

SCHAEDLER BLOOD AGAR w/ and w/o ADDITIVES

INTENDED USE

Remel Schaedler Blood Agar w/ and w/o Additives are solid media recommended for use in qualitative procedures for the isolation of anaerobic bacteria from clinical specimens.

SUMMARY AND EXPLANATION

In 1965, Schaedler, Dubos, and Costello developed Schaedler Base for recovery of bacteria encountered in the gastrointestinal tract and found it to be successful in supporting the growth of fastidious anaerobic microorganisms.¹ Mata, Carillo, and Villatoro modified the Schaedler formulation using tryptic soy broth instead of pancreatic digest of casein.² They reported excellent recovery of anaerobic and microaerophilic organisms. Inhibitors were added due to the need for selective media when processing specimens containing commensal microbial flora.

PRINCIPLE

Casein, soy, and meat peptones provide nitrogen, amino acids, and peptides necessary for bacterial growth. Yeast extract is a source of B-complex vitamins and a growth enhancer. Sodium chloride supplies essential electrolytes and maintains osmotic equilibrium. Dextrose provides an energy source. Sheep blood and hemin stimulate the growth of fastidious microorganisms. Colistin and nalidixic acid are antimicrobial agents which inhibit the growth of facultative anaerobic bacteria. Kanamycin and vancomycin are also antimicrobial agents inhibitory to gram-positive organisms and facultative anaerobic bacteria and selective for gram-negative bacilli. Laked blood is used in anaerobic media to enhance pigmentation of *Prevotella* and *Porphyromonas* spp.

REAGENTS (CLASSICAL FORMULA)*

Schaedler Blood Agar:

Casein Peptone.....	8.2 g	Dipotassium Phosphate	0.8 g
Dextrose.....	5.8 g	L-Cystine	0.4 g
Yeast Extract.....	5.0 g	Hemin	0.01 g
Tris (Hydroxymethyl) Aminomethane.....	3.0 g	Vitamin K	0.01 g
Meat Peptone.....	2.5 g	Sheep Blood (Defibrinated or Laked)	5 %
Sodium Chloride.....	1.7 g	Agar.....	13.5 g
Soy Peptone.....	1.0 g	Demineralized Water	1000.0 ml

pH 7.6 ± 0.2 @ 25°C

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

Schaedler Blood Agar w/ CNA:

Colistin	10.0 mg	Nalidixic Acid.....	10.0 mg
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Schaedler Blood Agar w/ KV:

Kanamycin	100.0 mg	Vancomycin.....	7.5 mg
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Schaedler Laked Blood Agar w/ KV:

Kanamycin	100.0 mg	Vancomycin.....	7.5 mg
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*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 and streak specimens for anaerobic culture on both selective and nonselective media as soon as possible after they are received in the laboratory.
3. Incubate plates anaerobically at 33-37°C for 48-72 hours.
4. Confirm anaerobic growth by subculture to a blood agar plate incubated in ambient air.

QUALITY CONTROL

All lot numbers of Schaedler Blood Agar 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 conforms with or exceeds CLSI standards.³ 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

Schaedler Blood Agar:

- **Bacteroides fragilis* ATCC® 25285
- **Clostridium perfringens* ATCC® 13124
- **Fusobacterium nucleatum* ATCC® 25586
- **Peptostreptococcus anaerobius* ATCC® 27337

Schaedler CNA Agar:

- Bacteroides fragilis* ATCC® 25285
- Peptostreptococcus anaerobius* ATCC® 27337
- Staphylococcus aureus* ATCC® 25923
- Escherichia coli* ATCC® 25922

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
- 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
- Inhibition (partial to complete)

Schaedler KV Agar:*Bacteroides fragilis* ATCC® 25285*Prevotella melaninogenica* ATCC® 25845*Escherichia coli* ATCC® 25922*Staphylococcus aureus* ATCC® 25923

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

Growth

Growth

Inhibition (partial to complete)

Inhibition (partial to complete)

Schaedler LKV Agar:*Bacteroides fragilis* ATCC® 25285*Prevotella melaninogenica* ATCC® 25845*Escherichia coli* ATCC® 25922*Staphylococcus aureus* ATCC® 25923

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

Growth

Growth

Inhibition (partial to complete)

Inhibition (partial to complete)

*CLSI recommended organism

BIBLIOGRAPHY

1. Schaedler, R.W., R. Dubos, and R. Costello. 1965. J. Exp. Med. 122:59-66.
2. Mata, L.J., C. Carillo, and E. Villatoro. 1969. Appl. Microbiol. 17:595-602.
3. 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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