BRAIN HEART INFUSION AGAR

INTENDED USE

Brain Heart Infusion (BHI) Agar is a general-purpose medium suitable for the cultivation of a wide variety of organism types, including bacteria, yeasts and molds. With the addition of 5% or 10% sheep blood, it is used for the isolation and cultivation of a wide variety of fungal species, including systemic fungi,[1] from clinical and nonclinical sources.

SUMMARY AND EXPLANATION

BHI Agar is one formulation in which meat infusion is used, although, unlike in the earlier days, the infusion components are solids resulting from the drying of the liquid infusion material rather than the liquid components themselves. Peptones are also included as sources of nutrients.

BHI Agar has proven to be effective in the cultivation of a wide variety of microorganisms, including many types of pathogens. BHI Agar can be used as a general medium for aerobic bacteriology and for the primary recovery of fungi from clinical specimens.[2] Brain Heart Infusion Agar with 10% Sheep Blood can be used to isolate systemic fungi that may grow poorly on the nonenriched medium. Antimicrobial agents, including chloramphenicol, gentamicin, and penicillin in combination with streptomycin, can be incorporated to improve the recovery of pathogenic fungi from specimens heavily contaminated with bacteria.[3]

PRINCIPLE

BHI Agar derives its nutrients from the brain heart infusion, peptone and dextrose components. The peptones and infusion are sources of organic nitrogen, carbon, sulfur, vitamins and trace substances. Dextrose is a carbohydrate source that microorganisms utilize by fermentative action. The medium is buffered through the use of disodium phosphate. When defibrinated sheep blood is added to the basal medium, it provides essential growth factors for the more fastidious fungal organisms.

REAGENTS (FORMULA)

Calf Brains, Infusion	7.7	g
Beef Heart, Infusion	9.8	g
Proteose Peptone	10.0	g
Dextrose	2.0	g
Dipotassium Phosphate	2.5	g
Sodium Chloride	5.0	g
Agar	15.0	g
Deionized Water	1000.0	ml

PROCEDURE

Use standard procedures to obtain isolated colonies from specimens. Since many pathogens require carbon dioxide on primary isolation, plates of plain BHI may be incubated in an atmosphere containing approximately 5-10% CO2. Incubate plates at 35 ± 2°C for 24-48 hours.

For isolation of fungi from potentially contaminated specimens, a selective medium should be inoculated along with the nonselective medium. Incubate the plates at 25-30°C in an inverted position 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. When culturing for fungi, examine plates for fungal colonies exhibiting typical color and morphology. Biochemical tests and serological procedures should be performed to confirm findings.

QUALITY CONTROL

All lot numbers have been tested and have been found to be acceptable. Customers can test products using the following quality control organisms. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, sample results should not be reported.

Organisms	Incubation	Results
Staphylococcus aureus ATCC 25923	35 ± 2°C for 18-48 hours	Growth
Escherichia coli ATCC 25922	35 ± 2°C for 18-48 hours	Growth
Aspergillus brasiliensis (*niger*) ATCC 16404	30 ± 2°C for 18-72 hours	Growth

ATCC® is a registered trademark of American Type Culture Collection.

BIBLIOGRAPHY

1. Creitz and Puckett. 1954. Am. J. Clin. Pathol. 24:1318.

2. Murray, Baron, Jorgensen, Landry and Pfaller, (ed.). 2007. Manual of clinical microbiology, 9th ed. American Society for Microbiology, Washington, D.C.

3. Reisner, Woods, Thompson, Larone, Garcia and Shimizu. 1999. In Murray, Baron, Pfaller, Tenover and Yolken (ed.), Manual of clinical microbiology, 7th ed. American Society for Microbiology, Washington, D.C.

CBSA life

155-196 Innovation Drive, Winnipeg, MB, R3T 2N2, Canada

Phone: +1 (204) 269-2255 Email: info@cbsalife.com Website: https://cbsalife.com