Streptococcus Thermophilus Isolation Agar

Intended Use
Streptococcus Thermophilus Isolation Agar is recommended for determining the ratio of *Streptococcus thermophilus* and *Lactobacillus bulgaricus* in yoghurt.

Summary
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. To obtain optimum consistency, flavour and odour, the two species should be present in about equal numbers in the culture. Dominance by either species can cause defects. Equal numbers of both the species produce desirable yoghurt. Streptococcus Thermophilus Isolation Agar, recommended by APHA, is used for determining the ratio of *S. thermophilus* and *L. bulgaricus* in yoghurt. Streptococcus Thermophilus Isolation Agar is based on the formulation originally developed by Lee *et al.,* However later on, Driessen *et al.,* reported two separate media to enumerate cocci and rods respectively from mixed cultures where *S. thermophilus* is grown on Streptococcus Thermophilus Isolation Agar and *L. bulgaricus* is cultivated on Lactococcus Bulgaricus Agar.

Principle
The medium contains sucrose, which is not fermented by majority of the *L. bulgaricus* strains but is readily utilized by *S. 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 and yeast extract provide nitrogenous nutrients, vitamin B complex and trace elements for the growth of *S. thermophilus*. Dipotassium phosphate prevents pH imbalance in the medium.

Formula*

Ingredients	**g/L**
Casein Enzymic Hydrolysate	10.0
Yeast Extract	5.0
Sucrose	10.0
Dipotassium Phosphate	2.0
Agar	15.0
Final pH (at 25°C)	6.8 ± 0.2

*Adjusted to suit performance parameters

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2°C-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of Specimen
Dairy samples.

Specimen Collection and Handling
Ensure that all samples are properly labelled. Follow appropriate techniques for handling samples as per established guidelines. Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure. The samples must be stored and tested within the permissible time duration. After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions
1. Suspend 42.00 g of the powder in 1000 mL purified / distilled water.
2. Heat to boiling to dissolve the powder completely.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.

Quality Control

Dehydrated Appearance: Cream to yellow coloured, homogenous, free flowing powder.
Prepared Appearance: Light yellow to amber coloured, clear to slightly opalescent gel forms in petridishes.
Cultural Response: Cultural characteristics observed after an incubation at 35°C-37°C for 48-72 hours.

Organism (ATCC)	Growth
Lactobacillus bulgaricus (11842)	Good
Streptococcus thermophilus (14485)	Good

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

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

Product Presentation:

Cat No.	Product description	Pack Size
201190340500	Dehydrated Culture Media	500 g