



PRODUCT SPECIFICATION SHEET

Lactobacillus Streptococcus Differential Medium Base (DM129)

Intended Use

Lactobacillus Streptococcus Differential Medium Base (DM129) is recommended for differentiation of *Lactobacilli* and *Streptococci* on the basis of colonial morphology, TTC reduction and casein reaction.

Product Summary and Explanation

Lactobacilli are a major part of the lactic acid bacteria group, named as such because most of its members convert lactose and other sugars to lactic acid. *Streptococcus* is a genus of gram positive bacteria, many of which are facultative anaerobes. L. S. (Lactobacillus Streptococcus) Differential Medium is used to differentiate *Lactobacillus* and *Streptococcus*. Eloy and Lacrosse⁽¹⁾ describes the formula for L. S. Medium which is a selective medium that supports good growth and differentiation of thermophilic lactobacilli and streptococci in yoghurt products.⁽²⁾ Yoghurt is a fermented milk product in which *Streptococcus thermophilus* and *Lactobacillus bulgaricus* are the essential microbial species and are active in a symbiotic relationship. A ratio of 1:1 is recommended by various workers.^(3, 4, 5) The reduction of triphenyl tetrazolium chloride in connection with the casein reaction allows differentiation between lactobacilli and streptococci by means of colony morphology.⁽⁶⁾

Principles of the Procedure

Lactobacillus Streptococcus Differential Medium Base contains casein enzymic hydrolysate, L-cysteine hydrochloride, papaic digest of soyabean meal, beef extract and yeast extract which provides carbon, nitrogen, vitamins and minerals and other essential growth nutrients. Sodium chloride helps in maintaining osmotic balance. Dextrose is the carbon and energy source.

Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	10.00
Papaic digest of soyabean meal	5.00
Beef extract	5.00
Yeast extract	5.00
Dextrose	20.00
Sodium chloride	5.00
L-Cystine hydrochloride	0.30
Agar	15.00
Final pH: 6.1 ± 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 65.3 grams of the medium in one liter of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. Autoclaving is not required if medium is used on the same day.
4. Cool to 50°C and aseptically add the following sterile solutions previously kept warm at 50°C just prior to use;





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- (a) 100 ml of 10% w/v aqueous solution of antibiotic-free skim milk powder sterilized at 15 lbs pressure (121°C) for 5 minutes.
 (b) 10 ml of 2, 3, 5-Triphenyl-Tetrazolium Chloride (T.T.C.) Solution (MS029).
5. Mix well and pour into sterile Petri plates.

Quality Control Specifications

Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Light yellow coloured opalescent gel forms in Petri plates
Reaction of 6.53% Solution	pH : 6.1 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

Expected Cultural Response: Cultural characteristics observed with added antibiotic free skim milk powder and 1% T.T.C. (MS029), after an incubation at 43-45°C for 48 hours.

Sr. No.	Organisms	Results to be achieved
		Colony Characteristics
1.	<i>Lactobacillus bulgaricus ATCC 11842</i>	red, rhizoidal, surrounded by opaque zone
2.	<i>Streptococcus thermophilus ATCC 14485</i>	red, smooth, surrounded by clear zone

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

Test Procedure

Test samples of yoghurt or starter cultures are added to melted and cooled L.S. Differential Medium Base. These are mixed thoroughly and plates are poured. The plates are incubated at 43°C for 48 hours. Refer to appropriate references for standard test procedures.

Results

Refer appropriate references and 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.





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Packaging

Product Name : Lactobacillus Streptococcus Differential Medium Base

Product Code : DM129

Available Pack sizes : 500gm

References

1. Eloy C. and Lacrosse R., 1976, Bull. Rech. Agron Gembloux,11(1-2):83.
2. Revter G., 1985, Int. J. Food Microbiol., 2, 55-68
3. Pette J. W. and Lolkema H., 1950, Neth. Milk Dairy J., 4:261.
4. Stocklin P., 1969, Cultured Dairy Prod. J., 4 (3), 6.
5. Sellars R. L. and Babel F. J., 1970, Cultures for the Manufacture of Dairy Products, Chr. Hansens Laboratory, Inc., Milwaukee, Wis.
6. Corry J. E. L., Curtis G. D. W., and Baird R. M., Culture Media for Food Microbiology, Vol. 34, Progress in Industrial Microbiology, 1995, Elsevier, Amsterdam.

Further Information

For further information please contact your local MICROMASTER Representative.



MICROMASTER LABORATORIES PRIVATE LIMITED

DM129PSS,QAD/FR/024,Rev.00/01.01.2018

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

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

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