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BioScien

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M-Lauryl Sulphate Broth

M-Lauryl Sulphate Broth is used for enumeration of Escherichia coli and coliforms in water, using membrane filter technique.

REF: BS.1/ML01.100.0100	100 Gram	REF: BS.1/ML01.250.0250	250 Gram
REF: BS.1/ML01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

The membrane filter technique is used to test relatively large volumes of samples. It is extremely useful in monitoring drinking water and a variety of natural waters (1). The earlier medium used to detect coliforms in water employed bile salts as the selective agent. This was replaced with Teepol by Burman (2). The effectiveness of teepol was demonstrated earlier (3, 4). MLauryl Sulphate Broth is similar to this medium, the only difference being the use of sodium lauryl sulphate as the inhibitory agent instead of teepol. M-Lauryl Sulphate Broth is recommended for enumeration of *Escherichia coli* and coliforms using membrane filtration technique (5, 6). An absorbent pad is saturated with M-Lauryl Sulphate Broth. The filter, through which the water sample is passed, is aseptically placed on this saturated absorbent pad, with face upwards. Burman (7) recommended the following incubation temperatures and durations.

Unchlorinated waters:

Coliform organisms : 4 hours at 30°C followed by 14 hours at 35°C

Escherichia coli : 4 hours at 30°C followed by 14 hours at 44°C

Non-chlorinated organisms benefit from 4 hours incubation at 30°C but chlorinated organisms require 6 hours incubation at 25°C. After incubation, yellow colonies are formed which should be confirmed further.

METHOD PRINCIPLE

Peptic digest of animal tissue and yeast extract act as a source of nitrogen, carbon and amino acids. Lactose is the source of fermentable carbohydrate. Phenol red serves as an indicator. Sodium lauryl sulphate inhibits gram-positive bacteria.

MEDIA COMPOSITION

Item	Formula per liter of medium
- Peptic digest of animal tissues	39.00 gm.
- Yeast extract	6.000 gm.
- Lactose	30.00 gm.
- Phenol red	0.200 gm.
- Sodium lauryl sulphate	1.000 gm.

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  S56: dispose of this material and its container at hazardous or special waste collection point.
  S57: use appropriate container to avoid environmental contamination.

  S61: avoid release in environment.

For further information, refer to M-Lauryl Sulphate Broth material safety data sheet.

STORAGE AND STABILITY

BioScien M-Lauryl Sulphate Broth dehydrated media are stable until expiration date stated on label when properly stored 10-30°C. The prepared medium should be stored at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Final pH 7.4 ± 0.2 at 25°C

MEDIA PREPARATION

- Suspend 76.2 grams in 1000 ml distilled water.
- Adjust pH to *7.4 ± 0.2 at 25°C*
- Heat if necessary to dissolve the medium completely.
- Dispense as desired and sterilize by steaming for 30 minutes on three consecutive days or by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Deterioration

The color of ***BioScien*** M-Lauryl Sulphate Broth is Light yellow to pink homogeneous free flowing powder. If there are any physical changes, discard the medium.

The prepared medium is Red coloured clear solution without any precipitate, media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

Type of specimen

Clinical samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile test tubes
- Incubator

PERFORMANCE CHARACTERISTICS

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Cultural characteristics observed after an incubation at 35 - 37°C for 72 hours when sub cultured from Stuart Transport Medium.

Test Organisms	Growth at 40ºC
Enterobacter aerogenes ATCC 13048	Inhibited
Bacillus subtilis ATCC 6633	Inhibited
Streptoccs pneumoe ATCC 6303	Inhibited
Enterococcus faecalis ATCC 29212	Inhibited
Escherichia coli ATCC 25922	luxuriant

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

1. Stuart, 1946, Glasgow Med. J. 27:131.
2. Stuart, Toshach and Patsula, 1954, Can. J. Public Health, 45:73.
3. Ringertz, 1960, Acta Pathol. Microbiol. Scand., 48:105.

4. Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
5. Crookes E.M.L. and Stuart R.D., 1959, J. Path. Bact., 78:283.
6.Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
7. Jorgensen,J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number		Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		