

Litmus Lactose Bile Salt Agar (LLBSA)**M507**

Litmus Lactose Bile Salt Agar is used for selective isolation of enteric bacteria on the basis of lactose fermentation.

Composition***

Ingredients	Gms / Litre
Peptic digest of animal tissue	20.000
Sodium taurocholate	5.000
Beef extract	5.000
Sodium chloride	5.000
Lactose	20.000
Litmus	0.500
Agar	15.000
Final pH (at 25°C)	7.4±0.2

***Formula adjusted, standardized to suit performance parameters

Directions

Suspend 70.5 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Principle And Interpretation

Numerous plating media are in use today for the differentiation of lactose-fermenters and lactose non-fermenters. Some of these are selective, whereas others are differential. Some lactose fermenting, gram-negative enteric bacteria can tolerate the inhibitory substances present in the media. These bacteria can be recognized readily by their appearance on selective plates.

Litmus Lactose Bile Salt Agar is a modification of Litmus Lactose Agar formulated by Wurtz (1) and is used for the isolation of enteric bacteria. It can be successfully used in place of MacConkey Agar.

LLBSA Medium contains sodium taurocholate, which inhibits the growth of gram-positive microorganisms. Lactose is the fermentable sugar utilized by coliform enteric bacteria leading to production of acid. Peptic digest of animal tissue and beef extract supply the essential nutrients like nitrogen compounds for the growth of enteric bacteria. Sodium chloride maintains the osmotic balance of the medium.

Quality Control**Appearance**

Light purple to greyish yellow homogeneous free flowing may contain minute to small particles.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Light purple coloured slightly opalescent gel forms in Petri plates, may have black particles

Reaction

Reaction of 7.05 w/v aqueous solution at 25°C. pH : 7.4±0.2

Cultural Response

M507: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony		
<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant	≥50%	red		
<i>Salmonella Typhi</i> ATCC 6539	50-100	good-luxuriant	≥50%	deep blue to violet		
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	good-luxuriant	≥50%			
<i>Staphylococcus aureus</i> ATCC 25923	50-100	inhibited	0%			
<i>Proteus mirabilis</i> ATCC 25933	50-100	good-luxuriant (no swarming)	≥50%	blue to violet		
<i>Enterococcus faecalis</i> ATCC 29212	50-100	inhibited	0%			

Reference

1. Wurtz, 1897, Technique Bacteriologique Paris, Masson.

Storage and Shelf Life

Store below 30°C and prepared medium at 2-8°C. Use before expiry period on the label.