M-LAURYL SULPHATE BROTH TM 775

For enumeration of *Escherichia coli* in water by membrane filter technique

Composition

Ingredients	Gms/Ltr.
Peptic digest of animal tissue	39.00
Lactose	30.00
Yeast extract	6.00
Sodium lauryl sulphate	1.00
Phenol red	0.20

* Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight.

Instructions for Use

Dissolve 76.2gms in 1000ml distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Dispense as desired and Sterilize for 30 minutes for three consecutive days or by autoclaving at 121°C for 15 min. Cool to 45-50ºC.

Appearance: Red colour, clear solution
pH (at 25°C): 7.4 ± 0.2

Principle

M-LAURYL SULPHATE BROTH is used for enumeration of *Escherichia coli* in water by membrane filter technique. Scientist 'Burman' substituted Teepol in place of bile salts in the Membrane Enriched Teepol Broth, a membrane filtration test medium used to detect coliform organisms in water. The replacement of bile salts by Teepol was previously mentioned by other microbiology groups. Membrane Lauryl Sulphate Broth is similar to Membrane Enriched Teepol Broth except that the selective agent Teepol has been replaced by 0.1% (w/v) sodium lauryl sulphate. Peptic digest of animal tissue and Yeast extract provide carbon, nitrogen, amino acids, minerals, vitamins, trace elements and other essential nutrients for growth. Lactose serves as a fermentable carbohydrate source. Phenol red is the indicator and change from red to yellow because of the acid production from the fermentation. Sodium lauryl sulphate inhibits gram positive organisms. Mix the broth and pour the contents evenly over the absorbent pad and place the lid on the Petri plates. Filter sample or diluted sample using a 47 mm white gridded 0.45 µm membrane filter, grid side up. Transfer the filter to the previously prepared Petri plates using sterile forceps. Place the filter grid side up, onto the absorbent pad with a slight rolling motion. Check for trapped air under the filter and make sure the filter touches the entire pad. Replace the Petri plate's lid. Invert the Petri plates and incubate at 35°C and at 44ºC for 24 hours. Yellow colour colonies are formed for the confirmation of *E. coli*. Count the colonies. Use a 10 to 15X microscope if necessary.

Interpretation

Cultural characteristics observed after inoculating (10^3CFU/ml), on incubation at 35°C and at 44ºC for 24 hours.

Microorganisms	ATCC	Inoculum (CFU/ml)	Growth at 35^{0}C	Growth at 44^{0}C
Escherichia coli	25922	10^3	Luxuriant to excellent	Luxuriant to excellent
Enterobacter aerogenes	13048	10^3	Luxuriant to excellent	Inhibited

References

1. J.E. Jameson, N.W. Emberley, J. Gen. Microbiol., 15, 198-204. (1956).
2. W.H.H. Jebb, J. Hyg. Camb., 7, 84-192. (1959).
3. E. Windle Taylor, Glutamic acid media, 39th Ann. Rep. Dir. Water Exam. Met. Water Board, London, p. 27-30. (1959-60).
4. E. Windle Taylor, Glutamic acid medium, 40th Ann. Rep. Dir. Water Exam. Met. Water Board, London, p. 18-22. (1961-62).