



PRODUCT SPECIFICATION SHEET

Purple Agar Base (DM583)

Intended Use

Purple Agar Base (DM583) is recommended for carbohydrate fermentation studies, with added carbohydrates and for the cultural identification of pure cultures of enteric and other microorganisms.

Product Summary and Explanation

The fermentative properties of bacteria are valuable criteria in their identification.^(1,2) A basal medium for determining the fermentation reactions of microorganisms must be capable of supporting the growth of test organisms and free from fermentable carbohydrates. Vera⁽³⁾ originally formulated Purple media which were further modified by addition of beef extract.⁽⁴⁾ Purple Agar Base is a carbohydrate-free media with a slightly acid pH that, when supplemented with carbohydrates, are useful in obtaining accurate fermentation reactions, particularly in the identification of gram-negative enteric bacteria.^(5,6) These medium is recommended by FDA⁽⁷⁾ for fermentation studies of sugars.

Principles of the Procedure

Purple Agar Base contains peptone special and beef extract which provides nitrogen sources and other essential nutrients required for the growing organisms. Sodium chloride maintains the osmotic balance of the medium. Bromocresol purple is the pH indicator, which turns yellow at acidic pH. The acid produced during the fermentation of carbohydrate causes bromocresol purple, the pH indicator to turn yellow. If the carbohydrate is not utilized or fermented, the color of the medium remains unchanged or becomes more alkaline (darker purple) due to decarboxylation of the amino acids present in the medium. Gas production is evident by splitting of agar.

Formula / Liter

Ingredients	Gms / Liter
Peptone, special	10.00
Sodium chloride	5.00
Beef extract	1.00
Bromo cresol purple	0.02
Agar	15.00
Final pH : 6.8 ± 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 31.02 grams of the medium in one liter of distilled water.
2. Add 5 - 10 grams of the carbohydrate to be tested.
3. Heat to boiling to dissolve the medium completely.
4. Dispense in tubes as desired.
5. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.





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6. Alternatively sterilize the basal medium prepared using 900 ml distilled water and add 100 ml separately sterilized 5 - 10% solution of the desired carbohydrate to it.

Quality Control Specifications

Dehydrated Appearance	Cream to greenish yellow homogeneous free flowing powder
Prepared Medium	Purple coloured clear to slightly opalescent gel forms in tubes as slants
Reaction of 3.1% Solution	pH : 6.8 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

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

Sr. No.	Organisms	Results to be achieved					
		Inoculum (CFU)	Growth	Acid (without carbohydrate)	Gas (without Carbohydrate -rate)	Acid (with 1% dextrose)	Gas (with 1% dextrose)
1.	<i>Escherichia coli</i> ATCC 25922	50 -100	luxuriant	negative reaction, no colour change	negative reaction	positive reaction, yellow colour	positive reaction
2.	<i>Listeria monocytogenes</i> ATCC 19112	50 -100	luxuriant	negative reaction, no colour change	negative reaction	positive reaction, yellow colour (fermentative metabolism)	negative reaction
3.	<i>Neisseria meningitides</i> ATCC 13090	50 -100	good-luxuriant	negative reaction, no colour change	negative reaction	positive reaction, yellow colour	negative reaction
4.	<i>Staphylococcus aureus</i> ATCC 25923	50 -100	luxuriant	negative reaction, no colour change	negative reaction	positive reaction, yellow colour	negative reaction

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

Test Procedure

Refer to appropriate references for standard test procedures.

Results

Refer to appropriate references and test procedures for interpretation of results.

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.





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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. It is recommended⁽⁶⁾ to add carbohydrate in 1% concentration to avoid possible reversion reactions except glucose (dextrose).
2. If the medium containing carbohydrate is sterilized by autoclaving, precautions should be taken to use minimum amount of heat required for sterilization to avoid hydrolysis of the carbohydrate.
3. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
4. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Purple Agar Base

Product Code : DM583

Available Pack sizes : 500gm

References

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5. Ewing W. H., 1986, Edwards and Ewings identification of Enterobacteriaceae , 4th ed. Elsevier Science Publishing Co, Inc., New York, N.Y.
6. Forbes B. A., Sahm A. S., and Weissfeld D. F., 1998, Bailey & Scotts Diagnostic Microbiology, 10th Ed., Mosby, Inc., St. Louis, Mo.
7. FDA Bacteriological Analytical Manual, 2005, 18th Ed., AOAC, Washington, DC.
8. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. Wilkins, Baltimore and I Williams.

Further Information

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