Sabouraud Brain Heart Infusion Agar Base Sabouraud Brain Heart Infusion Agar • Sabouraud Brain Heart Infusion Agar with Antimicrobics

Intended Use

Sabouraud Brain Heart Infusion Agar is used in qualitative procedures for cultivation of dermatophytes and other pathogenic and nonpathogenic fungi from clinical and nonclinical specimens. The medium is rendered selective by the addition of antimicrobial agents.

Summary and Explanation

Sabouraud Brain Heart Infusion Agar is based on the formulation of Gorman.[1] The combination of Brain Heart Infusion Agar and Sabouraud Dextrose Agar in this medium improves the recovery of fungi compared with the recovery on either medium individually. The addition of defibrinated sheep blood is recommended to increase the recovery of fastidious, dimorphic fungi.[2]

The antimicrobial agents chloramphenicol, cycloheximide and gentamicin are incorporated in various combinations to improve the recovery of pathogenic fungi from specimens heavily contaminated with bacteria and saprophytic fungi.[2]

Principles of the Procedure

Peptones and brain heart digest are sources of amino acids, nitrogen, sulfur, carbon and trace ingredients. Dextrose is an energy source for the metabolism of microorganisms. Sodium chloride provides essential electrolytes. Disodium phosphate buffers the medium to maintain the pH. Defibrinated sheep blood is added to supply nutrients that induce the growth of dimorphic species in the yeast phase.[2]

Chloramphenicol is a broad-spectrum antibiotic that inhibits a wide range of gram-negative and gram-positive bacteria. Cycloheximide is an antifungal agent that is primarily active against saprophytic fungi and does not inhibit pathogenic species. Gentamicin is an aminoglycoside antibiotic that inhibits the growth of gram-negative bacteria.

User Quality Control

Identity Specifications

Difco™ Sabouraud Brain Heart Infusion Agar Base

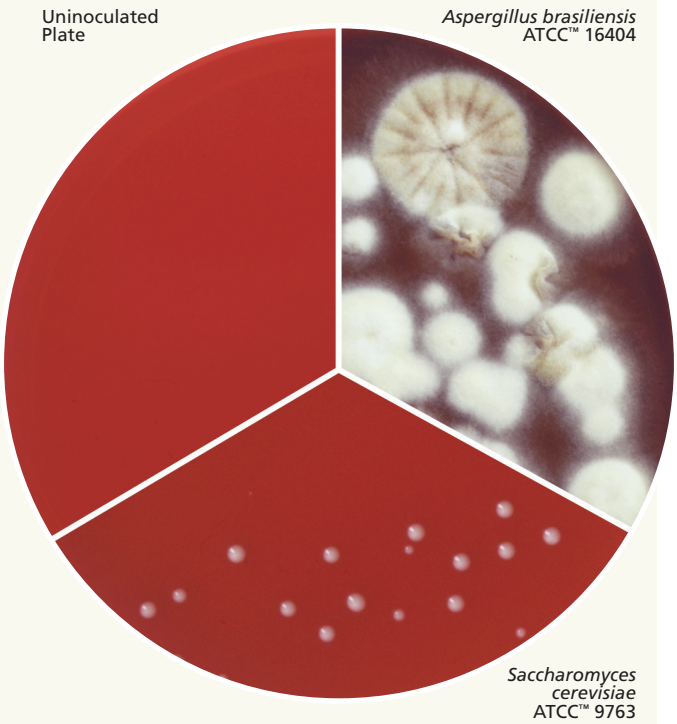
Dehydrated Appearance:	Light beige, free-flowing, homogeneous.
Solution:	5.9% solution, soluble in purified water upon boiling. Solution is medium amber, very slightly to slightly opalescent.
Prepared Appearance:	Medium amber, very slightly to slightly opalescent.
Reaction of 5.9% Solution at 25°C:	pH 7.0 ± 0.2

Cultural Response

Difco™ Sabouraud Brain Heart Infusion Agar Base

Prepare the medium per label directions without (plain) and with 10% sheep blood (SB). Inoculate and incubate at 30 ± 2°C for 18-48 hours and up to 7 days for *Trichophyton*.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY PLAIN AND WITH SB
Aspergillus brasiliensis (niger)	16404	10^2-10^3	Good
Candida albicans	10231	10^2-10^3	Good
Escherichia coli	25922	10^3-2×10^3	Marked to complete inhibition
Saccharomyces cerevisiae	9763	10^2-10^3	Good
Staphylococcus aureus	25923	10^3-2×10^3	Marked to complete inhibition
Trichophyton mentagrophytes	9533	10^2-10^3	Good



Formula

Difco™ Sabouraud Brain Heart Infusion Agar Base

Approximate Formula* Per Liter		
Brain Heart Digest	9.25	g
Proteose Peptone	5.0	g
Enzymatic Digest of Casein	5.0	g
Dextrose	21.0	g
Sodium Chloride	2.5	g
Disodium Phosphate	1.25	g
Agar	15.0	g

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

Directions for Preparation from Dehydrated Product

1. Suspend 59 g of the powder in 1 L of purified water. Mix thoroughly.
2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
3. Autoclave at 121°C for 15 minutes. Cool to 50-55°C.
4. Aseptically add 1 mL chloramphenicol solution (100 mg/mL) and, if desired, 10% sterile sheep blood.
5. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

Use standard procedures to obtain isolated colonies from specimens.

For isolation of fungi from potentially contaminated specimens, both a nonselective and a selective medium should be inoculated. Incubate the plates at 25-30°C in an inverted position (agar side up) with increased humidity. For isolation of fungi causing systemic mycoses, two sets of media should be inoculated, with one set incubated at 25-30°C and a duplicate set at 35 ± 2°C.

All cultures should be examined at least weekly for fungal growth and should be held for 4-6 weeks before being reported as negative.

Expected Results

After sufficient incubation, the plates should show isolated colonies in streaked areas and confluent growth in areas of heavy inoculation.

Examine the plates for fungal colonies exhibiting typical color and morphology. Biochemical tests and serological procedures should be performed to confirm findings.

Limitation of the Procedure

Some fungi may be inhibited by the antibiotics in selective formulations.[3,4]

References

1. Gorman. 1967. Am. J. Med. Technol. *33*: 151.
2. Merz and Roberts. 1995. *In* Murray, Baron, Pfaller, Tenover and Yolken (ed.), Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.
3. Isenberg and Garcia (ed.). 2004 (update, 2007). Clinical microbiology procedures handbook, 2nd ed. American Society for Microbiology, Washington, D.C.
4. Kwon-Chung and Bennett. 1992. Medical mycology. Lea & Febiger, Philadelphia, Pa.

Availability

Difco™ Sabouraud Brain Heart Infusion Agar Base

Cat. No. 279720 Dehydrated – 500 g

BBL™ Sabouraud Brain Heart Infusion Agar

BS12 MCM9

Cat. No. 297802 Prepared Plates (Deep Fill) – Pkg. of 10*
298192 Prepared Plates (Deep Fill) – Ctn. of 100*
297691 Prepared Slants (C Tubes) – Ctn. of 100*

BBL™ Sabouraud Brain Heart Infusion Agar with Chloramphenicol and Cycloheximide

Cat. No. 297803 Prepared Plates (Deep Fill) – Pkg. of 10*
297692 Prepared Slants – Ctn. of 100*

BBL™ Sabouraud Brain Heart Infusion Agar with Chloramphenicol and Gentamicin

MCM9

Cat. No. 297252 Prepared Slants – Pkg. of 10*

BBL™ Sabouraud Brain Heart Infusion Sheep Blood Agar with Chloramphenicol

Cat. No. 296307 **Mycoflask**™ Bottles – Pkg. of 10*

**Store at 2-8°C.*