PRODUCT SPECIFICATION SHEET

Tryptose Blood Agar Base (DM272)

Intended Use

Tryptose Blood Agar Base (DM272) is recommended for isolating, cultivating and determining the hemolytic reactions of fastidious microorganisms.

Product Summary and Explanation

Tryptose Blood Agar Base is a tryptose based medium that can be used for the cultivation of fastidious organisms,[1, 2] when supplemented with blood. Tryptose Blood Agar Base is recommended by FDA [4] and APHA.[5] Tryptose Blood Agar Base can be used as a general-purpose medium without supplementation of blood. This medium can be used to determine the heamolytic reactions of fastidious organisms, as it is devoid of dextrose. This medium not only keeps the blood cells in a good state but also helps in forming distinct haemolysis. The four different types of haemolysis observed are as follows:

a) Alpha haemolysis: partial lysis of the erythrocytes surrounding a colony, causing a gray green or brownish discolouration in the media.
b) Beta haemolysis: complete lysis of the red blood cells surrounding a colony, causing a clearing of blood from the medium.
c) Gamma haemolysis: no haemolysis and consequently, no colour change of the medium surrounding a colony. Organisms showing no haemolysis are generally termed non-hemolytic rather than gamma haemolytic.
d) Alpha-prime or wide zone alpha: a small zone of intact erythrocytes immediately adjacent to the colony, with a zone of complete red cell haemolysis surrounding the zone of intact erythrocytes. This type of haemolysis may be confused with beta haemolysis.[3]

Principles of the Procedure

Tryptose Blood Agar Base contains tryptose, beef extract and yeast extract which provides nitrogenous and carbonaceous compounds, sulphur, vitamin B complex and trace elements essential for bacterial metabolism. Blood provides additional nutrients and serves as a base to study haemolytic reactions. Sodium chloride helps to maintain the osmotic balance.

Formula / Liter

Ingredients	Gms / Liter
Tryptose	10.00
Beef extract	3.00
Sodium chloride	5.00
Agar	15.00
Final pH: 7.2 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 33 grams of the medium in 950 ml of distilled water.

2. Heat if necessary to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. For preparing Blood Agar cool the autoclaved medium to 45 - 50°C and aseptically add 5% v/v sterile defibrinated blood.
5. Mix thoroughly, avoiding air bubbles and pour into sterile Petri plates.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Basal medium : Yellow coloured clear to slightly opalescent gel forms in Petri plates After addition of 5% v/v sterile defibrinated blood : Cherry red coloured opaque gel forms in Petri plates
Reaction of 3.3% Solution	pH : 7.2 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

Expected Cultural Response: Cultural characteristics observed with added 5% v/v sterile defibrinated blood, after an incubation at 35-37°C for 18-48 hours.

Sr. No.	Organisms	Results to be achieved					
		Inoculum (CFU)	Growth w/o blood	Recovery w/o blood	Growth w/blood	Recovery w/blood	Heamolysis
1.	*Neisseria meningitides* ATCC 13090	50 - 100	good-luxuriant	>=70%	good-luxuriant	>=70%	none
2.	*Staphylococcus aureus* ATCC 25923	50 - 100	good-luxuriant	>=70%	good-luxuriant	>=70%	beta
3.	*Staphylococcus epidermidis* ATCC 12228	50 - 100	good-luxuriant	>=70%	good-luxuriant	>=70%	gamma
4.	*Streptococcus pneumoniae* ATCC 6303	50 - 100	fair-good	40-50%	good	50-70%	alpha
5.	*Streptococcus pyogenes* ATCC 19615	50 - 100	fair-good	40-50%	good	50-70%	beta

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer to appropriate references for standard procedures.

Results

1. *Streptococcus pneumoniae* shows alpha haemolysis partial lysis indicated as a gray green or brownish discolouration in the media surrounding the colony.
2. *Staphylococcus aureus* and *Streptococcus pyogenes* shows beta haemolysis indicated as a clearing of blood from the medium surrounding the colony.
3. *Staphylococcus epidermidis* shows gamma haemolysis or no haemolysis and consequently, indicated as no colour change of the medium surrounding a colony
4. Refer to appropriate references and test procedures for interpretation of results.

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Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. Tryptose Blood Agar favours the good growth of *Neisseria meningitides* and *Streptococcus pneumoniae*. However, it can be used with or without blood supplementation.
2. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
3. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Tryptose Blood Agar Base
Product Code : DM272
Available Pack sizes : 500gm

References

1. Casman E. P., 1942, J. Bacteriol., 43:33.
2. Casman E. P., 1947, Am. J. Clin. Pathol., 17: 281.
3. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C. Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4 th Ed., J. B. Lippinccott Company
4. FDA Bacteriological Analytical Manual, 8th Ed., 1995, AOAC International, Gaithersburg, Md.
5. American Public Health Association, 1970, Diagnostic Procedures and Reagents, 5th Ed., APHA Inc., New York.
6. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore.

Further Information

For further information please contact your local MICROMASTER Representative.

MICROMASTER LABORATORIES PRIVATE LIMITED
Unit 38/39, Kalpataru Industrial Estate,
Off G.B. Road, Near 'R-Mall' , Thane (W) – 400607. M.S. INDIA.
Ph: +91-22-25895505, 4760, 4681. Cell: 9320126789.
Email: micromaster@micromasterlab.com
sales@micromasterlab.com

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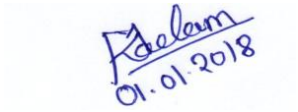
Prepared By	Checked By	Approved By
		
Microbiologist	Head Quality Control	Head Quality Assurance

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