2-3)-O-β-D-talopyranosyl-(1→5)-2-deoxy-N<sup>3</sup>-methyl-D-Streptamine  
Sterile Filtered  
From *Streptomyces hygroscopicus*

- Liquid
- CAS Number: 31282-04-9
- Formula: C<sub>20</sub>H<sub>37</sub>N<sub>3</sub>O<sub>13</sub>
- Molecular Weight: 527.5
- Miscible with Water or PBS Buffer
- Store at 2 to 6 °C; Do Not Freeze

**AVAILABLE PACKAGE SIZES**

10x1mL                      10mL

**H370 - HYGROMYCIN B SOLUTION, 50 MG/ML IN PBS BUFFER**

O-6-Amino-6-deoxy-L-glycero-D-galacto-heptopyranosylidene-(1→2-3)-O-β-D-talopyranosyl-(1→5)-2-deoxy-N<sup>3</sup>-methyl-D-Streptamine  
Sterile Filtered  
From *Streptomyces hygroscopicus*

- Liquid
- CAS Number: 31282-04-9
- Formula: C<sub>20</sub>H<sub>37</sub>N<sub>3</sub>O<sub>13</sub>
- Molecular Weight: 527.5
- Miscible with Water or PBS Buffer
- Store at 2 to 6 °C; Do Not Freeze

**AVAILABLE PACKAGE SIZES**

10x1mL                      20mL

**I373 - ISOPROPYL-β-D-THIOGALACTOPYRANOSIDE**

IPTG

- Powder
- CAS Number: 367-93-1
- Formula: C<sub>9</sub>H<sub>18</sub>O<sub>5</sub>S
- Molecular Weight: 238.3
- Soluble in Water
- Store at 2 to 6 °C

**AVAILABLE PACKAGE SIZES**

1g                      5g                      25g

**K378 - KANAMYCIN MONOSULFATE**

O-3-Amino-3-deoxy-α-D-glucopyranosyl-(1→6)-O-[6-amino-6-deoxy-α-D-glucopyranosyl-(1→4)]-2-deoxy-D-Streptamine Monosulfate  
Plant Tissue Culture Tested

- Powder
- CAS Number: 25389-94-0
- Formula: C<sub>18</sub>H<sub>36</sub>N<sub>4</sub>O<sub>11</sub> • H<sub>2</sub>SO<sub>4</sub>
- Molecular Weight: 582.6
- Soluble in Water
- Store at Room Temperature
- Merck 13, 5299


**AVAILABLE PACKAGE SIZES**

5g                      10g                      25g

**K4751 - KANAMYCIN MONOSULFATE SOLUTION (100 MG/ML)**

Sterile Filtered  
Aqueous Solution  
Plant Tissue Culture Tested

- Liquid
- CAS Number: 25389-94-0
- Formula:  $C_{18}H_{16}N_4O_{11} \cdot H_2SO_4$
- Molecular Weight: 582.6
- Miscible with Water
- Store at 2 to 6 °C
- Ship on Blue Ice





**AVAILABLE PACKAGE SIZES**

10mL	25mL	100mL
------	------	-------

**K586 - KANAMYCIN MONOSULFATE SOLUTION (50 MG/ML)**

Sterile Filtered  
Aqueous Solution  
Plant Tissue Culture Tested

- Liquid
- CAS Number: 25389-94-0
- Formula:  $C_{18}H_{16}N_4O_{11}$
- Molecular Weight: 582.6
- Miscible with Water
- Store at 2 to 6 °C
- Ship on Blue Ice

**AVAILABLE PACKAGE SIZES**

10x1mL	10mL	25mL	100mL
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**K559 - KASUGAMYCIN HYDROCHLORIDE MONOHYDRATE**

3-O-[2-amino-4-[(carboxyiminomethyl)amino]-2,3,4,6-tetra-deoxy- $\alpha$ -D-arabino-hexopyranosyl]-D-chiro-inositol Hydrochloride Monohydrate  
Plant Tissue Culture Tested

- Powder
- CAS Number: 6980-18-3
- Formula:  $C_{14}H_{25}N_3O_9 \cdot HCl \cdot H_2O$
- Molecular Weight: 433.8
- Soluble in Water
- Store at 2 to 6 °C

**AVAILABLE PACKAGE SIZES**

1g	5g	25g
----	----	-----

**LB BROTHS & AGARS**

See Microbiology Section for Complete Listing




**MALT EXTRACT BROTH & AGAR**

See Microbiology Section for Complete Listing

**M649 -  $\beta$ -MERCAPTOETHANOL**

2-Mercaptoethanol, 2-Me, 2-Thioethanol, Thioglycol, 2-Hydroxyethylmercaptan  
Molecular Biology Grade  
DNase/RNase Free

- Liquid
- CAS Number: 60-24-2
- Formula:  $HSCH_2CH_2OH$
- Molecular Weight: 78.13
- Miscible with Water
- Concentration: 14.3 M
- Density: 1.114 g/mL at 20 °C
- Store at Room Temperature

**AVAILABLE PACKAGE SIZES**

Inquire about Package Size, Pricing, and more Information

**AVAILABLE PACKAGE SIZES**



Inquire about Package Size, Pricing, and more Information

**NEW PRODUCT**

**M5600 - MEROPENEM TRIHYDRATE**

(1R,5S,6S)-2-[(3S,5S)-5-(dimethylaminocarbonyl)pyrrolidin-3-ylthio]-6-[(R)-1-hydroxyethyl]-1-methylcarbapen-2-em-3-carboxylic acid trihydrate

- Powder
- CAS Number: 119478-56-7
- Formula:  $C_{17}H_{25}N_3O_5S \cdot 3H_2O$
- Molecular Weight: 437.51
- Soluble in DMSO
- Store at -20°C
- Merck 13, 5926

**AVAILABLE PACKAGE SIZES**

10mg	100mg	1g
------	-------	----

**AVAILABLE PACKAGE SIZES**

10mg	100mg	1g
------	-------	----

**M825 - MES, MONOHYDRATE**

2-(N-Morpholino)ethanesulfonic Acid, Free Acid  
Plant Tissue Culture Tested  
Useful pH range: 5.5 - 6.7  
pKa @ 25°C = 6.1

- Powder
- CAS Number: 145224-94-8
- Formula:  $C_6H_{13}NO_4S \cdot H_2O$
- Molecular Weight: 213.3
- Soluble in Water
- Store at Room Temperature
- Merck 13, 5929

**AVAILABLE PACKAGE SIZES**


100g	500g	1Kg
------	------	-----





**AVAILABLE PACKAGE SIZES**

100g	500g	1Kg
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**M5781 - METHYLENE BLUE**

See Seed Testing Section for Complete Listing

<b>M572 - MOPS-EDTA-SODIUM ACETATE BUFFER SOLUTION (10x)</b>	
MESA Buffer Sterile Filtered DNase/RNase Free	
<ul style="list-style-type: none"> <li>Liquid</li> <li>Miscible with Water</li> <li>Store at Room Temperature</li> </ul>	
Components (g/L)	
MOPS (0.4 M)	83.71
Sodium Acetate (0.1 M)	8.20
Na <sub>2</sub> EDTA•2H <sub>2</sub> O (0.01 M)	7.4
AVAILABLE PACKAGE SIZES	
100mL	500mL 1L
<b>M631 - MOPS, FREE ACID</b>	
3-[N-Morpholino]propanesulfonic acid, Free Acid Useful pH range: 6.5-7.9 DNase/RNase Tested pKa @ 25° C = 7.15	
<ul style="list-style-type: none"> <li>Powder</li> <li>CAS Number: 1132-61-2</li> <li>Formula: C<sub>7</sub>H<sub>15</sub>NO<sub>4</sub>S</li> <li>Molecular Weight: 209.3</li> <li>Soluble in Water</li> <li>Store at Room Temperature</li> <li>Merck 13, 6288</li> </ul>	
AVAILABLE PACKAGE SIZES	
500g	1Kg
<b>M565 - MTT</b>	
3-[4,5-Dimethylthiazol-2-yl]-2,5-diphenyltetrazolium Bromide; Thiazolyl Blue Tetrazolium Bromide	
<ul style="list-style-type: none"> <li>Powder</li> <li>CAS Number: 298-93-1</li> <li>Formula: C<sub>18</sub>H<sub>16</sub>N<sub>5</sub>SBr</li> <li>Molecular Weight: 414.32</li> <li>Soluble in Water</li> <li>Store at 2 to 6 °C</li> </ul>	
AVAILABLE PACKAGE SIZES	
1g	5g 10g
<b>M569 - MUG</b>	
4-Methylumbelliferyl-β-D-glucuronide Trihydrate	
<ul style="list-style-type: none"> <li>Powder</li> <li>CAS Number: 6160-80-1</li> <li>Formula: C<sub>16</sub>H<sub>16</sub>O<sub>9</sub>•3H<sub>2</sub>O</li> <li>Molecular Weight: 406.4</li> <li>Soluble in DMSO</li> <li>Store at -20 to 0 °C</li> </ul>	
AVAILABLE PACKAGE SIZES	
100mg	1g

<b>N584 - NEOMYCIN SULFATE</b>	
<ul style="list-style-type: none"> <li>Powder</li> <li>CAS Number: 1405-10-3</li> <li>Formula: C<sub>23</sub>H<sub>46</sub>N<sub>6</sub>O<sub>13</sub>•3H<sub>2</sub>SO<sub>4</sub></li> <li>Molecular Weight: 908.9</li> <li>Soluble in Water</li> <li>Store at 2 to 6 °C</li> <li>Merck 13, 6482</li> </ul>	
AVAILABLE PACKAGE SIZES	
25g	100g
<b>N5967 - NEOMYCIN SOLUTION (50 MG/ML)</b>	
Sterile Filtered Aqueous Solution	
<ul style="list-style-type: none"> <li>Liquid</li> <li>CAS Number: 1405-10-3</li> <li>Formula: C<sub>23</sub>H<sub>46</sub>N<sub>6</sub>O<sub>13</sub>•3H<sub>2</sub>SO<sub>4</sub></li> <li>Molecular Weight: 908.9</li> <li>Miscible with Water</li> <li>Store at -20 to 0 °C</li> <li>Ships on dry ice</li> </ul>	  
AVAILABLE PACKAGE SIZES	
10mL	25mL 100mL
<b>N618 - 4-NITROPHENYL-β-D-GLUCURONIDE</b>	
PNPG	
<ul style="list-style-type: none"> <li>Powder</li> <li>CAS Number: 10344-94-2</li> <li>Formula: C<sub>12</sub>H<sub>13</sub>NO<sub>9</sub></li> <li>Molecular Weight: 315.2</li> <li>Soluble in DMSO</li> <li>Store at -20 to 0 °C</li> </ul>	
AVAILABLE PACKAGE SIZES	
250mg	1g
<b>N604 - 2-NITROPHENYL-β-D-GALACTOPYRANOSIDE</b>	
ONPG	
<ul style="list-style-type: none"> <li>Powder</li> <li>CAS Number: 369-07-3</li> <li>Formula: C<sub>12</sub>H<sub>15</sub>NO<sub>8</sub></li> <li>Molecular Weight: 301.3</li> <li>Soluble in DMSO</li> <li>Store at -20 to 0 °C</li> </ul>	
AVAILABLE PACKAGE SIZES	
1g	5g 25g










**T7859 - TETRACYCLINE HYDROCHLORIDE SOLUTION (10 MG/ML)**

[4S-(4 $\alpha$ ,4a $\alpha$ ,5a $\alpha$ ,6 $\beta$ ,12a $\alpha$ )]-4-(Dimethylamino)-1,4,4a,5,5a,6-11,12a-octahydro-3,6,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-2-naphthacencarboxamide Hydrochloride in DMSO

- Liquid
- CAS Number: 64-75-5
- Formula: C<sub>22</sub>H<sub>24</sub>N<sub>2</sub>O<sub>8</sub>•HCl
- Molecular Weight: 480.94
- Miscible with Water
- Store at -20 to 0 °C
- Ships on dry ice



**AVAILABLE PACKAGE SIZES**

10mL	25mL	100mL
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**FOR MORE INFORMATION ABOUT ANTIBIOTICS**

See "Figure 30. Antibiotics/Antimycotics/Selection Agent Guide" on page 258 in the Technical Section.

**T869 - TIMENTIN**

Ticarcillin Disodium Salt/ Potassium Clavulanate mixture (15:1)  
Plant Tissue Culture Tested

- Powder
- CAS Number: 4697-14-7 / 61177-45-5
- Formula: C<sub>15</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>6</sub>S<sub>2</sub> / C<sub>8</sub>H<sub>8</sub>KNO<sub>5</sub>
- Molecular Weight: 428.4 / 237.3
- Soluble in Water
- Store at 2 to 6 °C




**AVAILABLE PACKAGE SIZES**

2g	5g	10g	25g	100g
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**T767 - TIMENTIN SOLUTION (100 MG/ML)**

Ticarcillin Disodium Salt/ Potassium Clavulanate Mixture (15:1)  
Sterile Filtered  
Plant Tissue Culture Tested

- Liquid
- CAS Number: 4697-14-7 / 61177-45-5
- Formula: C<sub>15</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>6</sub>S<sub>2</sub> / C<sub>8</sub>H<sub>8</sub>KNO<sub>5</sub>
- Molecular Weight: 428.4 / 237.3
- Miscible with Water
- Store at -20 to 0 °C
- Ship on dry ice




**AVAILABLE PACKAGE SIZES**

10x1mL	10mL	25mL	100mL
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**T7869 - TIMENTIN SOLUTION (50 MG/ML)**

Ticarcillin Disodium Salt/ Potassium Clavulanate Mixture (15:1)  
Sterile Filtered  
Aqueous Solution  
Plant Tissue Culture Tested

- Liquid
- CAS Number: 4697-14-7 / 61177-45-5
- Formula: C<sub>15</sub>H<sub>14</sub>N<sub>2</sub>Na<sub>2</sub>O<sub>6</sub>S<sub>2</sub> / C<sub>8</sub>H<sub>8</sub>KNO<sub>5</sub>
- Molecular Weight: 428.4 / 237.3
- Miscible with Water
- Store at -20 to 0 °C
- Ships on dry ice




**AVAILABLE PACKAGE SIZES**

10x1mL	10mL	25mL	100mL
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**T834 - TOBRAMYCIN SULFATE**

USP Grade  
O-3-Amino-3-deoxy- $\alpha$ -D-glucopyranosyl-(1 $\rightarrow$ 6)-O-[2,6-diamino-2,3,6-trideoxy- $\alpha$ -D-ribo-hexopyranosyl-(1 $\rightarrow$ 4)]-2-deoxy-D-Streptamine Sulfate

- Powder
- CAS Number: 79645-27-5
- Formula: (C<sub>18</sub>H<sub>37</sub>N<sub>5</sub>O<sub>9</sub>)<sub>2</sub>•5H<sub>2</sub>SO<sub>4</sub>
- Molecular Weight: 1425.4
- Soluble in Water
- Store at 2 to 6 °C
- Merck 13, 9567




**AVAILABLE PACKAGE SIZES**

1g	5g	25g
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**T769 - TRIS ACETATE EDTA BUFFER SOLUTION (50x), PH 8.1  $\pm$  0.1**

TAE Buffer used for DNA electrophoresis  
Sterile Filtered  
DNAse/RNAse Free

- Liquid
- Miscible with Water
- Store at Room Temperature



Components (g/L)	
Tris Base	242.28
EDTA, Free Acid	14.61
Glacial Acetic Acid	57.1 mL

**AVAILABLE PACKAGE SIZES**

500mL	1L
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**FOR MORE INFORMATION ON PREPARING TRIS BUFFERS**


See "Figure 40. Tris Buffer Preparation Guide" on page 267 in the Technical Section.


T838 - TRIS BASE	
2-Amino-2-hydroxymethyl-1,3-propanediol	
<ul style="list-style-type: none"> <li>• Powder</li> <li>• CAS Number: 77-86-1</li> <li>• Formula: <math>C_4H_{11}NO_3</math></li> <li>• Molecular Weight: 121.13</li> <li>• Soluble in Water</li> <li>• Store at Room Temperature</li> <li>• Merck 13, 9842</li> </ul>	
AVAILABLE PACKAGE SIZES	
100g	500g      1Kg      5Kg
T831 - TRIS BORATE EDTA BUFFER	
TBE Buffer Use 17.02 grams to make 1 liter of 1x buffer solution	
<ul style="list-style-type: none"> <li>• Powder</li> <li>• Soluble in Water when pH = 8.5</li> <li>• Store at Room Temperature</li> </ul>	
Components (g/L)	
Tris Base	10.78
Boric Acid	5.5
$Na_2EDTA \cdot 2H_2O$	0.74
AVAILABLE PACKAGE SIZES	
100g	500g
T774 - TRIS BORATE EDTA BUFFER SOLUTION (10x)	
TBE Buffer Sterile Filtered DNAse/RNAse Free	
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• Miscible with Water</li> <li>• Store at Room Temperature</li> </ul>	
Components (g/L)	
Tris Base	107.8
Boric Acid	55.0
$Na_2EDTA \cdot 2H_2O$	7.4
AVAILABLE PACKAGE SIZES	
500mL	1L

T773 - TRIS BORATE EDTA BUFFER SOLUTION (5x)	
TBE Buffer Sterile Filtered DNAse/RNAse Free	
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• Miscible with Water</li> <li>• Store at Room Temperature</li> </ul>	
Components (g/L)	
Tris Base	53.9
Boric Acid	27.5
$Na_2EDTA \cdot 2H_2O$	3.7
AVAILABLE PACKAGE SIZES	
500mL	1L
T855 - TRIS-EDTA BUFFER	
TE Buffer Use 1.58 grams to make 1 liter of 1x buffer solution	
<ul style="list-style-type: none"> <li>• Powder</li> <li>• Soluble in Water</li> <li>• Store at Room Temperature</li> </ul>	
Components (g/L)	
Tris Base	1.21
$Na_2EDTA \cdot 2H_2O$	0.37
AVAILABLE PACKAGE SIZES	
100g	500g
T752 - TRIS EDTA BUFFER SOLUTION (10X), pH 8.0	
TE Buffer Sterile Filtered DNAse/RNAse Free	
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• Miscible with Water</li> <li>• Store at Room Temperature</li> </ul>	
Components (g/L)	
Tris Base	1.21
$Na_2EDTA \cdot 2H_2O$	0.37
Contains sufficient HCl to adjust pH to 8.0	
AVAILABLE PACKAGE SIZES	
500mL	1L


T814 - TRIS-GLYCINE BUFFER	
TG Buffer Use 17.44 grams to make 1 liter of 1x buffer solution	
<ul style="list-style-type: none"> <li>• Powder</li> <li>• Soluble in Water</li> <li>• Store at Room Temperature</li> </ul>	
Components (g/L)	
Tris Base	3.03
Glycine	14.41
AVAILABLE PACKAGE SIZES	
100g	500g


T821 - TRIS GLYCINE SDS BUFFER	
TG-SDS Buffer / TGS Buffer Use 18.44 grams to make 1 liter of 1x buffer solution	
<ul style="list-style-type: none"> <li>• Powder</li> <li>• Soluble in Water</li> <li>• Store at Room Temperature</li> </ul>	
Components (g/L)	
Tris Base	3.03
Glycine	14.41
Sodium Dodecyl Sulfate	1.00
AVAILABLE PACKAGE SIZES	
100g	500g




T749 - TRIS-GLYCINE-SDS BUFFER SOLUTION (10X)	
Protein Running Buffer; TG-SDS Buffer Sterile Filtered DNase Free	
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• Miscible with Water</li> <li>• Store at Room Temperature</li> </ul> 	
Components (g/L)	
Tris Base	30.28
Glycine	144.14
Sodium Dodecyl Sulfate	10.0
AVAILABLE PACKAGE SIZES	
500mL	1L

T764 - TRIS HCL SOLUTION 1.0 M, PH 7.5	
Sterile Filtered	
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• Miscible with Water</li> <li>• Store at Room Temperature</li> </ul> 	
Components (g/L)	
Tris Base	121.14
Contains sufficient HCl to adjust pH to 7.5	
AVAILABLE PACKAGE SIZES	
500mL	1L

T858 - TRIS HYDROCHLORIDE		
2-Amino-2-hydroxymethyl-1,3-propanediol Hydrochloride		
<ul style="list-style-type: none"> <li>• Powder</li> <li>• CAS Number: 1185-53-1</li> <li>• Formula: <math>C_4H_{11}NO_3 \cdot HCl</math></li> <li>• Molecular Weight: 157.6</li> <li>• Soluble in Water</li> <li>• Store at Room Temperature</li> </ul>		
AVAILABLE PACKAGE SIZES		
100g	500g	1Kg

T8100 - TRITON X-100		
Octoxynol; X-100; 4-(1,1,3,3-Tetramethylbutyl)phenyl-polyethylene glycol; t-Octylphenoxy polyethoxyethanol; Polyethylene glycol tert-octylphenyl ether Triton X-100 is a nonionic surfactant. It's often used to solubilized proteins in molecular biology applications.		
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• CAS Number: 9002-93-1</li> <li>• Formula: <math>C_{14}H_{22}O(C_2H_4O)_n</math> (n = 9 to 10)</li> <li>• Molecular Weight: Average 625</li> <li>• Miscible with Water</li> <li>• Store at Room Temperature</li> </ul> 		
AVAILABLE PACKAGE SIZES		
10mL	25mL	100mL

V870 - VANCOMYCIN HYDROCHLORIDE			
Plant Tissue Culture Tested			
<ul style="list-style-type: none"> <li>• Powder</li> <li>• CAS Number: 1404-93-9</li> <li>• Formula: <math>C_{66}H_{75}Cl_2N_9O_{24} \cdot HCl</math></li> <li>• Molecular Weight: 1485.73</li> <li>• Soluble in Water</li> <li>• Store at 2 to 6 °C</li> <li>• Merck 13, 9995</li> </ul> 			
AVAILABLE PACKAGE SIZES			
1g	5g	10g	25g

V8370 - VANCOMYCIN HYDROCHLORIDE SOLUTION (100 MG/ML)			
Aqueous Solution Sterile Filtered Plant Tissue Culture Tested			
<ul style="list-style-type: none"> <li>• Liquid</li> <li>• CAS Number: 1404-93-9</li> <li>• Formula: <math>C_{66}H_{75}Cl_2N_9O_{24} \cdot HCl</math></li> <li>• Molecular Weight: 1485.73</li> <li>• Miscible with Water</li> <li>• Store at -20 to 0 °C</li> <li>• Ships on dry ice</li> </ul>   			
AVAILABLE PACKAGE SIZES			
10x1mL	10mL	25mL	100mL

## W783 - WATER, PLANT TISSUE CULTURE GRADE

Sterile Filtered  
Plant Tissue Culture Tested  
DNase/RNase Free

- Liquid
- CAS Number: 7732-18-5
- Formula: H<sub>2</sub>O
- Molecular Weight: 18.02
- Store at Room Temperature
- Merck 13, 10098



### AVAILABLE PACKAGE SIZES

1L 3.9L

## W887 - WILKINS-CHALGREN AGAR

See Microbiology Section for Complete Listing

## X874 - X-GAL

5-Bromo-4-chloro-3-indolyl-β-D-galactopyranoside

- Powder
- CAS Number: 7240-90-6
- Formula: C<sub>14</sub>H<sub>15</sub>BrClNO<sub>6</sub>
- Molecular Weight: 408.63
- Soluble in DMSO or KOH
- Store at -20 to 0 °C

### AVAILABLE PACKAGE SIZES

100mg 500mg 1g

## HOW TO MAKE A GUS GENE STAINING SOLUTION

See "Figure 31. GUS Gene Staining Solution Formulation" on page 260 in the Technical Section.

## X877 - X-GLUC, MONOCYCLOHEXYL AMMONIUM SALT

X-GlcA; 5-Bromo-4-chloro-3-indolyl-β-D-glucuronic Acid, Monocyclohexyl Ammonium Salt

- Powder
- CAS Number: 114162-64-0
- Formula: C<sub>20</sub>H<sub>26</sub>BrClN<sub>2</sub>O<sub>7</sub>
- Molecular Weight: 521.8
- Soluble in DMSO or KOH
- Store at -20 to 0 °C

### AVAILABLE PACKAGE SIZES

100mg 500mg 1g 5g

## X871 - X-GLUC, SODIUM SALT

5-Bromo-4-chloro-3-indolyl-β-D-glucuronic Acid, Sodium Salt

- Powder
- CAS Number: 129541-41-9
- Formula: C<sub>14</sub>H<sub>12</sub>BrClNaO<sub>7</sub>
- Molecular Weight: 444.6
- Soluble in DMSO or KOH
- Store at -20 to 0 °C

### AVAILABLE PACKAGE SIZES

100mg 500mg 1g 5g

## X8451 - X-GLUC STOCK SOLUTION (20 MG/ML)

A solution of X-Gluc (X877) at 20 milligrams per milliliter in DMSO (D241).

5-bromo-4-chloro-3-indolyl-β-D-glucuronic Acid Monocyclohexyl Ammonium Salt

- Liquid
- CAS Number: 114162-64-0
- Formula: C<sub>20</sub>H<sub>26</sub>BrClN<sub>2</sub>O<sub>7</sub>
- Molecular Weight: 521.8
- Miscible with Water
- Store at -20°C
- Light Sensitive



### AVAILABLE PACKAGE SIZES

5mL 25mL

## Y889 - YEP MEDIUM

See Microbiology Section for Complete Listing

## Y893 - YMB MEDIUM

See Microbiology Section for Complete Listing

## CUSTOM MEDIA & SERVICES



*Phyto*Technology Laboratories® offers custom manufacturing and testing services. For more information please see page 12.

- Custom Dry Powder Media
- Custom Liquid Media
- Custom Packaging
- Testing Services