BD™ Brain Heart Infusion (BHI) Agar

INTENDED USE

BD 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 filamentous fungi from clinical specimens.

PRINCIPLES AND EXPLANATION OF THE PROCEDURE

Microbiological method.

Brain Heart Infusion has proven to be effective in the cultivation of a wide variety of micro-organisms, including many types of pathogens. It has served as the base medium for new culture media formulations when supplemented with blood or with selective agents. Without supplementation, Brain Heart Infusion (BHI) Agar currently is recommended as a universal medium for aerobic bacteriology and for the primary recovery of fungi and *Actinomycetales* from clinical specimens and from nonclinical materials.[1-5]

BD Brain Heart Infusion (BHI) Agar derives it nutrients from the brain heart infusion, peptone and glucose components. The peptones and infusion are sources of organic nitrogen, carbon, sulfur, vitamins and trace substances. Glucose is the carbohydrate source which micro-organisms utilize by fermentative action. The medium is buffered through the use of disodium phosphate.

REAGENTS

BD Brain Heart Infusion (BHI) Agar

Formula* Per Litre Purified Water

Brain Heart, Infusion from (Solids)	8.0 g
Peptic Digest of Animal Tissue	5.0
Pancreatic Digest of Casein	16.0
Sodium Chloride	5.0
Glucose	2.0
Disodium Hydrogen Phosphate	2.5
Agar	13.5

pH 7.4 ± 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 the plates for 24 to 48 hours for the bacteria

and *Candida*, and up to 5 days for *Trichophyton*. The bacteria and *Candida* should be incubated at 35 to 37° C, and *Trichophyton* at 25 to 30° C.

Strains	**Growth Results**
Streptococcus pneumoniae ATCC™ 6305	Growth good to excellent
Trichophyton mentagrophytes ATCC 9533	Growth good to excellent
Candida albicans ATCC 60193	Growth good to excellent
Listeria monocytogenes ATCC 19112	Growth good to excellent
Shigella flexneri ATCC 12022	Growth good to excellent
Uninoculated	Light amber

PROCEDURE

Materials Provided

BD Brain Heart Infusion (BHI) Agar (90 mm **Stacker™** plates). Microbiologically controlled.

Materials Not Provided

Ancillary culture media, reagents and laboratory equipment as required.

Specimen Types

The medium can be used for a all types of specimens if fastidious and slow-growing fungi or *Actinomycetales* are suspected to be involved in an infection. It must not be used as a universal primary isolation medium (see also **PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE**).

Test Procedure

Streak the specimen as soon as possible after it is received in the laboratory using a sterile inoculating loop to obtain isolated colonies. Consult appropriate references for information about the processing and incubation of specimens.[2,3,5]
For isolation of fungi from potentially contaminated specimens, a selective medium should be inoculated along with the nonselective medium. Incubate the plates at 25 to 30°C in an inverted position with increased humidity. For isolation of fungi causing systemic mycoses and the isolation of aerobic *Actinomycetales*, two sets of media should be inoculated, with one set incubated at 25 to 30°C and a duplicate set at 35 to 37°C. Depending on the clinical diagnosis and the agents suspected to cause the infection, other media should be included.
All cultures should be examined at least weekly for growth and should be held for several weeks before being reported as negative.

Results

After sufficient incubation, the plates should show isolated colonies in streaked areas and confluent growth in areas of heavy inoculation.
Examine plates for fungal and/or bacterial colonies exhibiting typical color and morphology. Biochemical tests and/or microscopic or serological procedures must be performed to confirm findings. Consult appropriate references for information. [2,3,5]

PERFORMANCE CHARACTERISTICS AND LIMITATIONS OF THE PROCEDURE

This medium is used for the isolation and cultivation of a wide variety of fungi, including those from systemic mycoses, aerobic *Actinomycetales* (e.g., *Rhodococcus* and *Tsukamurella*), and certain fastidious bacteria.[2,3,5] It is not recommended to be used as a general purpose isolation media for bacteria and fungi.

Due to the non-selective nature of **BD Brain Heart Infusion (BHI) Agar**, specimens heavily contaminated with normal flora should also be streaked onto appropriate selective media to avoid overgrowth by the contaminating organisms.
If fastidious organisms known to require blood for growth are suspected, **BD Brain Heart Infusion Agar with 10% Sheep Blood** should be used.

REFERENCES

1. Flores, M., and D. Welch. 1992. Section 6. Mycology: culture media, p.6.7.1-6.7.3. *In* : H.D. Isenberg (ed.), Clinical microbiology procedures handbook, vol. 1. American Society for Microbiology, Washington, D.C.
2. Sutton, D.A. 2003. Specimen collection, transport, and processing: mycology. *In:* Murray, P. R., E. J. Baron, J.H. Jorgensen, M. A. Pfaller, and R. H. Yolken (ed.). Manual of clinical microbiology, 8th ed. American Society for Microbiology, Washington, D.C.
3. Land, G. et al. 1991. Aerobic pathogenic *Actinomycetales*. *In:* A. Balows, W.J. Hausler, Jr., K.L. Herrmann, H.D. Isenberg, and H.J. Shadomy (ed.), Manual of clinical microbiology, 5th ed. American Society for Microbiology, Washington, D.C.
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5. Brown, J.M, and M.M. McNeil. 2003. *Nocardia, Rhodococcus, Gordonia, Actinomadura, Streptomyces* and other aerobic actinomycetes. *In:* Murray, P. R., E. J. Baron, J.H. Jorgensen, M. A. Pfaller, and R. H. Yolken (ed.). Manual of clinical microbiology, 8th ed. American Society for Microbiology, Washington, D.C.

PACKAGING/AVAILABILITY

BD Brain Heart Infusion Agar (BHI Agar)

Cat. No. 255003 Ready-to-use Plated Media, cpu 20

FURTHER INFORMATION

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