

Lactose Broth

REF.	Pack size
615 01 100	100 gm
615 01 100	500 gm

Intended Use

Lactose Broth is used for the cultivation of Salmonella and coliform bacteria such as Escherichia coli isolated from blood, urine and faeces

Background

Lactose Broth is frequently used as a pre-enrichment medium when testing foods and dairy products for Salmonella sp. In dried or processed foods, Salmonella species may be sublethally injured and in low numbers. The presence of other bacteria as well as components of the food sample may hinder growth and recovery of Salmonella. Pre-enrichment in a nonselective medium such as Lactose Broth allows for repair of cell damage, dilutes toxic or inhibitory substances, and provides a nutritional advantage to Salmonella over other bacteria. Lactose Broth is widely used and is included in many procedures for testing foods, dairy products and other materials.

Principle

Peptone and beef extract provide nitrogen and carbon compounds while lactose is the fermentable carbohydrate. Fermentation of lactose is demonstrated by the production of gas.

Components	gm/Litre
Peptone	5.0
Beef Extract	3.0
Lactose	5.0
Final pH (at 25°C)	6.9 ± 0.2

Preparation, Storage and Stability

Store the dehydrated medium at 10-30°C and use before the expiry date on the label. Store the prepared medium at 2-8°C. After the desired amount has been taken out, replace the cap tightly to protect from hydration.

Procedure

1. Suspend 13 g of the powder in 1 L distilled water and mix well.
2. Heat if necessary to dissolve the powder completely.
3. Distribute into test tubes containing inverted Durham tubes, in 10 ml amounts for testing samples of 1ml or less. For testing larger samples, prepare double strength broth (26 gms in 1000 ml) and distribute in 10 ml amounts.
4. Autoclave at 121°C for 15 minutes.

Quality Control

Appearance

- 1- Dehydrated Appearance : yellow coloured, homogeneous, free flowing powder.
- 2- Prepared Appearance : light yellow clear solution with no precipitate.
- 3- Cultural Response : after 18-48 hours at 30-35°C (As per pharmacopeia) or at 35± 2°C for clinical specimens

Note : Add 1-2 drops of 1% phenol red solution, after incubation, to observe acid production

Organisms (ATCC)	Growth	Gas	Acid
<i>Salmonella enterica</i>	Good	—	- (Red/Pink)
<i>Enterobacter aerogenes</i>	Good	+	+(Yellow)
<i>Enterococcus faecalis</i>	Good	--	+(Yellow)
<i>Escherichia coli</i>	Good	+	+(Yellow)

Interpretation of the results

1- A positive test for coliforms is the production of turbidity in the medium and gas in the durhams's tube within 48 hours.

Precautions

- 1- The results should be confirmed by additional standard testing
- 2- The Durham's tubes must be free from air bubbles before inoculation.
- 3- Avoid overheating as inhibitory products may be formed.

Bibliography

1. Vanderzant, C., and D. F. Splittstoesser (eds.). 1992. Compendium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington, D.C.
2. Marshall, R. T. (ed.). 1992. Standard methods for the examination of dairy products, 16th ed. American Public Health Association, Washington, D.C.
3. Eaton, A.D., L.S. Clesceri, and A.E. Greenberg (eds.). 1995. Standard methods for the examination of water and wastewater, 19th ed. American Public Health Association, Washington, D.C.