

Modified Wilkins Chalgren Broth

LQ014

Intended Use

Recommended as a qualitative test for detection of strict or facultative anaerobic microorganisms in blood. *Sterile, in glass bottles.*

Composition**

Ingredients	g/ L
Tryptone	10.000
Peptone	10.000
Yeast extract	5.000
Dextrose (Glucose)	1.000
Sodium chloride	5.000
L-Arginine	1.000
Sodium pyruvate	1.000
Hemin	0.005
Menadione	0.0005
Final pH (at 25°C)	7.1±0.2
**Formula adjusted, standardized to suit performance parameters	
Anaero Supplement (FD001)	2 vials

Directions

Label the ready to use blood culture bottle. Remove the Aluminium foil cap. Disinfect the part of the rubber stopper which is now exposed. Draw patient's blood with the sterile or disposable needle and syringe as explained in specimen collection and disposable column. Transfer the blood sample immediately into the culture bottle by puncturing the rubber stopper with the needle and injecting the blood. Venting: Use sterile venting needle (LA038). Keep the bottle in an upright position preferably in a biological safety cabinet, place an alcohol swab over the rubber stopper and insert the venting needle with filter through it. Insertion and withdrawal of the needle should be done in a straight line. discard the needle and mix the contents by gently inverting the bottle 2-3 times. Do Not vent the bottle for anaerobic cultures. Incubate at 35-37°C for 40-48 hours and further for seven days.

Principle And Interpretation

Wilkins Chalgren Anaerobic Broth Base, formulated by Wilkins and Chalgren (1), is the preferred medium for susceptibility testing of anaerobes. This medium is also recommended for testing anaerobic bacteria (2,3,4). Wilkins Chalgren Anaerobic Broth Base is similar to the agar medium, except the agar (5). The broth medium is especially useful in the broth micro-dilution tests (6). Wilkins Chalgren Broth media need to be appropriately supplemented to support the growth of certain anaerobic bacteria.

Hemin and Menadione (Vitamin K3) enhances the growth of *Bacteroides* species and *Prevotella melaninogenica*, respectively and many other species of gram-negative anaerobic rods (3,7). The medium can also be supplemented with defibrinated or lysed blood for the growth of fastidious anaerobic bacteria (3).

Tryptone and Peptone serve as sources of essential nutrients including carbon and nitrogen. Yeast extract provides vitamins and other growth factors like purines and pyrimidines that are essential for the growth of *P. melaninogenica*. Arginine serves as an amino acid source while pyruvate serves as an energy source.

Type of specimen

Clinical- blood

Specimen Collection and Handling :

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (7,8).

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. Proper anaerobic conditions must be maintained for optimal recovery of organisms.

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

Sterile clear Modified Wilkins Chalgren broth in glass bottle.

Colour

Medium amber coloured clear solution

Quantity of Medium

20ml of medium in glass bottle. (Volume of blood for paediatrics use - 1 to 3 ml)

pH

6.90- 7.30

Sterility Check

Passes release criteria

Cultural response

Cultural characteristics was observed after incubation at 35-37°C for 40-48 hours under anaerobic conditions.

Organism	Inoculum (CFU)	Growth	Growth under aerobic conditions
<i>Bacteroides fragilis</i> ATCC 25285	50-100	luxuriant	-
<i>Clostridium perfringens</i> ATCC 12924	50-100	luxuriant	-
<i>Prevotella melaninogenicus</i> ATCC 15930	50-100	luxuriant	-
<i>Escherichia coli</i> ATCC 25922 (00013*)	>=10 ⁴	-	inhibited
<i>Bacteroides melaninogenicus</i> ATCC 25611	50-100	luxuriant	-
<i>Phocaeicola vulgatus</i> ATCC 8482	50-100	luxuriant	-

Key : *Corresponding WDCM numbers.\$ Formerly known as *Bacteroides vulgatus*

Storage and Shelf Life

Store between 15-30°C. Use before expiry date on the label. 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 (7,8).

Reference

1. Wilkins T. D. and Chalgren S., 1976, Antimicrob. Agents Chemother., 10 : 9
2. Clinical and Laboratory Standards Institute, 2006, Methods for Antimicrobial Susceptibility Testing of Anaerobic Bacteria, Approved standard M11-A3, CLSI, Villanova, Pa.
3. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney Practical Medical Microbiology, 1996, 14th Edition, Churchill Livingstone.

4. King A., Phillips I., 1988, J. Antimicrob. Chemother., 21:425-43
5. Gibbons R. J. and MacDonald J. B., 1960, J. Bacteriol., 80:16
6. Quinto G. and Sebald M., 1964, Am. J. Med. Technol., 30:38
7. Isenberg (Ed.), 1992, Clinical Microbiology Procedures Handbook, American Society for Microbiology, Washington, D.C.
8. 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.

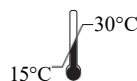
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HiMedia Laboratories Pvt. Limited,
Plot No.C-40, Road No.21Y,
MIDC, Wagle Industrial Area,
Thane (W) -400604, MS, India



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