

Technical Information

Loeffler Medium Base

Product Code: DM 1537

Application: - Loeffler Medium Base with added horse serum is recommended for the cultivation of *Corynebacterium diphtheriae* from clinical specimens and in pure cultures, detection of chromogenesis, proteolysis and the production of ascospores.

Composition**

Ingredients	Gms / Litre
Peptone, special	2.500
Beef extract	2.500
Sodium chloride	1.250
Dextrose	2.500
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Loeffler Medium was originally devised by Loeffler (1) and was further modified by Perry and Petran (2) and Buck (3). Loeffler medium enhances primary and secondary isolation and cultivation of fastidious pathogenic microorganisms especially from nose and throat. It also restores virulence and other identifying properties (microscopic and colonial) after they have been lost due to prolonged incubation or repeated subculturing.

The high serum content helps in determining proteolytic activity of organisms. It is also used for demonstration of pigmentation and ascospores. Peptic digest of animal tissue, beef extract supply essential growth nutrients. Dextrose is the source of fermentable carbohydrate and energy.

Rub the swabs directly over the surface of medium and after incubation; prepare the smears from surface of slope. For proteolysis testing, inoculate slant and prior to incubation, flood the slant with Brewer Thioglycollate Medium (DM 1019). Incubation should be carried out for 3-4 days or much longer for appearance of proteolysis. Loeffler Medium should be used in parallel with Serum Tellurite Agar for selective isolation of *Corynebacteria* (4).

Methodology

Suspend 8.75 grams in 250 ml purified/distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at Δ 115°C for 20 minutes. Cool to 45-50°C and aseptically add 750 ml of sterile Horse Serum (RM 3239). Mix well and aseptically dispense into sterile tubes. Sterilize the medium by inspissation at 80-85°C for 2 hours in free flowing steam for atleast 3 consecutive days. Δ corresponds to 10 lbs pressure.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity

Basal: Light amber coloured clear to slightly opalescent solution. ; After addition of horse serum: Off-white coloured opaque solution

Reaction

Reaction of 3.52% w/v aqueous solution of base at 25°C. pH : 7.3±0.2

pH Range

7.10-7.50

Cultural Response

DM 1537: Cultural characteristics observed with added 750ml horse serum, after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth
<i>Corynebacterium diphtheriae</i> ATCC 11913	50-100	fair-good
<i>Pseudomonas aeruginosa</i> ATCC 10145	50-100	good (green colonies with proteolysis)
<i>Staphylococcus aureus</i> ATCC 25923	50-100	good (yellow to gold colonies)

Storage and Shelf Life

Dried Media: Store between 10-30°C in a tightly closed container and the prepared medium 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 prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in 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.

Further Reading

1. Buck, 1949, J. Lab. Clin. Med., 34:582.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
3. 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.
4. Loeffler F., 1887, Zentralb. Bakteriol. Parasitenkd., 2:102.
5. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
6. Perry and Petran, 1939, J. Lab. Clin. Med., 25:71.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at CDH is true and accurate
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