

ANAEROBIC BLOOD AGAR (CDC) w/ and w/o ADDITIVES

INTENDED USE

Remel Anaerobic Blood Agar (CDC) w/ and w/o Additives are solid media recommended for use in qualitative procedures for primary isolation and cultivation of anaerobic organisms, including fastidious strains.

SUMMARY AND EXPLANATION

This medium was formulated by V.R. Dowell and T.M. Hawkins at the Centers for Disease Control and Prevention in Atlanta, Georgia.¹ Anaerobic Blood Agar (CDC) supports good growth and typical pigmentation of fastidious and slow-growing anaerobes, as well as other anaerobes of significant clinical importance.

PRINCIPLE

Anaerobic Blood Agar (CDC) base contains peptones which supply nitrogenous substances and amino acids necessary for the growth of anaerobic bacteria. Yeast extract provides B-complex vitamins and serves as a growth enhancer. Hemin, vitamin K, and sheep blood stimulate the growth of anaerobes. Sodium chloride is a source of essential electrolytes and maintains osmotic equilibrium. Kanamycin and vancomycin are antibiotics which inhibit gram-positive organisms and facultative anaerobic bacteria and select for gram-negative bacilli. Laked blood is used in anaerobic media to enhance pigmentation of anaerobic organisms.² Neomycin aids in the isolation of anaerobic organisms, such as *Bacteroides* and *Clostridium* species, and inhibits gram-negative *Enterobacteriaceae*. Phenylethyl alcohol (PEA) reduces the growth of facultative gram-negative anaerobes while allowing the growth of obligate anaerobic bacteria.³ Paromomycin and vancomycin facilitate the recovery of fastidious, obligately anaerobic nonsporeforming gram-negative bacilli from mixed populations by inhibiting facultative and aerobic gram-negative rods.⁴

REAGENTS (CLASSICAL FORMULAE)*

Casein Peptone.....	15.0 g	Vitamin K.....	10.0 mg
Sodium Chloride.....	5.0 g	Hemin.....	5.0 mg
Soy Peptone.....	5.0 g	Sheep Blood.....	5 %
Yeast Extract.....	5.0 g	Agar.....	20.0 g
L-Cystine.....	0.4 g	Deminerlized Water.....	1000.0 ml

pH 7.5 ± 0.2 @ 25°C

The following combinations of optional ingredients are available per liter of media:

1. Kanamycin.....	100.0 mg	4. Phenylethyl Alcohol.....	2.5 g
Vancomycin.....	7.5 mg		
2. Laked Sheep Blood.....	5 %	5. Paromomycin.....	100.0 mg
Kanamycin.....	100.0 mg	Vancomycin.....	7.5 mg
Vancomycin.....	7.5 mg		
3. Neomycin.....	100.0 mg	6. Laked Sheep Blood.....	5 %
		Paromomycin.....	100.0 mg
		Vancomycin.....	7.5 mg

*Adjusted as required to meet performance standards.

PROCEDURE

1. Prior to use, reduce the plates for a minimum of 24 hours by placing them in an anaerobic environment at room temperature.
2. Inoculate specimens for anaerobic culture on both selective and non-selective media as soon as possible after receipt in the laboratory; streak plates for isolation.
3. Incubate anaerobically at 33-37°C for 48-72 hours.
4. Confirm anaerobic growth by subculture to an aerobic blood agar plate.

QUALITY CONTROL

All lot numbers of Anaerobic Blood Agar (CDC) w/ and w/o Additives have been tested using the following quality control organisms and have been found to be acceptable. This quality control testing meets or exceeds CLSI standards.⁵ Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, patient results should not be reported.

CONTROL

Anaerobic Blood Agar (CDC)

Bacteroides fragilis ATCC® 25285
Clostridium perfringens ATCC® 13124
Fusobacterium nucleatum ATCC® 25586
Peptostreptococcus anaerobius ATCC® 27337
Prevotella melaninogenica ATCC® 25845
Escherichia coli ATCC® 25922
Staphylococcus aureus ATCC® 25923

INCUBATION

Anaerobic, up to 48 h @ 33-37°C
Anaerobic, up to 48 h @ 33-37°C
Anaerobic, up to 48 h @ 33-37°C
Anaerobic, up to 48 h @ 33-37°C
Anaerobic, up to 48 h @ 33-37°C
Ambient, 18-24 h @ 33-37°C
Ambient, 18-24 h @ 33-37°C

RESULTS

Growth
Growth, beta hemolysis
Growth
Growth
Growth
Growth
Growth

CONTROL

Anaerobic KV Blood Agar (CDC)

Bacteroides fragilis ATCC® 25285
Prevotella melaninogenica ATCC® 25845
Escherichia coli ATCC® 25922
Staphylococcus aureus ATCC® 25923

Anaerobic LKV Blood Agar (CDC)

Bacteroides fragilis ATCC® 25285
Prevotella melaninogenica ATCC® 25845
Escherichia coli ATCC® 25922
Staphylococcus aureus ATCC® 25923

Anaerobic PEA Blood Agar (CDC)

Bacteroides fragilis ATCC® 25285
**Fingoldia magna* ATCC® 29328
Escherichia coli ATCC® 25922
Staphylococcus aureus ATCC® 25923

Anaerobic Neomycin Blood Agar (CDC)

Bacteroides fragilis ATCC® 25285
Clostridium perfringens ATCC® 13124
Prevotella melaninogenica ATCC® 25845
Escherichia coli ATCC® 25922

Anaerobic PV Blood Agar (CDC)

Bacteroides fragilis ATCC® 25285
Prevotella melaninogenica ATCC® 25845
Escherichia coli ATCC® 25922
Staphylococcus aureus ATCC® 25923

Anaerobic LPV Blood Agar (CDC)

Bacteroides fragilis ATCC® 25285
Prevotella melaninogenica ATCC® 25845
Escherichia coli ATCC® 25922
Staphylococcus aureus ATCC® 25923

*Previously called *Peptostreptococcus magnus*

INCUBATION

Anaerobic, up to 48 h @ 33-37°C
Anaerobic, up to 48 h @ 33-37°C
Ambient, 18-24 h @ 33-37°C
Ambient, 18-24 h @ 33-37°C

Anaerobic, up to 48 h @ 33-37°C
Anaerobic, up to 48 h @ 33-37°C
Ambient, 18-24 h @ 33-37°C
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Ambient, 18-24 h @ 33-37°C

Anaerobic, up to 48 h @ 33-37°C
Anaerobic, up to 48 h @ 33-37°C
Ambient, 18-24 h @ 33-37°C
Ambient, 18-24 h @ 33-37°C

RESULTS

Growth
Growth
Inhibition (partial to complete)
Inhibition (partial to complete)

Growth
Growth
Inhibition (partial to complete)
Inhibition (partial to complete)

Growth
Growth
Inhibition (partial to complete)
Growth

Growth
Growth, beta hemolysis
Growth
Inhibition (partial to complete)

Growth
Growth
Inhibition (partial to complete)
Inhibition (partial to complete)

Growth
Growth
Inhibition (partial to complete)
Inhibition (partial to complete)

BIBLIOGRAPHY

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5. Clinical and Laboratory Standards Institute (CLSI). 2004. Quality Control for Commercially Prepared Microbiological Culture Media; Approved Standard, 3rd ed. M22-A3. CLSI, Wayne, PA.

Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, specimen collection, storage and transportation, materials required, quality control, and limitations.

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