Dulbecco's Modified Eagle Medium (DMEM)

With 4.5gms Glucose per litre, 1mM Sodium pyruvate, L-Glutamine, 1.5gms per litre of Sodium bicarbonate
1X Liquid Cell Culture Medium

Product Code: AL007S

Product Description :

Dulbecco's Modified Eagle Medium (DMEM) is one of the most widely used modification of Eagle's medium. DMEM is a modification of Basal Medium Eagle (BME) that contains four-fold concentration of amino acids and vitamins. Additionally, the formulation also includes glycine, serine and ferric nitrate. The original formulation contains 1000 mgs/L of glucose and was originally used to culture embryonic mouse cells.

DMEM high glucose is a further modification of original DMEM and contains 4500mgs/L of glucose. The additional glucose has proved to be useful in cultivating various other cell lines including primary cultures of mouse and chicken cells as well as various normal and transformed cell lines.

AL007S is Dulbecco's Modified Eagle Medium with 4.5gms glucose per litre, L-glutamine, 1.5gms per litre sodium bicarbonate and 1mM sodium pyruvate. Users are advised to review the literature for recommendations regarding medium supplementation and physiological growth requirements specific for different cell lines.

Composition :

Ingredients	mg/L
INORGANIC SALTS	
Calcium chloride dihydrate	265.000
Ferric nitrate nonahydrate	0.100
Magnesium sulphate anhydrous	97.720
Potassium chloride	400.000
Sodium bicarbonate	1500.000
Sodium chloride	6400.000
Sodium phosphate monobasic anhydrous	109.000
AMINO ACIDS	
Glycine	30.000
L-Arginine hydrochloride	84.000
L-Cystine dihydrochloride	62.570
L-Glutamine	584.000
L-Histidine hydrochloride monohydrate	42.000
L-Isoleucine	105.000
L-Leucine	105.000
L-Lysine hydrochloride	146.000
L-Methionine	30.000
L-Phenylalanine	66.000
L-Serine	42.000
L-Threonine	95.000
L-Tryptophan	16.000
L-Tyrosine disodium salt	103.790
L-Valine	94.000
VITAMINS	
Choline chloride	4.000
D-Ca-Pantothenate	4.000
Folic acid	4.000
Nicotinamide	4.000
Pyridoxal 5 phosphate	4.000
Riboflavin	0.400
Thiamine hydrochloride	4.000
i-Inositol	7.200
OTHERS	
D-Glucose	4500.000
Phenol red sodium salt	15.900
Sodium pyruvate	110.000

Quality Control:

Appearance
Orangish red colored, clear solution.

pH
7.00 -7.60

Osmolality in mOsm/Kg H2O
285.00 -325.00

Sterility
No bacterial or fungal growth is observed after 14 days of incubation as per specification.

Cultural Response
The growth promotion capacity of the medium is assessed qualitatively by analyzing the cells for the morphology and quantitatively by estimating the cell counts and comparing it with a control medium through three subcultures.

Endotoxin Content
NMT 5EU/ml

Storage and Shelf Life:

Store at 2-8°C away from bright light.
Shelf life is 12 months.
Use before expiry date given on the product label.

Revision : 1 / 2011

Agar powder,Bacteriological Grade

GRM026

Agar Powder is specifically produced for use in bacteriological culture media and plant tissue culture media, where clarity and compatibility are not of prime importance. It is used in culture media in following concentrations : For Routine Media: 1.4 to 1.6% ,For Soft Media: 0.5% ,For Semi-solid Media: 0.15%, For Media with Reduced Oxygen Tension: 0.05 - 0.1% ,For Extra Hard Gels, for inhibiting swarming of Proteus species: 2.5% - 3.0%

Principle And Interpretation

Agar is prepared from species of red seaweeds specially selected for their Agar gel production, using stainless steel equipment, observing good manufacturing practice. It is a Bacteriological grade powder with high mineral / metal content and is advantageous to use in certain media. It is a cream coloured powder having particle size that can pass through 40 ASTM Screen. When suspended in cold water, it swells but does not dissolve. However, it readily dissolves in boiling water and solubility is facilitated by soaking the powder in cold water.

Quality Control

Appearance

Cream coloured powder. homogenous free flowing powder

Solubility

Freely soluble in hot water at temperatures above 85°C. Insoluble cold water.

Clarity

A firm solid, clear to slightly opalescent gel is formed at a concentration of 1.5% at 38-40°C.

Dye Diffusion

Agar dye diffusion :- 18-20mm

Reaction

Reaction of 1.5% w/v aqueous solution at 25 °C
pH : 6.50 - 7.50

Identification test

As per method specified in USP 37,NF32;

A: Infrared absorption.

B:With Iodine, some fragments of agar appear bluish black, with some areas reddish to violet.

C: Agar forms a clear liquid, which congeals at 30 to 39°C to form a firm resilient gel, which does not melt below 80°C.

Microbial Load:

Total aerobic microbial count (cfu/gm)

By plate method when incubated at 30-35°C for not less than 3 days.

Bacterial Count : <= 1000 CFU/gram

Total Yeast and mould count (cfu/gm)

By plate method when incubated at 20-25°C for not less than 5 days.

Yeast & mould Count : <= 100 CFU/gram

Test for Pathogens

1. *Escherichia coli*-Negative in 10 gms of sample 2. *Salmonella* species-Negative in 10 gms of sample 3. *Pseudomonas aeruginosa*-Negative in 10 gms of sample 4. *Staphylococcus aureus*- Negative in 10 gms of sample 5. *Candida albicans*- Negative in 10 gms of sample 6. *Clostridia*- Negative in 10 gms of sample

Chemical Analysis

Gelling temperature

38-40°C

Melting temperature

>=85ºC

Water(KF)

<=20%

Calcium
<= 0.1%
Heavy metals (as Pb)
<= 40 ppm
Lead
<=10 ppm
Arsenic(As)
<=3 ppm
Sulphated ash
<=6.5%
Acid insoluble Matter (on dry basis)
<=0.5%
Foreign organic matter
<=1.0%
Foreign insoluble matter
<=15 mg in 7.5 gm of Agar
Gelling Strength
>= 800 g/cm^2
Test for Water absorption
As per method specified in USP 37,NF 32, NMT 75 ml of water is absorbed by 5.0 g of agar
Test for Gelatin
As per method specified in USP 37,NF 32, No formation of yellow precipitate
Test for Starch
As per method specified in USP 37,NF 32 ,No Formation of blue colour on addition of iodine
Growth Promotion Test
As per method specified in USP 37,NF32
Cultural response
Cultural response observed after an incubation at 35-37°C for 18-24 hours by preparing Nutrient Agar (M001) using Agar Powder, Bacteriological as an ingredient.
Cultural Response

Organism	Growth
Escherichia coli ATCC 25922	Luxuriant
Pseudomonas aeruginosa ATCC 27853	Luxuriant
Staphylococcus aureus ATCC 25923	Luxuriant
Salmonella Typhi ATCC 6539	Luxuriant
Streptococcus pyogenes ATCC 19615	Luxuriant

Storage and Shelf Life
Store below 30°C. Use before expiry date on the label.

CE

Chloramine T trihydrate, Hi-AR™/ACS GRM499

Product Identifier

CAS No.	:	7080-50-4
EC No.	:	204-854-7
Molecular Formula	:	$C_7H_7ClNNaO_2S.3H_2O$
Molecular Weight	:	281.69
HS Code	:	2935 00 90
Storage	:	Below 30°C
Shelf life	:	4 years

Technical Specification

Appearance	:	White to slightly yellow crystals or powder
Solubility	:	100 mg soluble in 1 mL of water
pH (5% in water at 25°C)	:	8.00 - 11.00
Insoluble matter in absolute ethanol	:	<= 1.50%
Assay (Iodometry)	:	99.00 - 103.00%

Safety Information

Hazard Pictogram(s) :

Signal Word	:	Danger
Hazard Statement(s)	:	H302- H314- H334
Precautionary Statement(s)	:	P260- P280- P284- P303+P361+P353- P304+P340+P310- P305+P351+P338
UN No.	:	3263
Class	:	8
Packing Group	:	III
RTECS	:	Not available
WGK	:	2

Product Information

GRM1233 Guar gum powder

Product Number		Packing
GRM1233	:	500G

Product Information

Product Code	:	GRM1233
Product Name	:	Guar gum powder
Synonym	:	Guar
CAS No.	:	9000-30-0
EC No.	:	232-536-8
HS Code	:	1302 32 90
Shelf Life	:	4 years

Technical Specification

Appearance	:	White to beige to brown free flowing powder
Solubility	:	Dispersible in hot or cold water forming a colloidal solution
Starch	:	Passes test
Acid insoluble matter	:	<= 7.0%
Sulphated ash	:	<= 1.5%
Protein	:	<= 10.0%
Galactomannans	:	>= 70.00%
Loss on drying (at 105°C, 5hr)	:	<= 15.0%

Risk and Safety Information

WGK	:	1
RTECS	:	MG0185000
Storage Temperature(°C)	:	Store below 30°C

Transport Information

Marine Pollutant	:	No
ADR/RID	:	Not Dangerous Goods
IMDG	:	Not Dangerous Goods
IATA	:	Not Dangerous Goods

A-516, Swastik Disha Business Park, Via Vadhani Indl. Est., LBS Marg, Mumbai-400 086, India. Phone:+91-022-6147 1919
Fax:+91-022-6147 1920 Gram : STERILITY . email : info@himedialabs.com. Visit us at our website: www.himedialabs.com

Product Information

GRM1572 TEMED, Hi-AR™

Product Number		Packing
GRM1572	:	100ML
GRM1572	:	250ML

Product Information

Product Code	:	GRM1572
Product Name	:	TEMED, Hi-AR™
Synonym	:	N,N,N',N'-Tetramethylethylenediamine, Hi-AR™
Molecular Formula	:	$C_6H_{16}N_2$
Molecular Weight	:	116.20
CAS No.	:	110-18-9
EC No.	:	203-744-6
HS Code	:	2921 29 00
Shelf Life	:	4 years

Technical Specification

Appearance	:	Colourless to pale yellow liquid
Solubility	:	1 mL miscible in 1 mL of water
FTIR (Liquid film)	:	Matches with the standard pattern
Refractive index (n 20/D)	:	1.416 - 1.419
Density (at 25°C)	:	0.75 - 0.79 g/mL
Assay (GC/NT)	:	99.00 - 101.00%

GHS Safety Information

Hazard Statement(s)	:	H225-H302-H314-H332
Precautionary Statement(s)	:	P210-P280-P305+P351+P338-P310
Signal Word	:	Danger
Hazard Pictogram(s)		

Risk and Safety Information

R-Phrase(s)	:	11-20/22-34
S-Phrase(s)	:	16-26-36/37/39-45
WGK	:	1
RTECS	:	KV7175000
Flash Point(°F)	:	68°F
Flash Point(°C)	:	20°C
Storage Temperature(°C)	:	Store below 30°C
Hazard Symbol(s)		

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Fax:+91-022-6147 1920 Gram : STERILITY . email : info@himedialabs.com. Visit us at our website: www.himedialabs.com

Transport Information

UN No.	:	2372
Class	:	3
Packaging Group	:	2
EMS Code	:	F-E, S-D
Marine Pollutant	:	No
ADR/RID	:	2372 3/PG 2
IMDG	:	2372 3/PG 2
IATA	:	2372 3/PG 2

A-516, Swastik Disha Business Park, Via Vadhani Indl. Est., LBS Marg, Mumbai-400 086, India. Phone:+91-022-6147 1919
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HIMEDIA®

Product Information

GRM9358 Chitosan, From Shrimp Shells

Product Number		Packing
GRM9358	:	100G
GRM9358	:	25G
GRM9358	:	500G

Product Information

Product Code	:	GRM9358
Product Name	:	Chitosan, From Shrimp Shells
Synonym	:	Deacetylated chitin; Poly(D-glucosamine)
Molecular Formula	:	$(C_6H_{11}NO_4)n$
Molecular weight	:	3800 - 20000 Daltons
CAS No.	:	9012-76-4
EC No.	:	222-311-2
HS Code	:	3913 90 00
Shelf Life	:	4 years

Technical Specification

Appearance	:	Off-white to orange flakes
Solubility	:	10 mg soluble in 1 mL of dilute acetic acid
Water (K.F.)	:	<= 10.00
Residue on ignition	:	<= 2.0%
Degree of Deacetylation	:	>= 75.00%

Risk and Safety Information

WGK	:	nwg
Storage Temperature(°C)	:	Store below 30°C

Transport Information

Marine Pollutant	:	No
ADR/RID	:	Not Dangerous Goods
IMDG	:	Not Dangerous Goods
IATA	:	Not Dangerous Goods

A-516, Swastik Disha Business Park, Via Vadhani Indl. Est., LBS Marg, Mumbai-400 086, India. Phone:+91-022-6147 1919
Fax:+91-022-6147 1920 Gram : STERILITY . email : info@himedialabs.com. Visit us at our website: www.himedialabs.com

Grams Stain-Kit

K001

Intended Use

Grams Stain Kit is used for differentiation of bacteria on the basis of their gram nature.

Composition**

Ingredients

Gram's Crystal Violet (S012)(Solution A)	-
Crystal Violet	2.000 gm
Ethyl alcohol,95%	20.000 ml
Gram's Crystal Violet (S012)(Solution B)	-
Ammonium oxalate	0.800 gm
Distilled Water	80.000 ml

Solution A and B are mixed and stored for 24 hours before use.The resulting stain is stable.

Gram's Decolourizer(S032)	-
Ethyl alcohol, 95%	50.0 ml
Acetone	50.0 ml
Gram's Iodine(S013)	-
Iodine	1.000 gm
Potassium iodide	2.000 gm
Distilled water	300.000 ml
Safranin,0.5% w/v(S027)	-
Safranin O	0.500 gm
Ethyl alcohol, 95%	100.000 ml

**Formula adjusted, standardized to suit performance parameters

Directions

1)Prepare a thin smear on clear, dry glass slide.

2)Allow it to air dry and fix by gentle heat.

3)Flood with Gram's Crystal Violet (S012) for 1 minute. (If over staining results in improper decolourization of known gram-negative organisms,use less crystal violet).

4)Drain the stain.

5)Flood the smear with Gram’s Iodine (S013). Allow it to remain for 1 minute.

6)Decolourize with Gram's Decolourizer (S032) until the blue dye no longer flows from the smear.

7)Wash with tap water.

8)Counter stain with 0.5% w/v Safranin (S027). Allow it to remain for 1 minute.

9)Wash with water.

10)Allow the slide to air dry or blot dry between sheets of clean bibulous paper and examine under oil immersion objective.

Principle And Interpretation

The Gram stain is a differential staining technique most widely applied in all microbiology disciplines laboratories. It is one of the most important criteria in any identification scheme for all types of bacterial isolates. Different mechanisms have been proposed to explain the gram reaction. There are many physiological differences between gram-positive and gram-negative cell walls (1). Ever since Christian Gram has discovered Gram staining, this process has been extensively investigated and redefined. In practice,a thin smear of bacterial cells is stained with crystal violet, then treated with an iodine containing mordant to increase the binding of primary stain (2). A decolourizing solution of alcohol or acetone is used to remove the crystal violet from cells which bind it weakly and then the counterstain (like safranin) is used to provide a colour contrast in those cells that are decolourized.

Gram-positive bacteria have a thick mesh-like cell wall made of peptidoglycan (50–90% of cell envelope), and as a result are stained purple by crystal violet, whereas gram-negative bacteria have a thinner layer (10% of cell envelope), so do not retain the purple stain and are counter-stained pink by safranin.In a properly stained smear by gram staining procedure, the gram-positive bacteria appear blue to purple and gram negative cells appear pink to red.

Type of specimen

Clinical samples - Blood, urine, CSF, pus, wounds, lesions, body tissues, sputum etc. ; food & dairy samples ; Water samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3, 4).
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (5, 6).
For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards(7).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic Use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidleines should be followed while handling clincal specimens. Saftey guidelines may be referred in individual safety data sheets

Limitations :

1. Use results of Gram stains in conjunction with other clinical and laboratory findings. Use additional procedures (e.g., special stains, inclusion of selective media, etc.)to confirm findings suggested by gram-stained smears (8).
2. False Gram stain results may be related to inadequately collected specimens or delay in transit.
3. Careful adherence to procedure and interpretive criteria is required for accurate results. Accuracy is highly dependent on the training and skill of microscopists (9).
4. The sensitivity of Gram stain is 10^5 cells/ml or 10^4 if the specimen has been prepared with the cytocentrifuge (10). This is particularly applicable to the smear of a drop of urine, where an average of the one bacterial cell per field from an examination of 20 fields correspond to a count of >= 10^5 cfu/ml.

Performance and Evaluation

Performace of the product is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Microscopic examination

Gram staining is carried out and observed under oil immersion lens.

Results

Gram-positive organisms : Violet coloured
Gram-negative organisms : Pinkish red coloured

Storage and Shelf Life

Store between 10- 30°C in tightly closed container and away from bright light. Use before expiry date on label. On opening, product should be properly stored in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

Reference

1. Lamanna and Mallette, 1965, Basic Bacteriology, 3rd ed., Williams and Wilkins Co.,Baltimore.
2. Salton, 1964, The Bacterial Cell Wall, Elsevier, Amsterdam.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
4. Jorgensen,J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
5. Downes F. P. and Ito K. (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.
6.Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
7. Rice E.W., Baird, R.B., Eaton A. D., Clesceri L. S. (Eds.), 2012, Standard Methods for the Examination of Water and Wastewater, 22nd ed., APHA, Washington, D.C.
8. Brown,M.S.,and T.C. Wu. 1986. The Gram stain morphology of fungi, mycobacteria, and Pneumocytis carinii. J.Med .Technol3:495-499.
9. Washington, J.A.1986.Rapid diagnosis by microscopy. Clin.Microbiol. Newsl.8:135-137.
10. Shanhooltzer,C.J.,P. Schaper ,and L.R. Peterson.1982.Concentrated Gram stain smear prepared with a cytospin centrifuge. J.clin. Microbiol.16:1052-1056

Revision : 02 / 2018

IVD	In vitro diagnostic medical device
CE	CE Marking
30°C 10°C	Storage temperature
	Do not use if package is damaged
	HiMedia Laboratories Pvt. Limited, 23 Vadhani Industrial Estate, LBS Marg,Mumbai-86,MS,India
EC REP	CE Partner 4U ,Esdoornlaan 13, 3951 DB Maarn The Netherlands, www.cepartner 4u.eu

Nutrient Agar

M001

Intended use

Nutrient Agar is used as a general purpose medium for the cultivation of less fastidious microorganisms, can be enriched with blood or other biological fluids.

Composition**

Ingredients	Gms / Litre
Peptone	5.000
Sodium chloride	5.000
HM peptone B#	1.500
Yeast extract	1.500
Agar	15.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

- Equivalent to Beef extract

Directions

Suspend 28.0 grams in 1000 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. If desired ,the medium can be enriched with 5-10% blood or other biological fluids. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Nutrient media are basic culture media used for maintaining microorganisms, cultivating fastidious organisms by enriching with serum or blood and are also used for purity checking prior to biochemical or serological testing (5,6). Nutrient Agar is ideal for demonstration and teaching purposes where a more prolonged survival of cultures at ambient temperature is often required without risk of overgrowth that can occur with more nutritious substrate. This relatively simple formula has been retained and is still widely used in the microbiological examination of variety of materials and is also recommended by standard methods. It is one of the several non-selective media useful in routine cultivation of microorganisms (1,7). It can be used for the cultivation and enumeration of bacteria which are not particularly fastidious. Addition of different biological fluids such as horse or sheep blood, serum, egg yolk etc. makes it suitable for the cultivation of related fastidious organisms. Peptone, HM peptone B and yeast extract provide the necessary nitrogen compounds, carbon, vitamins and also some trace ingredients necessary for the growth of bacteria. Sodium chloride maintains the osmotic equilibrium of the medium.

Type of specimen

Clinical samples - Blood; Food and dairy samples; Water samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3,4).
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,7,8).
For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(2)
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic use. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.

2.Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Light yellow coloured clear to slightly opalescent gel forms in Petri plates

Reaction
Reaction of 2.8% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH
7.20-7.60

Cultural Response
Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Escherichia coli ATCC 25922 (00013*)	50-100	good-luxuriant	>=70%
Pseudomonas aeruginosa ATCC 27853 (00025*)	50-100	good-luxuriant	>=70%
Salmonella Typhi *ATCC 6539*	50-100	good-luxuriant	>=70%
Staphylococcus aureus subsp. aureus ATCC 25923 (00034*)	50-100	good-luxuriant	>=70%
Streptococcus pyogenes ATCC 19615	50-100	good-luxuriant	>=70%
Salmonella Enteritidis *ATCC 13076* (00030*)	50-100	good-luxuriant	>=70%
Salmonella Typhimurium *ATCC 14028* (00031*)	50-100	good-luxuriant	>=70%
Yersinia enterocolitica ATCC 9610 (00038*)	50-100	good-luxuriant	>=70%
Yersinia enterocolitica ATCC 23715 (00160*)	50-100	good-luxuriant	>=70%

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Use before expiry date on the label.
Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

Reference

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
5. Lapage S., Shelton J. and Mitchell T., 1970, Methods in Microbiology', Norris J. and Ribbons D., (Eds.), Vol. 3A, Academic Press, London.
6. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins,Baltimore.
7. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
8. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed.,APHA Inc., Washington, D.C.

Revision : 05 / 2021

IVD — In vitro diagnostic medical device

CE Marking

30°C / 10°C — Storage temperature

Do not use if package is damaged

HiMedia Laboratories Pvt. Limited,
23 Vadhani Industrial Estate,
LBS Marg,Mumbai-86,MS,India

EC REP

CE Partner 4U ,Esdoornlaan 13, 3951
DB Maarn The Netherlands,
www.cepartner 4u.eu

Nutrient Broth

M002

Intended use

Nutrient Broth is used for the general cultivation of less fastidious microorganisms, can be enriched with blood or other biological fluids.

Composition**

Ingredients	Gms / Litre
Peptone	5.000
Sodium chloride	5.000
HM peptone B#	1.500
Yeast extract	1.500
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

- Equivalent to Beef extract

Directions

Suspend 13.0 grams in 1000 ml purified / distilled water. Heat, if necessary, to dissolve the medium completely. Dispense into tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Nutrient media are basic culture media used for maintaining microorganisms, cultivating fastidious organisms by enriching with serum or blood and are also used for purity checking prior to biochemical or serological testing (5,6). Nutrient Broth has the formula originally designed for use in the Standard Method for Examination of Water and Waste water. It is one of the several non-selective media useful in routine cultivation of microorganisms (1,7). It can be used for the cultivation and enumeration of bacteria which are not particularly fastidious. Addition of different biological fluids such as horse or sheep blood, serum, egg yolk etc. makes it suitable for the cultivation of related fastidious organisms.

Peptone, HM peptone B and yeast extract provide the necessary nitrogen compounds, carbon, vitamins and also some trace ingredients necessary for the growth of bacteria. Sodium chloride maintains the osmotic equilibrium of the medium.

Type of specimen

Clinical samples - Blood; Food and dairy samples; Water samples.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (3,4).
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,7,8).
For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards.(2)
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic use. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. This medium is general purpose medium and may not support the growth of fastidious organisms.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured clear to slightly opalescent solution

Reaction

Reaction of 1.3% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH

7.20-7.60

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth
Escherichia coli ATCC 25922 (00013*)	50-100	good-luxuriant
Pseudomonas aeruginosa ATCC 27853 (00025*)	50-100	good-luxuriant
Salmonella Typhi *ATCC 6539*	50-100	good-luxuriant
Staphylococcus aureus aubsp.aureus ATCC 25923 (00034*)	50-100	good-luxuriant
Streptococcus pyogenes ATCC 19615	50-100	good-luxuriant

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label

Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

Reference

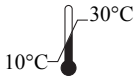
1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
5. Lapage S., Shelton J. and Mitchell T., 1970, Methods in Microbiology', Norris J. and Ribbons D., (Eds.), Vol. 3A, Academic Press, London.
6. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.
7. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, American Public Health Association, Washington, D.C.

8. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

Revision : 09 / 2021

IVD — In vitro diagnostic medical device

CE Marking



Storage temperature

Do not use if package is damaged

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EC REP

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Sabouraud Dextrose Broth (Sabouraud Liquid Medium) M033

Intended Use:

Sabouraud Dextrose Broth (Sabouraud Liquid Medium) is used for cultivation of yeasts, moulds and aciduric microorganisms.

Composition**

Ingredients	Gms / Litre
Dextrose (Glucose)	20.000
Peptone, special	10.000
Final pH (at 25°C)	5.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 30.0 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Principle And Interpretation

Sabouraud Dextrose Agar is Carliers modifications (1) of the formulation described by Sabouraud (2) for the cultivation of fungi, particularly those associated with skin infections. The medium is also recommended by APHA (3). Sabouraud Dextrose Broth is also a modification by Sabouraud (4) and serves the same purpose as Sabouraud Dextrose Agar.Medium 3.

Sabouraud dextrose media are peptone media supplemented with dextrose to support the growth of fungi. Peptone(meat and casein) provides nitrogen, vitamins, minerals, amino acids and growth factors. Dextrose provides an energy source for the growth of microorganisms. The low pH favours fungal growth and inhibits contaminating bacteria from clinical specimens (5). The acid reaction of the final medium is inhibitory to a large number of bacteria making it particularly useful for cultivating fungi and aciduric microorganisms. For isolation of fungi from contaminated specimens, a selective medium should be inoculated simultaneously. Incubate cultures for 4 to 6 weeks before reporting as negative.

Type of specimen

Clinical : skin scrapings; Pharmaceutical samples

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (7,8).
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (6,3).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. Read the label before opening the container. Wear protective gloves/protective clothing/ eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

Since it is a general purpose medium, bacterial cultures will also grow .
Further isolation and biochemical tests should be carried out for onfirmation.

Performance and Evaluation

Performace of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light amber coloured clear solution in tubes

Reaction
pH of 3.0% w/v aqueous solution at 25°C. pH : 5.6±0.2

pH
5.40-5.80

Cultural Response
Cultural characteristics was observed after an incubation at 20-25°C for 3-5 days.

Organism	Inoculum (CFU)	Growth
Cultural Response		
Candida albicans ATCC 10231 (00054*)	50 -100	luxuriant
Candida albicans ATCC 2091 (00055*)	50 -100	luxuriant
Aspergillus brasiliensis ATCC 16404 (00053*)	50 -100	luxuriant
Saccharomyces cerevisiae ATCC 9763 (00058*)	50 -100	luxuriant
Saccharomyces cerevisiae ATCC 2601	50 -100	good-luxuriant
Escherichia coli ATCC 8739 (00012*)	50 -100	Luxuriant (inhibited on media with low pH)
Escherichia coli ATCC 25922 (00013*)	50 -100	good-luxuriant
Escherichia coli NCTC 9002	50 -100	Luxuriant (inhibited on media with low pH)
Lactobacillus casei ATCC 334	50 -100	luxuriant

Key : *Corresponding WDCM numbers.

Storage and Shelf Life

Store below 30°C in a tightly closed container and the prepared medium at 15-25°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (7,8)

Reference

1. Carlier G. I. M., 1984, Brit. J. Derm. Syph., 60:61
2. Sabouraud R., 1892, Ann. Dermatol. Syphil. 3 : 1061.
3. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.

4. Sabouraud R., Les Teignes, Paris: Masson et Cie, 1910, p 553
5. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
6. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
7.Isenberg, H.D. Clinical Microbiology Procedures Handb0ook. 2nd Edition.
8. Jorgensen,J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

Revision : 04 / 2018

IVD — In vitro diagnostic medical device

CE Marking

30°C — Storage temperature

Do not use if package is damaged

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Sabouraud Dextrose Agar

M063

Intended Use:

Recommended for the cultivation of yeasts, moulds and aciduric bacteria from clinical and non clinical samples.

Composition**

Ingredients	Gms / Litre
Dextrose (Glucose)	40.000
Mycological, peptone	10.000
Agar	15.000
Final pH (at 25°C)	5.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 65.0 grams in 1000 ml purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Sabouraud Dextrose Agar is Carlier's modification (3) of the formulation described by is a modification of Sabouraud Dextrose Agar which is described by Sabouraud (7) for the cultivation of fungi (yeasts, moulds), particularly useful for the fungi associated with skin infections. This medium is also employed to determine microbial contamination in food, cosmetics, and clinical specimens (2).

Mycological Peptone provides nitrogenous compounds. Dextrose provides an energy source. High dextrose concentration and low pH favors fungal growth and inhibits contaminating bacteria from test samples (6).

Type of specimen

Clinical samples: skin scrapings, Food samples ; Cosmetics.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5).

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines(1,4,8). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions:

In Vitro diagnostic use. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. For heavily contaminated samples, the plate must be supplemented with inhibitory agents for inhibiting bacterial growth with lower pH.

2. Some pathogenic fungi may produce infective spores which are easily dispersed in air, so examination should be carried out in safety cabinet

3. Further biochemical tests should be carried out for confirmation.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder.

Gelling
Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium
Light amber coloured clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 6.5% w/v aqueous solution at 25°C (after sterilization). pH : 5.6±0.2

pH
5.40-5.80

Cultural Response
Growth Promotion was carried out in accordance with the (USP/EP/BP/JP), after an incubation at 20-25 °C for 24-48 hours.Recovery rate is considered as 100% for bacteria growth on Soybean Casein Digest Agar and fungus growth on Sabouraud Dextrose Agar

Growth Promotion Test
Growth Promotion was carried out in accordance with the harmonized method of ICH (USP/EP/BP/JP), after an incubation at 30-35 °C for 24-48 hours.Recovery rate is considered as 100% for bacteria growth on Soybean Casein Digest Agar and fungus growth on Sabouraud Dextrose Agar

Growth Promoting Properties
Growth of microorganism comparable to that previously obtained with previously tested and approved lot of medium occurs at the specified temperature for not more than the shortest period of time specified inoculating >= 100 cfu (at 30-35°C for 24 hours).

Indicative properties
Colonies are comparable in appearance and indication reaction to those previously obtained with previously tested and approved lot of medium occurs for the specified temperature for a period of time within the range specified inoculating >=100 cfu (at 30-35°C for 24-48 hours).

Organism	Inoculum (CFU)	Growth	Recovery
Candida albicans ATCC 10231 (00054*)	50 -100	Luxuriant (white colonies)	>=70 %
#Aspergillus brasiliensis ATCC 16404 (00053*)	50 -100	luxuriant	>=70 %
Candida albicans ATCC 2091 (00055*)	50 -100	luxuriant	>=70 %
Saccharomyces cerevisiae ATCC 9763 (00058*)	50 -100	luxuriant	>=70 %
Escherichia coli ATCC 8739 (00012*)	50 -100	luxuriant	>=70 %
Escherichia coli ATCC 25922 (00013*)	50 -100	luxuriant	>=70 %
Escherichia coli NCTC 9002	50 -100	luxuriant	>=70 %
Lactobacillus casei ATCC 334	50 -100	luxuriant	>=70 %
Trichophyton rubrum ATCC 28191		luxuriant	

Key : (*) - Corresponding WDCM numbers. (#) - Formerly known as *Aspergillus niger*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

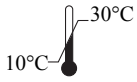
Reference

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. Bacteriological Analytical Manual, 8th Edition, Revision A, 1998. AOAC, Washington D.C.
3. Carlier G. I. M., 1948, Brit. J. Derm. Syph., 60:61.
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
5. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
6. Murray PR, Baren EJ, Jorgensen JH, Pfaller MA, Yolken RH (editors) 2003, Manual of clinical Microbiology, 8th ed.,ASM, Washington, D.C.
7. Sabouraud K., 1892, Ann. Dermatol. Syphilol, 3:1061.
8. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
9. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

Revision : 03 / 2018

IVD — In vitro diagnostic medical device

CE — CE Marking



Storage temperature

Do not use if package is damaged

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LBS Marg,Mumbai-86,MS,India

EC REP

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DB Maarn The Netherlands,
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Tris, Free base, For Molecular Biology MB029

Product Identifier

CAS No.	:	77-86-1
EC No.	:	201-064-4
Molecular Formula	:	$C_4H_{11}NO_3$
Molecular Weight	:	121.14
Synonym	:	Tris(hydroxymethyl)aminomethane
HS Code	:	2922 19 90
Storage	:	Below 30°C
Shelf life	:	4 years

Technical Specification

Appearance	:	White to off-white crystals or powder
Solubility	:	100 mg soluble in 1 mL of water
pH (5% in water at 25°C)	:	10.00 - 11.70
DNases	:	None detected
RNases	:	None detected
FTIR	:	Matches with the standard pattern
Melting range	:	167 - 172°C
Assay (NT/H_2SO_4 Titration)	:	99.00 - 100.10%

Safety Information

Hazard Pictogram(s) :

Signal Word	:	Warning
Hazard Statement(s)	:	H315- H319- H335
Precautionary Statement(s)	:	P261- P305+P351+P338
UN No.	:	Not dangerous goods
Class	:	-
Packing Group	:	-
RTECS	:	TY2900000
WGK	:	2

Product Information

MB123 Bromophenol blue, For Molecular Biology

Product Number		Packing
MB123	:	25G
MB123	:	5G

Product Information

Product Code	:	MB123
Product Name	:	Bromophenol blue, For Molecular Biology
Molecular Formula	:	$C_{19}H_{10}Br_4O_5S$
Molecular Weight	:	669.96
CAS No.	:	115-39-9
EC No.	:	204-086-2
HS Code	:	2934 99 90
Shelf Life	:	4 years

Technical Specification

Appearance	:	Beige to brown or purple crystals or powder
Solubility	:	20 ppm in ethanol yields clear solution
Visual pH Transition	:	pH 3.00 (yellow) - pH 4.60 (blue)
DNases	:	None detected
RNases	:	None detected
Absorption maxima 1	:	432 - 442 nm (20ppm in pH 3.10 buffer solution)
Absorption maxima 2	:	586 - 596 nm (20ppm in pH 4.60 buffer solution)
Loss on drying (at 105°C, 2hr)	:	<= 5.00%

Risk and Safety Information

WGK	:	3
RTECS	:	SJ7453000
Storage Temperature(°C)	:	Store below 30°C

Transport Information

Marine Pollutant	:	No
ADR/RID	:	Not Dangerous Goods
IMDG	:	Not Dangerous Goods
IATA	:	Not Dangerous Goods

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Fax:+91-022-6147 1920 Gram : STERILITY . email : info@himedialabs.com. Visit us at our website: www.himedialabs.com

10X TBS, Molecular Biology Grade

Product Name	Product Code	Kit Packing
10X TBS, Molecular Biology Grade	ML029-5X100ML	5X100 ml
	ML029-2X500 ML	2X 500ml
	ML029-6X500 ML	6X500ml

Introduction: Tris Buffered Saline (TBS) is a common buffer extensively used in molecular biology and biochemistry as it can maintain pH and osmolority. 10X TBS, Molecular Biology is a concentrated form and has to be diluted to 1X concentration before usage.

Description: 10X TBS is a water-based salt solution containing Sodium chloride, Sodium phosphate and Potassium phosphate. This solution is extensively used for dilution and washing during various biological applications as it maintains the physiological pH and osmolarity. The phosphate groups of this buffer help to maintain a constant pH. The 10X buffer should be diluted to 1X (using nuclease free sterile water) prior to use.

Application: 10X TBS is widely used in molecular biology and biochemistry as dilution and wash buffer as it is isotonic and non-toxic. It is used to maintain the pH within a narrow range. It is also used as a wash solution and for diluting antibodies during western blotting and immunohistochemical staining. While preparing wash solutions some times Tween20 is also added.

Composition: 10X TBS is composed of 150 mM Sodium chloride, 2 mM Potassium chloride and 25 mM Tris.

Properties:

Appearance	:	Colorless solution
Clarity	:	Clear and free of particles
pH	:	7.4 - 7.6
DNase	:	None detected
Bioburden	:	None detected
Suitability Test	:	This reagent has been tested and is suitable for use in various molecular biology applications

Storage conditions: 10X TBS, Molecular Biology Grade has to be stored at room temperature (15 - 25 ºC).

Technical Assistance
At HiMedia we pride ourselves on the quality and availability of our technical support. For any kind of technical assistance, mail at mb@himedialabs.com.

ISO 9001-2008 CERTIFIED

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Mumbai - 400 086, India
Tel: 00-91-22-6147 1919
Fax: 6147 1920, 2500 5764
Email : info@himedialabs.com
Web : www.himedialabs.com

Product Information

RM1635 Diphenylboric acid-2-aminoethyl ester

Product Number		Packing
RM1635	:	5G

Product Information

Product Code	:	RM1635
Product Name	:	Diphenylboric acid-2-aminoethyl ester
Synonym	:	2-Aminoethyl diphenylborinate
Molecular Formula	:	$C_{14}H_{16}B\ N\ O$
Molecular Weight	:	225.09
CAS No.	:	524-95-8
EC No.	:	208-366-5
HS Code	:	2931 90 90
Shelf Life	:	4 years

Technical Specification

Appearance	:	White to beige crystals or powder
Solubility	:	33.3 mg soluble in 1 mL of ethanol
FTIR (KBr disc)	:	Matches with the standard pattern
Melting range	:	192 - 194°C
Assay (NT)	:	97.00 - 102.50 %

Risk and Safety Information

S-Phrase(s)	:	22-24/25
WGK	:	3
Storage Temperature(°C)	:	Store below 30°C

Transport Information

Marine Pollutant	:	No
ADR/RID	:	Not Dangerous Goods
IMDG	:	Not Dangerous Goods
IATA	:	Not Dangerous Goods

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HiMedia CellCulture
Enabling Breakthroughs

Product Information

Fetal Bovine Serum

Origin: South America, EU Approved
Heat inactivated
Sterile filtered

Product Code: RM9955

Product Description:

Fetal bovine serum (FBS) is a ubiquitously used essential supplement in cell culture media. FBS is a cocktail of proteins, vitamins, carbohydrates, lipids, hormones, growth factors, minerals and trace elements and is used as an universal growth supplement effective for most types of human and animal (including insect) cells. The major functions of serum in culture media are to provide:
(i) Hormonal factors stimulating cell growth and proliferation and promoting differentiated functions.
(ii) Transport proteins carrying hormones (e.g. transcortin), minerals and trace elements and lipids (e.g. lipoproteins)
(iii) Attachment and spreading factors, acting as germination points for cell attachment.
(iv) Stabilising and detoxifying factors needed to maintain pH or to inhibit proteases either directly, such as α-antitrypsin or α2-macroglobulin, or indirectly, by acting as an unspecific sink for proteases and other (toxic) molecules.

RM9955 is heat inactivated Fetal bovine serum. Heat inactivation is done to destroy heat labile components such as complement that can lead to complement mediated cell lysis. Complement proteins, antibodies and enzymes present in the serum are inactivated by heat inactivation.

Applications of Heat inactivated Serum:

- Suitable for immunoassays, enzyme assays and cytotoxicity assays
- For culture of insect cells

***Note**: Heat inactivation process can be detrimental to the growth promoting capacity of serum. When heat inactivation of serum is done, along with the complement certain amino acids, vitamins and growth factors are subjected to temperatures that could cause degradation. Hence it is recommended that researcher should experimentally determine and document the reasons for using heat inactivated serum.*

RM9955 is sourced in countries approved for import into the European Union by European Commission. Currently this includes Central and South America, USA, Canada, Australia, New Zealand and South Africa. This serum is collected and processed in facilities registered and inspected by the competent authority in the country of origin. EU approved serum can be freely moved between EU member countries and many other countries outside of Europe where the USDA or FDA regulations are not required.

Directions for Thawing of Serum:

Thawing of the sera should be done as quickly as possible in order to minimize the period of time during which elevated salt concentration prevail in the thawed liquid.

1. Remove the bottles from the freezer and allow them to acclimatize at room temperature for 10 minutes and keep in 2-8°C overnight in refrigerator.

   Note: Do not place the serum in the water bath or incubator. Avoid exposing serum to elevated temperatures as this can lead to degradation of heat labile nutrients.

2. Swirl the bottle of serum frequently during thawing to disperse the released salts and proteins uniformly in the liquid.

Note on Cryoprecipitate:

We advise our users to follow the recommended thawing procedure. Proper thawing with periodic agitation is crucial to a serum's optimum performance. If bottle of serum is not frequently swirled during thawing, the released proteins and salts tend to form crystalline or flocculent precipitates. These cryoprecipitates are not detrimental to the performance of serum but might affect serum's appearance and consistency.

Slight turbidity or small amount of flocculent material is normal in most serum products and will not affect its performance in any manner. Filtering serum to remove cryoprecipitate is not recommended and could result in loss of nutrients.

Quality Control:

Physical and Chemical analysis:

pH	: 6.8 - 8.2
Osmolality	: 280 – 340 mOsm/KgH_2O
Endotoxin	: Value EU/ml
Hemoglobin	: < 20mg/dl
Identity	: Typical

Protein:

Total protein	: 3.0 - 4.5 g/dl
Albumin	: value g/dl
α-Globulin	: value g/dl
β-Globulin	: value g/dl
γ-Globulin	: value g/dl
IgG	: NMT 250µg/ml

Sterility Testing:

Aerobic bacteria	: Not detected
Anaerobic bacteria	: Not detected
Fungi	: Not detected
Mycoplasma	: Not detected

Virus testing:

Bovine Virus Diarrhea Virus (BVD-V)	: Not detected
Bovine Herpes Virus 1 (BHV-1)	: Not detected
Parainfluenza Type 3 (PI-3)	: Not detected

Antibody testing:

BVD-1 Antibody titer	: Value
BVD-2 Antibody titer	: Value

Growth promotion and cytotoxicity:

Each lot of serum is tested for growth promotion and cytotoxicity. Growth promotion shows the ability of the serum to support the growth of a cell line using a standardized low inoculum in media with 10% serum over a period of 10 to 14 days.

Storage and Shelf Life:

Store at -10°C to -40°C away from bright light. Shelf life of the product is 48 months. Thawed serum can be stored at 2-8°C up to four weeks.

Multiple freeze thaw cycles should be avoided. Serum should never be stored in frost free freezers. Frost free appliance undergoes intermittent warming cycles to prevent ice deposits and this might lead to multiple thawing of serum.

To avoid multiple free thaw cycles or long periods of refrigeration, we recommend freezing small aliquots which can be thawed and used as required.

Use before expiry date given on the label.

LoSera™ RPMI-1640

With L-Alanyl-L-Glutamine and Sodium bicarbonate
1X Liquid Cell Culture Medium requiring reduced serum supplementation

Product Code: RSL011G

Product Description :

LoSera™ media are based on the classical formulations supplemented with insulin, transferrin and other advanced nutrients. The additional nutrients help in reducing the percentage of serum required to grow most of the common cell lines. The percentage of serum reduction may vary with type of cell line used. For non-fastidious cell lines serum can be reduced from 10% to as low as 1%. For fastidious cell lines serum usage can be reduced from 10% to 2.5%. LoSera™ medium can be used without prior adaptation and sub cultured using normal procedures. Reduced serum supplementation improves the reproducibility of experimental results by decreasing the variability caused due to undefined serum constituents. It also facilitates down regulation process in bioassays and in purification process of culture products.

RSL011G is LoSera™ RPMI-1640 with sodium bicarbonate and L-alanyl-L-glutamine. Users are advised to review the literature for recommendations regarding medium supplementation and physiological growth requirements specific for different cell lines.

Composition :

Ingredients	mg/L
INORGANIC SALTS	
Calcium nitrate tetrahydrate	100.000
Magnesium sulphate anhydrous	48.840
Potassium chloride	400.000
Sodium bicarbonate	2000.000
Sodium chloride	6000.000
Sodium dihydrogen phosphate anhydrous	800.000
AMINO ACIDS	
Glycine	10.000
L-Alanyl-L-Glutamine	446.000
L-Arginine hydrochloride	241.000
L-Asparagine	50.000
L-Aspartic acid	20.000
L-Cystine dihydrochloride	65.200
L-Glutamic acid	20.000
L-Histidine hydrochloride monohydrate	20.960
L-Hydroxyproline	20.000
L-Isoleucine	50.000
L-Leucine	50.000
L-Lysine hydrochloride	40.000
L-Methionine	15.000
L-Phenylalanine	15.000
L-Proline	20.000
L-Serine	30.000
L-Threonine	20.000
L-Tryptophan	5.000
L-Tyrosine disodium salt	28.830
L-Valine	20.000
VITAMINS	
Choline chloride	3.000
D-Biotin	0.200
D-Ca-Pantothenate	0.250
Folic acid	1.000
Niacinamide	1.000
Pyridoxine hydrochloride	1.000
Riboflavin	0.200
Thiamine hydrochloride	1.000
Vitamin B12	0.005
i-Inositol	35.000
p-Amino benzoic acid (PABA)	1.000
OTHERS	
D-Glucose	2000.000
Glutathione reduced	1.000
Growth Supplement mix	Proprietary
Phenol red sodium salt	5.300

Directions :

Recommendations for use with LoSera™ Media:
1. LoSera™ media have been optimized at 2.5% serum concentration for a broad range of cell culture applications.

Recommended concentrations of serum using LoSera™ media ranges from 1-5%. However the concentration of serum used may need to be adjusted for specific cell types or applications to achieve optimal results. Titration of FBS concentration is recommended to determine maximum serum reduction.

Please refer disclaimer overleaf

2. In case of antibiotics being used to control contamination, it is recommended to reduce the amount of antibiotics in proportion to the amount of serum reduced.

Material required but not provided :

Fetal Bovine Serum (RM1112/RM10432)

Quality Control:

Appearance
Orangish red colored, clear solution.

pH
7.00 -7.60

Osmolality in mOsm/Kg H2O
290.00 -330.00

Sterility
No bacterial or fungal growth is observed after 14 days of incubation, as per USP specification.

Cultural Response
The growth promotion capacity of the medium is assessed qualitatively by analyzing the cells for the morphology and quantitatively by estimating the cell counts and comparing it with a control medium through minimum three subcultures.

Endotoxin Content
NMT 5EU/ml

Storage and Shelf Life:

Store at 2-8°C away from bright light.
Shelf life is 12 months.
Use before expiry date given on the product label.

Revision : 1 / 2012

Dimethyl Sulfoxide (DMSO)

Cell Culture Tested
Hybridoma Tested
Sterile Filtered

Product Code: TC433

Product Description:

Molecular Weight: 78.13
Molecular Formula: C_2H_6OS
CAS No: 67-68-5
Synonym: DMSO, Methyl sulfoxide

Dimethyl sulfoxide (DMSO) is one of the strongest organic solvents that exhibits complete miscibility in water and most organic polar liquids. It is produced by oxidation of dimethyl sulfide with oxygen or nitrogen dioxide. It has both hydrophobic and hydrophilic properties depending on temperature.

It plays an important role in sample management and drug designing operations because of its ability to dissolve different kinds of compounds. It is a common ligand in organic chemistry and used as a mild oxidant in organic synthesis. DMSO is also used in Polymerase chain reaction to reduce the formation of secondary structures of DNA template and primers.

DMSO is widely used in cell culture as a cryoprotective agent for cryopreservation of animal cells and tissues, human embryos, blood cells. It prevents formation of ice crystals during freezing process and prevents cell damage. It is generally used at 10% concentration (v/v) in cell freezing medium. However, it has been used successfully at a concentration as low as 5% (v/v) for many cell lines. Use of lower concentration of DMSO has the benefit of quicker post-thaw removal of this toxic reagent from cells upon dilution with growth medium.

Apart from its utility in cryopreservation, DMSO has also been used for induction of cell differentiation.

DMSO can be dangerous because of its solvent power. Hence, the materials (containers, filters, syringes, tips, pipettes etc.) that come in contact with DMSO should be DMSO compatible. Consumables and accessories made up of polypropylene, polymethylpentene, nylon, teflon, FEP, LDPE, HDPE, PPCO (polypropylene copolymer) are completely DMSO-compatible whereas those of polystyrene, ECTFE/ETFE are moderately DMSO compatible. Polysulfone, PVC tubings and polycarbonate materials are incompatible with DMSO hence should not be brought in contact with DMSO.

For filter sterilization of DMSO, teflon or nylon membrane filters are recommended. Cellulose acetate membranes should not be used.

TC433 is filter sterilized hybridoma tested DMSO. It has been tested for cryopreservation of hybridoma cell lines.

Directions for Use:

Precautions:
DMSO can penetrate many synthetic and natural membranes including skin and rubber gloves. Consequently any potentially harmful substances in regular use (e.g. carcinogens) may also be carried into the circulation through skin and even through rubber gloves. DMSO should always be handles with precautions, particularly in presence of toxic substances.

Quality Control:

Appearance
Clear colourless liquid

pH at 25°C
7.20 - 7.80

Cell Culture Test
Passes

Sterility
No bacterial or fungal growth is observed after 14 days of incubation,as per USP specification

Performance test
Performance test is done by freezing cells and doing a viability assessment after thawing and comparing with a control medium

Storage and Shelf Life:

Store at room temperature away from bright light.
Shelf life is 48 months.
Use before expiry date given on the product label.

Revision No.: 01/ 2021

Trypsin-EDTA Solution 1X

With 0.025% Trypsin and 0.01% EDTA in Dulbecco's Phosphate Buffered Saline

Product Code: TCL099

Product Description :

Trypsin
Molecular Weight: 23.4kDA
CAS No: 9002-07-07
EC No: 3.4.21.4

Trypsin is a serine protease derived from porcine pancreas. It is a single chain polypeptide of 223 amino acid residue with substrate specificity based on positively charged Lysine and Arginine side chains. Trypsin predominantly cleaves peptide chains at the carboxyl sides of Lysine and Arginine, except when either is followed by Proline. It is most commonly used for dissociation and disaggregation of adherent cells. Ethylenediaminetetraacetic acid (EDTA), a chelating agent is often added to enhance enzymatic activity of trypsin solution. EDTA acts by neutralizing calcium and magnesium ions that enhance cell to cell adhesion.

TCL099 is 0.025% Trypsin and 0.01% EDTA in Dulbecco's phosphate buffered saline.

Activity:
One BAEE unit will produce a Δ A253nm of 0.001 per minute with BAEE as substrate at pH 7.6 at 25°C in a reaction volume of 3.2ml (1cm light path).

One TAME unit hydrolyzes 1µmole of p-toluene-sulfonyl-L-arginine methyl ester (TAME) per minute at 25°C, pH 8.2, in the presence of 0.001M calcium ion.

One USP trypsin unit is the activity causing a change in absorbance of 0.003 per minute under the conditions specified.

Activity Conversion: 1 TAME unit = 19.2 USP or NF units = 57.5 BAEE Units

Directions :

Dissociation of cells from culture vessel
1. Remove the spent medium from the culture vessel by aspiration.
2. Wash the monolayer by adding balanced salt solution without calcium and magnesium to the side of the flask opposite the cells.
3. Rinse the cell sheet by rocking the flask for 1 to 2 minutes and discard the wash solution.
4. Add Trypsin or Trypsin EDTA solution to the side of the flask opposite the cells. The volume should be sufficient enough to completely cover the monolayer of the cells.
5. Rock the flask to ensure that the dissociation solution covers the cell sheet.
6. Incubate the flask at 37°C for 2 to 3 minutes. Monitor the process by observing the flask under inverted microscope. When dissociation is complete, the cells will be in suspension and appear rounded. In addition to rocking gently, flasks of cell lines that are characteristically difficult to remove from substratum may be tapped to expedite removal.
Note:- The exact time needed to dissociate cells will vary according to the cell line. The dissociation process should be monitored closely to avoid cell damage.
7. Once the cell dissociation is complete add serum containing complete medium to the flask to inhibit the tryptic activity which may further damage the cells.
8. Disperse the cells into a single cell suspension by pipetting repeatedly.
9. Count and subculture the cells.

Note:-
1. Concentration of Trypsin or Trypsin EDTA solution used for dissociation should be determined empirically for individual cell lines.
2. Time required for dissociation of cells from surface depends on cell type, cell density, potency of trypsin, serum concentration in growth medium and time since last subculture.
3. For serum free media, use Soybean Trypsin inhibitor (TCL068) 1:1 to neutralize the action of trypsin.

Quality Control:

Appearance
Colorless, clear solution.

pH
7.00 -7.60

Osmolality in mOsm/Kg H2O
270.00 -310.00

Sterility
No bacterial or fungal growth is observed after 14 days of incubation, as per USP specification.

Cultural Response
Cell Dissociation Test.

Storage and Shelf Life:

Shelf life of the product is 24 months.
Upon receipt store the product at -20°C in a freezer that is not self-defrosting. Once thawed, the product is stable for about 2 weeks at 2-8°C.
Repeated freezing and thawing reduces enzymatic activity and should be avoided. Once thawed, the solution can be aliquoted in smaller volumes and frozen for future use.
Use before expiry date given on the product label.

Revision : 1 / 2012