Edwards and Bruner Semisolid Medium

M294

Edwards and Bruner Semisolid Medium is used for detection of motility and separation of H and O phases of enteric bacilli.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Beef extract	3.000
Gelatin	80.000
Sodium chloride	5.000
Agar	4.000
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 102 grams in 1000 ml warm distilled water. Heat to boiling to dissolve the medium completely. Dispense in tubes and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool the tubes in an upright position.

Principle And Interpretation

Edwards and Bruner (1) formulated a semisolid medium, which is used in routine identification of enteric bacilli by means of motility and separation of H and O phases. *Salmonella* is found in nature and occurs in the intestinal tract of many animals, both wild and domestic. Infection in humans occurs through consumption of contaminated vegetables, raw meat and other food products. Serotypes of *Salmonella* are defined based on the antigenic structure of both somatic cell wall antigen (O) and flagellar antigen (H).

Complete identification of *Salmonella* involves isolation on selective media, biochemical characterization and then confirmation by serotyping. Serological confirmation involves the procedure in which the microorganism (antigen) reacts with its corresponding antibody. *Salmonella* can be recovered when samples are processed to recover injured microorganisms. The purity of the cultures and their biochemical test reactions should be determined. These aid in the identification of the organisms as a *Salmonella* species. After these criteria have been met, serological identification can be performed. It is often necessary to increase the motility of the test organism. To accomplish this, make several consecutive transfers in motility medium. Inoculate the tubes slightly below the surface of the medium using stab method, incubate and transfer only those organisms that have migrated to the bottom of the tubes. When the organism successfully travels 50-60 mm through the medium in 18-20 hours, it is ready to use.

Peptic digest of animal tissue and beef extract provide all the essential growth nutrients required by enteric bacilli. Cultures are inoculated by stabbing with a straight wire. Motile organisms grow diffusely and spread through the medium while non-motile organisms grow along the line of stab inoculation.

Quality Control

Appearance
Cream to beige homogeneous free flowing powder

Gelling
Semisolid, comparable with 0.4% Agar gel.

Colour and Clarity of prepared medium
Light amber coloured, clear to slightly opalescent gel forms in tubes as butts

Reaction
Reaction of 10.2% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH
6.70-7.10

Cultural Response

M294: Cultural characteristics observed after an incubation at 35 - 37°C fo r 18 - 24 hours.

Organism	Inoculum (CFU)	Growth	Motility
Cultural Response			
Escherichia coli ATCC 25922	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
Enterobacter aerogenes ATCC 13048	50-100	luxuriant	positive, growth away from stabline causing turbidity
Proteus mirabilis ATCC 25933	50-100	luxuriant	positive, growth away from stabline causing turbidity
Salmonella Typhimurium ATCC 14028	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
Salmonella Enteritidis ATCC 13076	50-100	good-luxuriant	positive, growth away from stabline causing turbidity
Shigella sonnei ATCC 25931	50-100	good-luxuriant	negative, growth along the stabline, surrounding medium remains clear
Staphylococcus aureus ATCC 25923	50-100	good-luxuriant	negative, growth along the stabline, surrounding medium remains clear

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1. Edwards and Bruner, 1942, Univ. Ky. Cir., 154.

Revision : 1 / 2011

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories 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 or therapeutic use but for laboratory,diagnostic, research or further manufacturing use only, unless otherwise specified. 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.