Anaerobic Basal Broth

M1636

Intended Use:

Recommended for the growth of anaerobic microorganisms, particularly Bacteroides spp. and other fastidious anaerobes.

Composition**

Ingredients	Gms / Litre
Peptone	16.000
Yeast extract	7.000
Sodium chloride	5.000
Starch	1.000
Dextrose (Glucose)	1.000
Sodium pyruvate	1.000
Arginine	1.000
Sodium succinate	0.500
Sidium bicarbonate	0.400
L-Cysteine hydrochloride	0.500
Ferric pyrophosphate	0.500
Hemin	0.005
Vitamin K	0.0005
DL Dithiothreitol (DTT)	1.000
Sodium thioglycollate	0.500

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 35.4 grams in 1000 ml purified / distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50-55ºC and aseptically add 5-10% v/v sterile defibrinated horse blood. Mix well and dispense as desired.

Principle And Interpretation

Bacteroides are major bacteria found in the human normal flora, harboring in the intestinal tract. They are generally opportunistic anaerobes and can cause a variety of infections throughout the body. The most common infections include pleuropulmonary, intraabdominal and infections of the female urogenital tract. *Bacteroides* make up about one-third of the total anaerobic isolates obtained from various infections. Anaerobic Basal broth is recommended for fastidious anaerobes like *Bacteroides* species. Anaerobic organisms require reducing conditions and an absence of dissolved oxygen in the medium. Strict anaerobes obtain its energy and intermediates through oxidation utilizing hydrogen acceptors other than oxygen. Pre-reducing the medium by boiling to drive off the oxygen can expel this. Also reducing agents such as thioglycollate or cysteine can be added to the medium (1).

Anaerobic Basal broth contains peptone and yeast extract which provides nitrogen and carbon source, long chain amino acidsand necessary vitamins for growth of *Bacteroides*. Starch absorbs toxic metabolites produced (2). Sufficient arginine is added to ensure the growth of *Eubacterium lentum* (3). Hemin and Vitamin K serves as growth factors for many *Bacteroides* species (4). Sodium succinate improves the growth of *Prevotella melaninogenica* and *Bacteroides* species(5). Sodium pyruvate is the energy source and also acts similarly to catalase and degrades traces of hydrogen peroxide, which may be produced by the action of molecular oxygen on media components (6). L-cysteine hydrochloride and dithiothreitol act as reducing agents. (7).

Type of specimen

Clinical samples - Throat, gingiva, sputum, gastric contents, small bowel, feces, rectal swabs, surfaces of decubitus ulcers, encrusted walls of abscesses, mucosal lining, eschar, voided urine, vagina or cervix, skin and adjacent mucous.

Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic use. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Further recovery from this enriched broth onto selective media (M1635) is required.
2. Biochemical characterization is carried out from pure isolates for complete identification.

Performance and Evaluation

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

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Basal medium: Light amber coloured clear to slightly opalescent. After addition of 5%w/v sterile defibrinated blood : Cherry red coloured opaque solution in tubes

Cultural Response

Cultural characteristics observed with added 5% w/v sterile defibrinated blood, after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth
Peptostreptococcus anaerobius ATCC 27337	50-100	luxuriant
Prevotella melaninogenicus ATCC 15930	50-100	luxuriant
Clostridium perfringens ATCC 13124 (00007*)	50-100	luxuriant

Reference

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Revision : 1 / 2011