Biomed Global

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Columbia Agar with 5% Sheep Blood/SDA | Ready-to-use Media

a product by Biomed MDX

IVD

Intended Use:

Columbia Agar with 5% Sheep Blood and SDA (Biplate) is a dual-purpose medium used to isolate and cultivate bacteria, yeast and fungi from clinical specimens. Columbia Agar with 5% Sheep Blood allows for the differentiation of bacteria based on their hemolytic reactions, while SDA is a selective medium for the isolation of yeast and fungi.

Principle of the Procedure:

Columbia Sheep Blood Agar :

Columbia agar with 5% sheep blood is a differential and enriched medium widely employed in clinical microbiology. Its composition of Columbia agar base supplemented with 5% defibrinated sheep blood provides essential nutrients and growth factors, supporting the cultivation of a broad spectrum of microorganisms, including fastidious species. The sheep blood component also facilitates the differentiation of bacteria based on their hemolytic properties. Columbia Agar Base is a foundational medium for cultivating a wide range of bacteria, including both fastidious and non-fastidious organisms. Introduced in 1966, it provides a rich environment for microbial growth. Modifications can be introduced to enhance its utility. For example, specific additives can be incorporated to selectively inhibit the growth of certain bacterial groups, allowing for the isolation of specific target organisms from complex samples.

SDA:

Sabouraud Dextrose Agar is a peptone medium supplemented with dextrose to support the growth of fungi. The peptones are sources of nitrogenous growth factors. Dextrose provides an energy source for growth of microorganisms.

Product Summary:

Columbia Sheep Blood Agar:

Columbia Agar Base is a foundational medium for cultivating a wide range of bacteria, including both fastidious and non-fastidious organisms. Introduced in 1966, it provides a rich environment for microbial growth[1]. Modifications can be introduced to enhance its utility. For example, specific additives can be incorporated to selectively inhibit the growth of certain bacterial groups, allowing for the isolation of specific target organisms from complex samples.

SDA:

Sabouraud Dextrose Agar is a general-purpose medium devised by Sabouraud for the cultivation of dermatophytes[3]. The low pH of approximately 5.6 is favorable for the growth of fungi, especially dermatophytes, and slightly inhibitory to contaminating bacteria in clinical specimens[4-8]. Sabouraud Dextrose Agar is also recommended for the testing of cosmetics[8] and food[9-10]. General Chapters <61> and <62> of the USP describe test methods for using Sabouraud Dextrose Agar when performing the microbial enumeration tests and tests for isolating *Candida albicans* from nonsterile pharmaceutical products. The addition of antimicrobics is a modification designed to increase bacterial inhibition.

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Formulation* (PER LITER):

Columbia Sheep Blood Agar		SDA	
Pancreatic Digest of Casein	10.0g	Pancreatic Digest of Casein	5.0g
Meat Peptic Digest	5.0g	Peptic Digest of Animal Tissue	5.0g
Yeast Extract	5.0g	Dextrose	40.0g
Heart Pancreatic Digest	3.0g	Agar	15.0g
Corn Starch	1.0g		
Sodium Chloride	5.0g		
Agar	13.5g		
Sheep Blood	50.0g		

pH 7.3 +/- 0.2 pH 5.6 +/- 0.2

*Adjust and/or supplemental as required to meet performance criteria

Procedure

Materials Provided

90mm Columbia Agar with 5% Sheep Blood / SDA.

Materials Required but Not Provided

Ancillary culture media, reagents, and laboratory equipment as required.

Test Procedure

1. Collect a sample of the undiluted, well-mixed sample using a calibrated loop (0.01 or 0.001 ml) for each of the two media of this biplate.
2. First, streak a sample on Columbia Sheep Blood Agar, then the second sample on SDA Agar.
3. Incubate plates at 35°C ± 2°C for 18 to 72 hours.
4. Observe the result according to user requirements.
5. Dispose of all used reagents and contaminated materials as infectious waste. Laboratories must handle and dispose of all waste safely according to regulations.

Results

Examine for colonies exhibiting colonial morphology. Appropriate biochemical or immunological tests may be required for final identification.

Quality Control

Inoculate representative samples with the following strains. Incubate the inoculated plates at 35 ± 2°C for 18 to 72 hrs. to allow colonies to develop on the medium.

Columbia Sheep Blood Agar:

Strains	ATCC®	Growth
Escherichia coli	25922	Growth at 24 hours, beta hemolysis
Streptococcus pyogenes	19615	Growth at 24 hours, beta hemolysis
Streptococcus pneumoniae	6305	Growth at 24 hours, alpha hemolysis
Candida albicans	60193	Growth at 24 hours, no hemolysis
Enterococcus faecalis	9533	Growth at 24 hours, gamma hemolysis
Uninoculated plate	-	No Growth

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SDA:

Strains	ATCC®	Growth
Candida albicans	60193	Growth at 72 hours
Trichophyton mentagrophytes	9533	Growth at 72 hours
Uninoculated plate	-	No Growth

Transportation:

Temperature fluctuations may occur during transportation. However, these fluctuations do not affect the performance, quality, or safety of the media.

Storage and Shelf Life:

Upon receipt, store plates at 2 to 8°C, in their original sleeve wrapping until just before 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.

Warning and Precautions:

For in vitro diagnostic use. For Professional Use Only. Do Not Reuse.

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

Limitation of the Procedure

This medium is for laboratory use only and is not intended for the diagnosis of disease or other conditions. Identifications are presumptive and colonies should be identified using appropriate methods [5-8]

Reference

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2. Zimbro, M. J., Power, D. A., Miller, S. M., Wilson, G. E., & Johnson, J. A. (Eds.). (2009). Difco™ and BBL™ manual: Manual of microbiological culture media (2nd ed.). Becton, Dickinson and Company.
3. Sabouraud. 1892. Ann. Dermatol. Syphil. 3:1061.
4. Ajello, Georg, Kaplan and Kaufman. 1963. CDC laboratory manual for medical mycology. PHS Publication No. 994, U.S. Government Printing Office, Washington, D.C.
5. Murray, Baron, Jorgensen, Landry and Pfaller (ed.). 2007. Manual of clinical microbiology, 9th ed.American Society for Microbiology, Washington, D.C.
6. Kwon-Chung and Bennett. 1992. Medical mycology. Lea & Febiger, Philadelphia, Pa.
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9. Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.
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Packaging Symbol

Symbol	Definition
	Catalogue number
	In Vitro Diagnostic Medical Device
	Batch code
	Date of manufacture
	Temperature limit
	Use-by date
	Keep away from sunlight
	Do not re-use
	Fragile, handle with care
	Consult instructions for use or consult electronic instructions for use
	Do not use if packaging damaged and consult instructions for use
	Manufacturer

Further Information:

For further information please contact your Biomed MDX representative.


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