BD™ Schaedler Kanamycin-Vancomycin Agar with 5% Sheep Blood (Schaedler-KV Agar)

INTENDED USE

BD Schaedler Kanamycin-Vancomycin Agar with 5% Sheep Blood is used in the selective isolation of *Bacteroides, Prevotella* and a variety of other gram-negative anaerobes from clinical specimens.

PRINCIPLES AND EXPLANATION OF THE PROCEDURE

Microbiological method.

The base medium of Schaedler Kanamycin-Vancomycin Agar with 5% Sheep Blood is Schaedler Agar, a highly nutritious medium, specifically developed for the growth of obligate anaerobes.[1,2] With the addition of vitamin K1 and hemin, it is the base for several selective media including Schaedler-KV Agar with 5% Sheep Blood. The combination of kanamycin and vancomycin for use in selective isolation of gram-negative anaerobes was first described by Finegold *et al*.[3]

In **BD Schaedler Kanamycin-Vancomycin Agar with 5% Sheep Blood** three peptones provide nutrients. Glucose is an energy source. Tris buffer is included to avoid an extreme decrease of the pH during glucose fermentation. The yeast extract is a rich source of the vitamins. The hemin and sheep blood supply heme needed by a variety of strict anaerobes and additional growth promoting substances. Vitamin K is reported to enhance growth of a variety of Gram negative anaerobes.[4,5] The sodium chloride provides essential electrolytes. Kanamycin inhibits Gram negative facultatively anaerobic rods and several other facultative bacteria, while vancomycin inhibits Gram positive bacteria. The addition of these antimicrobials renders the medium selective for Gram negative strict anaerobes, such as *Bacteroides* and *Prevotella*.[3, 5-7]

REAGENTS

BD Schaedler Kanamycin-Vancomycin Agar with 5% Sheep Blood

Formula* Per Liter Purified Water

Pancreatic Digest of Casein	8.2 g
Peptic Digest of Animal Tissue	2.5
Papaic Digest of Soybean Meal	1.0
Glucose	5.8
Yeast Extract	5.0
Sodium Chloride	1.7
Dipotassium Phosphate	0.8
L-Cystine	0.4
Hemin	0.01
Vitamin K1	0.01
Tris(-hydroxymethyl-aminomethane)	3.0
Agar	13.5
Kanamycin	0.1
Vancomycin	0.0075
Sheep Blood, defibrinated	5%

pH 7.6 +/- 0.2

*Adjusted and/or supplemented as required to meet performance criteria.

PRECAUTIONS

IVD . For professional use only.

Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking or other signs of deterioration.

Consult **GENERAL INSTRUCTIONS FOR USE** document for aseptic handling procedures, biohazards, and disposal of used product.

STORAGE AND SHELF LIFE

On receipt, store plates in the dark at 2 to 8° C, in their original sleeve wrapping until just prior to use. Avoid freezing and overheating. The plates may be inoculated up to the expiration date (see package label) and incubated for the recommended incubation times.

Plates from opened stacks of 10 plates can be used for one week when stored in a clean area at 2 to 8° C.

USER QUALITY CONTROL

Inoculate representative samples with the following strains (for details, see **GENERAL INSTRUCTIONS FOR USE** document). Incubate for 48 to 72 hours in an anaerobic atmosphere (e.g., **BD GasPak™** Anaerobic System).

Strains	Growth Results
Bacteroides fragilis ATCC™ 25285	Growth good to excellent
Bacteroides thetaiotaomicron ATCC 29741	Growth good to excellent
Clostridium perfringens ATCC 13124	Inhibition partial to complete
Peptostreptococcus anaerobius ATCC 27337	Inhibition complete
Escherichia coli ATCC 25922	Inhibition complete
Proteus mirabilis ATCC 12453	Inhibition partial to complete; swarming completely inhibited
Staphylococcus aureus ATCC 25923	Inhibition complete
Uninoculated	Red (blood color)

PROCEDURE

Materials Provided

BD Schaedler Kanamycin-Vancomycin Agar with 5% Sheep Blood (90 mm **Stacker™** plates). Microbiologically controlled.

Materials Not Provided

Ancillary culture media, reagents and laboratory equipment, including anaerobic incubation systems, as required.

Specimen Types

This product is a selective medium for Gram negative, strictly anaerobic rods and can be used for all appropriate specimens (see also **PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE**). Use approved techniques for collection and transport of anaerobic specimens (e.g. BD Port-A-Cul).[7-12]

Test Procedure

Streak the specimen as soon as possible after it is received in the laboratory. The streak plate is used primarily to isolate pure cultures from specimens containing mixed flora. Alternatively, if material is being cultured directly from a swab, roll the swab over a small area of the surface at the edge; then streak for dilution from this inoculated area. A nonselective medium such as **BD Schaedler Agar with Vitamin K1 and 5% Sheep Blood** or **BD CDC Anaerobe Agar with 5% Sheep Blood** must also be inoculated and incubated in an anaerobic atmosphere to provide an indication of other anaerobic organisms present in the specimen.

Incubate immediately under anaerobic conditions, at 35 to 37°C for 2 to 3 days. An efficient and easy way to obtain suitable anaerobic conditions is through the use of **BD GasPak** anaerobic systems. Regardless of the anaerobic system used, it is important to include an indicator of anaerobiosis such as the **BD GasPak** disposable anaerobic indicator. As a reference medium

for the aerobically growing bacteria, the specimen should be streaked onto **BD Columbia Agar with 5% Sheep Blood** which is incubated aerobically with 5 to 10% carbon dioxide. For further details on specimen processing, consult the references.[6,7,9-12]

Results

After incubation, most plates will show an area of confluent growth. Because the streaking procedure is, in effect, a "dilution" technique, diminishing numbers of micro-organisms are deposited on the streaked areas. Consequently, one or more of these areas should exhibit isolated colonies of the organisms contained in the specimen. Further, growth of each organism may be semi-quantitatively scored on the basis of growth in each of the streaked areas.

Further differentiation and identification steps are necessary to identify the isolated organisms. Consult appropriate texts for further differentiation and identification procedures.[5-7,9-12]

PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE

On this medium, all species of the *Bacteroides fragilis* group, *Prevotella* species such as *P. bivia, P. disiens, P. denticola, P. buccae,* the *Prevotella melaninogenica* group and several other Gram negative strict anaerobes will grow.[5-7,9-11,13] Consult the reference for the recent taxonomy.[7]

The concentration of vancomycin (7.5 mg/ml) may be inhibitory to *Porphyromonas* species and on fusobacteria.[7]

Facultative anaerobes exhibiting resistance to aminoglycosides may grow on the medium.

Although certain diagnostic tests may be performed directly on this medium, biochemical and, if indicated, immunological testing using pure cultures is necessary for complete identification.

REFERENCES

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PACKAGING/AVAILABILITY

BD Schaedler Kanamycin-Vancomycin Agar with 5% Sheep Blood

Cat. No. 254023	Ready-to-use plated media, 20 plates
Cat. No. 254077	Ready-to-use plated media, 120 plates

FURTHER INFORMATION

For further information please contact your local BD representative.

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