Anaerobic CNA Agar Base

M1034

Intended Use:

Recommended for the selective isolation of anaerobic *Streptococci* from clinical and non-clinical samples.

Composition**

Ingredients	g / L
Tryptone	12.000
Peptone	5.000
Yeast extract	3.000
HM peptone B #	3.000
Corn starch	1.000
Dextrose (Glucose)	1.000
Sodium chloride	5.000
Dithioerythreitol (DTE)	0.100
L-Cystine hydrochloride	0.500
Vitamin K1	0.010
Hemin	0.010
Colistin	0.010
Nalidixic acid	0.010
Agar	13.500

**Formula adjusted, standardized to suit performance parameters
- Equivalent to Beef extract

Directions

Suspend 44.14 grams in 1000 ml purified / distilled water. 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 45-50°C and aseptically add 5 ml sterile defibrinated sheep blood to every 100 ml medium. Mix well and pour into sterile Petri plates.

Principle And Interpretation

The genus *Streptococcus* is comprised of a wide variety of both pathogenic and commensal gram-positive bacteria, which are found to inhabit a wide range of hosts, including humans, horses, pigs and cows. They are facultatively anaerobic. Within the host, Streptococci are often found to colonize the mucosal surfaces of the mouth, nares and pharynx. However, in certain circumstances, they may also inhabit the skin, heart or muscle tissue. Streptococci are generally considered as fastidious organisms as they have exacting nutritional requirements. Columbia Agar formulated by Ellner et al. was designed to obtain luxuriant growth of various fastidious organisms (1). The media was rendered selective by the addition of selective agents, colistin (C) and nalidixic acid (NA). This supplemented Columbia Agar (with C & NA) exhibited luxuriant growth of fastidious organisms like Streptococci, Enterococci, and Staphylococci etc. on supplementation with sterile defibrinated sheep blood. Anaerobic CNA Agar Base is a modification of Columbia CNA Agar base with additional enrichment supplements i.e. vitamin K1 and hemin (2).

Columbia CNA Agar Base is used for the selective isolation of anaerobic gram-positive cocci including Streptococci. Tryptone, peptone, yeast extract and HM peptone B serve as source of carbon, nitrogen, and essential nutrients. Corn starch neutralizes the toxic metabolites formed. Dextrose serves as the carbon source while sodium chloride maintains the osmotic equilibrium. Dithiothreitol and L- cystine help to create anaerobic conditions. Vitamin K1 and hemin stimulate growth of anaerobic bacteria. Colistin and Nalidixic acid in the medium inhibit accompanying gram-negative enteric bacteria (1) by disrupting the cell membrane and blocking DNA replication respectively (3).

Anaerobic CNA Agar plates should ideally be reduced prior to inoculation by keeping under anaerobic conditions for 18-24 hours. Samples can be directly streaked on the plates.

Type of specimen

Clinical samples - faeces, nasal swabs, throat swabs

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 only. For professional use only. 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. Incubation of inoculated plates should be carried out at 35-37°C under anaerobic conditions for 48 hours. Negative cultures should be incubated for 7 day before reporting.
2. Individual organisms differ in their growth requirement and may show variable growth patterns on the medium.
3. Each lot of the medium has been tested for the organisms specified on the COA. It is recommended to users to validate the medium for any specific microorganism other than mentioned in the COA based on the user's unique requirement.

Performance and Evaluation

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

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm,comparable with 1.35% Agar gel.

Colour and Clarity of prepared medium

Basal medium : Yellow coloured, clear to slightly opalescent gel. After addition of 5%v/v sterile defibrinated sheep blood: Cherry red coloured, opaque gel forms in Petri plates

Cultural Response

Cultural characteristics observed under anaerobic condition with added 5%v/v sterile defibrinated sheep blood,after an incubation at 35-37°C for 2-7 days.

Organism	Growth
Escherichia coli ATCC 25922 (00013*)	none-poor
Peptostreptococcus anaerobius ATCC 27337	good

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

Store dehydrated 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 inorder 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.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,5).

Reference

1. Ellner, Stoessel, Drakeford and Vasi, 1966, Am. J. Clin. Pathol., 40. 502
2. Ellner, Granato and May, 1973, Appl.Microbiol. 26:904
3. Esteve Z. 1984, Lab Med., 15:258
4. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.

5.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.

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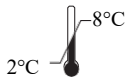
IVD ***In vitro* diagnostic medical device**



Storage temperature

EU REP

AR Experts BV
Boeingavenue 209
1119 PD Schiphol-Rijk
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CE Marking

Do not use if package is damaged

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