PRODUCT SPECIFICATION SHEET

Bacillus Differentiation Agar (DM1032)

Intended Use
Bacillus Differentiation Agar (DM1032) is recommended for differentiation between *Bacillus cereus* and *Bacillus subtilis* based on mannitol fermentation.

Product Summary and Explanation
Bacillus is a genus of gram positive, rod-shaped bacteria; can be obligate aerobes or facultative anaerobes and ubiquitous in nature.[1] These bacteria produce oval endospores under stressful environmental conditions that can be dormant for extended periods.[2] *Bacillus cereus* causes food-borne illness and *Bacillus subtilis* is involved in food spoilage like ropiness in bread and other related foods. Bacillus Differentiation Agar is recommended for differentiation between *Bacillus cereus* and *Bacillus subtilis* based on mannitol fermentation.

Principles of the Procedure
China Blue Lactose Agar contains yeast autolysate which provide required nitrogenous source for growth of *Bacillus*. Mannitol can provide the essential carbohydrate and energy. Magnesium sulphate and Potassium chloride provides minerals and supports sporulation. Ammonium phosphate acts as a buffering agent. Bromocresol purple is added as a pH indicator which turns the medium colour to yellow if acid is produced through fermentation of mannitol by the organisms in the medium.

Formula / Liter

Ingredients	Gms / Liter
Yeast autolysate	0.20
Mannitol	5.00
Monohydrogen ammonium phosphate	1.00
Potassium chloride	0.20
Magnesium sulphate	0.02
Bromo cresol purple	0.0075
Agar	15.40
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 22 grams of the medium in one liter of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.

Quality Control Specifications

Dehydrated Appearance	Light yellow to light green homogeneous free flowing powder
Prepared Medium	Light purple coloured clear to slightly opalescent gel forms in Petri plates
Reaction of 2.2% solution	pH 7.2 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.54 % Agar gel

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Expected Cultural Response: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Sr. No.	Organisms	Results to be achieved			
		Inoculum (CFU)	Growth	Recovery	Colour of Colony
1.	*Bacillus cereus ATCC 10876*	50-100	good-luxuriant	>=70%	colourless
2.	*Bacillus subtilis ATCC 6633*	50-100	good-luxuriant	>=70%	yellow

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 standard 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.

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. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging
Product Name : Bacillus Differentiation Agar
Product Code : DM1032
Available Pack sizes : 500gm

References

1. Turnbull PCB (1996). Bacillus. In: Barron's Medical Microbiology (Baron S et al., eds.) (4th ed.). Univ of Texas Medical Branch.
2. Madigan M; Martinko J (editors). (2005). Brock Biology of Microorganisms (11th ed.). Prentice Hall.

Further Information
For further information please contact your local MICROMASTER Representative.

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Prepared By	Checked By	Approved By
		
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