 Brain Heart Infusion (BHI) Agar is a general-purpose medical laboratory medium suitable for the cultivation of a wide variety of organism types, including bacteria, yeasts and molds.

**BRAIN HEART INFUSION AGAR**

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| REF: V.1/BI01.100 100 gram REF: V.1/BI01.250 250 gram |  REF: V.1/BI01.500 500 gram  |

# CLINICAL SIGNIFICANCE

# Brain Heart Infusion (BHI) Agar is highly nutritious and can support luxuriant growth of wide variety of microorganisms, in particular to culture streptococci, pneumococci and meningococci. It is a general purpose medium used for primary isolation of aerobic bacteria from clinical specimens

# METHOD PRINCIPLE

# BHI Agar is often used in food safety, water safety, and antibiotic sensitivity tests. It can be further enriched by the addition of blood or rendered selective by adding different antibiotics. Addition of 50 mg/l chloramphenicol or 40mg/l streptomycin or a mixture of 50mg/l gentamicin and 50mg/l chloramphenicol along with 5-10% sterile defibrinated blood is often recommended for inhibition of bacteria and isolation of pathogenic systemic fungi. A mixture of cycloheximide (0.5 g/l) and chloramphenicol (0.05 g/l) is also used for selective isolation of pathogenic fungi (incubation at 25-30°C for 1-2 weeks). Some fungi may be inhibited on this medium with 10% sheep blood, gentamicin and chloramphenicol.

# MEDIA COMPOSITION

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| **Item**  | **Formula in g/L**  |
| Brain infusion solids Beef heart infusion solids Proteose peptone Sodium chloride Glucose Disodium phosphate Agar  | 24.049.6219.239.623.854.8128.85 |

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## Final pH 7.4 ± 0.2 at 25°C

# PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person.

Good Laboratories practices using appropriate precautions should be followed in:

* Wearing personnel protective equipment (overall, gloves, glasses...).
* Do not pipette by mouth.
* In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries, seek medical advice immediately.
* Handle specimens and inoculated culture bottles as though capable of transmitting infectious agents. All inoculated culture bottles, specimen collection needles, and blood drawing devices should be decontaminated according to country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environmental contamination.

S61: avoid release in environment.

For further information, refer to the BHI Agar material safety data sheet.

# MEDIA STORAGE AND STABILITY

**Lab.Vie**. BHI Agar should be stored between 10-30°C in a firmly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

## PROCEDURE

## Suspend 52 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121°C for 15 minutes. Cool to 50°C, mix well and dispense into plates. For blood agar, cool to 50°C and enrich with 10% v/v sterile defibrinated blood. If desired, 20 units Penicillin and 40 µg Streptomycin per ml of medium may be added to make the medium selective for fungi. When the medium is solidified, invert the plates to avoid excess moisture.

## Deterioration

**Lab.Vie**. BHI Agar is cream to yellow homogeneous free flowing powder, dehydrated medium is clear light amber coloured to slightly opalescent gel. After addition of 5% v/v sterile defibrinated blood it turn to cherry red coloured, opaque gel forms in Petri plates. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

**SPECIMEN COLLECTION AND PRESERVATION**

# For clinical samples follow appropriate techniques for handling specimens as per established guidelines (11, 12). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (9, 10, 13). After use, contaminated materials must be sterilized by autoclaving before discarding.

# TYPE OF SPECIMEN

# Pharmaceutical samples for sterility testing, clinical samples- pus, wounds

# EQUIPMENT REQUIRED NOT PROVIDED

# Sterile cups

# Sterile tubes

# Incubator

# Autoclave

# QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact the technical support.

# PERFORMANCE CHARACTERISTICS

Performance of the medium from type cultures after incubation at a temperature of 35 ± 2°C, under 5 - 10% CO2, and observed after 24 - 72 hours. (It is recommended to grow Aspergillus brasiliensis and Saccharomyces cerevisiae aerobically at 30 ± 2°C).

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| **Microorganism** | **Growth** |
| *Aspergillus brasiliensis ATCC 16404* | Luxuriant |
| *Neisseria meningitidis ATCC 13090* | Luxuriant |
| *Saccharomyces cerevisiae ATCC 9763* | Luxuriant |
| *Staphylococcus pneumoniae ATCC 6303* | Luxuriant |
| *Streptococcus pyogenes ATCC 19615* | Luxuriant |

# REFERENCES

1. Brain Heart Infusion Broth (Powder), US Biological. Archived from the original on 29 March 2014.

2. Conant N. F., 1950, Diagnostic Procedures and Reagents, 3rd Ed., APHA Inc.

3. MacFaddin J. F., 1985, Media for Isolation-CultivationIdentification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore

4. Isenberg, H.D. Clinical Microbiology Procedures Handb0ook. 2nd Edition. 8.

5. Jorgensen,J.H., Pfaller , M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

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| **SYMBOLS IN PRODUCT LABELLING**  |
|   IVD For in-vitro diagnostic use  |   Number of <n> test in the pack  |
|  LOT Batch Code/Lot number  | A black and white triangle with a exclamation mark  Description automatically generated Caution  |
|  REF Catalogue Number  | Do not use if package is damaged   |
|   Temperature Limitation   Expiration Date   Manufactured by  |  Consult Instruction for use      |

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**Post code-41511**

**E-mail :** **admin@labvielab.com** **Website:** [**www.labvielab.com**](http://www.labvielab.com)