



PRODUCT SPECIFICATION SHEET

Streptococcus Thermophilus Isolation Agar (DM630)

Intended Use

Streptococcus Thermophilus Isolation Agar (DM630) is recommended for determining the ratio of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* in yoghurt.

Product Summary and Explanation

Streptococcus thermophilus is found in fermented milk products, and is generally used in the production of yogurt, alongside *Lactobacillus delbrueckii subsp. bulgaricus*. The two species are synergistic, and *S. thermophilus* probably provides *L. bulgaricus* with folic acid and formic acid which it uses for purine synthesis. To obtain optimum consistency, flavour and odour, the two species should be present in about equal numbers in the culture. Dominance of either species can cause defects in the yoghurt affecting its consistency, flavour and odour etc. Equal numbers of both the species produce desirable yoghurt.

Streptococcus thermophilus Isolation Agar is based on the formulation originally developed by Lee et al⁽¹⁾ and is subsequently recommended by APHA⁽²⁾ for isolation and determination of ratio of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* in yoghurt. However later on Driessen et al⁽³⁾ reported two separate media to enumerate cocci and rods respectively from mixed cultures where *S. thermophilus* is grown on Streptococcus Thermophilus Isolation Agar (DM630) and *L. bulgaricus* is cultivated on Lactococcus Bulgaricus Agar (LB Agar, DM540).

Principles of the Procedure

Streptococcus thermophilus Isolation Agar contains sucrose, which is not fermented by majority of the *Lactobacillus bulgaricus* strains but is readily utilized by *Streptococcus thermophilus*. However if lactose is incorporated in this medium it is utilized by both the species. With a suitable combination of sucrose and lactose, the rate of acid production by *S. thermophilus* is enhanced while that of *L. bulgaricus* is restricted. Casein enzymic hydrolysate provides nitrogenous nutrients while yeast extract provide vitamin B complex and trace elements for the growth of *S. thermophilus*. Dipotassium phosphate buffers the medium by preventing pH imbalance.

Formula / Liter

| Ingredients | Gms / Liter |
|--|-------------|
| Casein enzymic hydrolysate | 10.00 |
| Yeast extract | 5.00 |
| Sucrose | 10.00 |
| Dipotassium phosphate | 2.00 |
| 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 42 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.





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Quality Control Specifications

| | |
|---------------------------|--|
| Dehydrated Appearance | Cream to yellow homogeneous free flowing powder |
| Prepared Medium | Light yellow coloured clear to slightly opalescent gel forms in Petri plates |
| Reaction of 4.2% 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 48-72 hours.

| Sr. No. | Organisms | Results to be achieved | | |
|---------|--|------------------------|----------------|----------|
| | | Inoculum (CFU) | Growth | Recovery |
| 1. | <i>Lactobacillus bulgaricus ATCC 11842</i> | 50 -100 | good-luxuriant | >=50% |
| 2. | <i>Streptococcus thermophilus ATCC 14485</i> | 50 -100 | good-luxuriant | >=50% |

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

Test Procedure

Refer appropriate references for specific test procedures.

Results

Refer 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.

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 : Streptococcus Thermophilus Isolation Agar

Product Code : DM0630

Available Pack sizes : 500gm

References

1. Lee S. Y., Vedomuthu E. R., Washam C. J. and Reinbold G. W., 1974, J. Milk Food Technol., 37:272.
2. Downes F. P. and Ito K., (Eds.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., APHA, Washington, D.C.
3. Driessen F. M., Ubbels J. and Stadhouders J., 1977, Biotechnol. Bioeng., 19:821.





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Further Information

For further information please contact your local MICROMASTER Representative.



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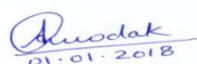

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