

TM 751 – L. S. DIFFERENTIAL MEDIUM BASE (LACTOBACILLUS STREPTOCOCCUS DIFFERENTIAL MEDIUM BASE)

INTENDED USE

For differentiation of Lactobacilli and Streptococci on the basis of colony morphology, TTC reduction and casein reaction.

PRODUCT SUMMARY AND EXPLANATION

L. S. (Lactobacillus Streptococcus) Differential Medium is used to differentiate *Lactobacillus* and *Streptococcus*. L. S. Medium is prepared according to the formulation of Eloy and Lacrosse and is a selective medium that supports good growth and differentiation of thermophilic lactobacilli and streptococci in yoghurt products. 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. The reduction of triphenyl tetrazolium chloride in connection with the casein reaction allows differentiation between lactobacilli and streptococci by means of colony morphology.

COMPOSITION

Ingredients	Gms / Ltr
Casein enzymic hydrolysate	10.000
Papaic digest of soyabean meal	5.000
Beef extract	5.000
Yeast extract	5.000
Dextrose	20.000
Sodium chloride	5.000
L-Cysteine hydrochloride	0.300
Agar	15.000

PRINCIPLE

This medium consists of casein enzymic hydrolysate, L-cysteine hydrochloride, papaic digest of soyabean meal, beef extract and yeast extract which act as sources of carbon, nitrogen, vitamins and minerals. Sodium chloride helps in maintaining osmotic balance. 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.

INSTRUCTION FOR USE

- Dissolve 65.3 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool to 50°C and aseptically add the following sterile solutions previously kept warm at 50°C just prior to use;
 - (1) 100 ml of 10% w/v aqueous solution of antibiotic-free skim milk powder sterilized at 15 psi pressure (121°C) for 5 minutes.
 - (2) 10 ml of 2, 3, 5-Triphenyl-Tetrazolium Chloride (T.T.C.) Solution.
- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium	: Light yellow coloured opalescent gel forms in Petri plates.
pH (at 25°C)	: 6.1 ± 0.2

INTERPRETATION

Cultural characteristics observed with added antibiotic free skim milk powder and 1% T.T.C solution, after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Colony characteristics	Incubation Temperature	Incubation Period
<i>Lactobacillus bulgaricus</i>	11842	50-100	Red, rhizoidal, surrounded by opaque zone	43-45 °C	48 Hours
<i>Streptococcus thermophilus</i>	14485	50-100	Red, smooth, surrounded by clear zone	43-45 °C	48 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.










Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Pette J. W. and Lolkema H., 1950, Neth. Milk Dairy J., 4:261.
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3. Sellars R. L. and Babel F. J., 1970, Cultures for the Manufacture of Dairy Products, Chr. Hanssens Laboratory, Inc., Milwaukee, Wis.
4. Eloy C. and Lacrosse R., 1976, Bull. Rech. Agron Gembloux, 11(1-2):83.
5. Revter G., 1985, Int. J. Food Microbiol., 2, 55-68
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.

 Good Manufacturing Practices Certified	 Best Before	 Quantity	 Catalogue Number	 Manufacturer
 Temperature Unit	 Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
Revision: 08 Nov., 2019

