Technical Information

Levinthals Medium Base

Product Code: DM 1472

Application: - Levinthals Medium Base with the addition of blood is used for cultivation of Haemophilus species.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Beef extract	10.000
Sodium chloride	5.000
Agar	20.000
Final pH (25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

The genus Haemophilus includes a number of species that are responsible for a wide variety of infections but share a common morphology and requirement for blood-derived factors during their cultivation in the lab. Haemophilus influenzae, the major pathogen, is the most virulent organism in this group, causing bloodstream invasion and meningitis in children below 2 years of age. Other Haemophilus species cause disease less frequently. The Haemophilus genus represents a large group of gram-negative rods that grow on blood agar. The blood provides two factors, for growth: are -X and –V factor [1]. Levinthals Medium is used for the cultivation of Haemophilus those require haemoglobin for their growth in the culture medium. Whole blood of rabbit or human blood contains two important factors viz x and v factor necessary for the growth of different of H. influenza *Species* [2]. Factor-X is a heat stable substance in which the hemin is associated with haemoglobin, where as factor-V is a heat labile coenzyme named as Nicotinamide Adenine Dinucleotide (NAD). Other nutrients such as nitrogen compounds are supplied by peptic digest of animal tissue and beef extract incorporated in the medium. Sodium chloride helps to maintain osmotic balance of the medium. Pathogenic Haemophilus species may be presumptively identified by determining in vitro growth requirements for X and V factors and by haemolytic reactions.

Methodology

Suspend 45 grams of powder media in 1000 ml distilled water. Shake well & heat to boiling to dissolve the medium completely. Dispense in 100 ml amounts and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and add 5 ml sterile rabbit or human blood to 100 ml medium. Heat the mixture in boiling water bath. Allow the deposits to settle and dispense clear supernatant.

Quality Control

Physical Appearance
Cream to yellow homogeneous coarse powder
Gelling
Firm, comparable with 2.0% agar gel.
Colour and Clarity of prepared medium
Basal medium : Light yellow coloured clear to slightly opalescent gel After addition of blood & heating : Chocolate brown coloured, opaque gel forms in Petri plates
Reaction
Reactionof 4.5% w/v aqueous solution at 25°C.pH:-7.6±0.2
pH range7.10-7.50
Cultural Response/ characteristices
DM1472: Cultural characteristics observed with added sterile rabbit or human blood, under 5-10% CO2 and 70% humidity, after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery
Haemophilus influenzae ATCC 35056	50-100	luxuriant	>=70%
Staphylococcus aureus ATCC 25923	50-100	luxuriant	>=70%
Streptococcus pyogenes ATCC 19615	50-100	luxuriant	>=70%

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^{o} in sealable plastic bags for 2-5 days.

Further Reading

1. Sell S. H., Wright P. F., (Eds.), Haemophilus influenzae, Epidemiology, Immunology, and Prevention of Disease, Elsevier Biomedical, New York, 1982, St. Geme J. W.,III, Falkow S: Infect and Immun, p.4036, 1990
2. Finegold S. M. and Baron E. J., 1986, Bailey and Scotts Diagnostic Microbiology, 7th Ed., The C.V. Mosby Company, St. Louis.

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
- **Central Drug House Pvt. Ltd.** reserves the right to make changes to specifications and information related to the products at any time.
- Products are not intended for human or animal diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.
- Donot use the products if it fails to meet specificatons for identity and performens parameters.