

Instructions for Use

REF - BM4295 Brain Heart Infusion Broth with 10% Defibrinated Horse Blood Bottled Media

1. Intended Use

For *in vitro* diagnostic use only. BM4295 Brain Heart Infusion Broth with 10% Defibrinated Horse Blood is a nutritious, isotonic, general-purpose medium suitable for the isolation of most micro-organisms including many fastidious pathogenic bacteria and fungi.

2. Composition*

<u>Ingredient</u>	<u>g/L</u>
Brain-Heart infusion solids	17.5
Peptone	10.0
Glucose	2.0
Sodium Chloride	5.0
Disodium hydrogen phosphate	2.5
Sterile defibrinated horse blood	100ml

*Adjusted/supplemented as needed to meet performance requirements

3. Summary and Explanation

Brain heart infusion broth was originally developed ^(1, 2) using brain tissue to provide a nutrient rich broth for the growth of fastidious organisms such as streptococci, pneumococci, and meningococci. The modern formulation, Brain Heart Infusion Broth, uses an infusion of porcine brain and heart tissue supplemented with glucose to achieve a nutrient rich medium which can be used for a variety of fastidious bacteria. BM4295 also contains 10% defibrinated horse blood to provide superior nutrition and allow the growth of *Haemophilus* spp. and *Streptococcus pneumoniae* as well as highly fastidious pathogenic fungi.

4. Principle

Brain-heart infusion solids and peptone provide nitrogen and other essential nutrients. Glucose provides carbon for fermentation and sodium chloride maintains osmotic balance. The phosphate buffer helps maintain pH, prolonging viability of organisms. BM4295 is further enriched with 10% defibrinated horse blood to provide superior nutrition and allow the growth of highly fastidious organisms such as *Haemophilus* spp. and *Streptococcus pneumoniae* as well as highly fastidious pathogenic fungi.

5. Physical Characteristics

	<u>Appearance and Colour</u>	<u>pH</u>
Medium	Cherry red liquid	7.4 ± 0.2

6. Materials Provided

BM4295 Brain Heart Infusion Broth with 10% Defibrinated Horse Blood is available in 50 x 10ml in Thin Wall Universals (product code: BM4295-M002-10). Each bottle is ink-jet printed with (abbreviated) product name, product code, lot number and expiry date.

7. Materials Needed but not Provided

Standard microbiological laboratory materials e.g., sterile loops or swabs, collection containers, incubators, media for isolation and quality control organisms.

8. Specimens

BM4295 Brain Heart Infusion Broth with 10% Defibrinated Horse Blood is suitable for the testing of the following specimens:

- Clinical Specimens: Samples for testing are often oral and may include swabs from the infected areas, biopsy material and blood.

Sampling and transport equipment must be used in accordance with the end user's suppliers' recommendations. Refer to appropriate standard method or local guidance on sample collection and subsequent processing.

9. Test Procedures and Interpretation of results

Clinical Specimens:

Follow local, national, or international guidelines.

Inoculate specimen directly into the medium. Incubate at 37 ± 1°C aerobically for 18-24 hours (*S. pneumoniae* requires an atmosphere with higher CO₂ levels).

After incubation examine broth for turbidity, and subculture 1µl of the productivity broth onto E&O PP0120 Columbia Blood Agar and incubate at 37 ± 1°C aerobically for 18-24 hours.

After incubation, examine agar for colonies. Perform further biochemical, serological, molecular, or mass spectroscopy testing to confirm identity of presumptive positive isolates. Refer to relevant local guidelines.

10. Quality Control

Organism	Incubation	Result (Specificity)
<i>S. pneumoniae</i> (NCTC 12977) <i>H. influenzae</i> (NCTC 11931)	37 ± 1°C in 5% CO ₂ for 24-48 hours 37 ± 1°C in 5% CO ₂ for 24-48 hours Subculture 1µl of <i>S. pneumoniae</i> onto PP0120 Columbia Blood Agar Subculture 1µl of <i>H. influenzae</i> onto PP0100 Columbia Chocolate Agar Incubate plates in 37 ± 1°C in 5% CO ₂ for 24-48 hours.	Broth: Turbid. Subplate: Green colonies with α-haemolysis Broth: Turbid. Subplate: Grey colonies

It is the responsibility of the user to perform Quality Control testing taking into consideration the intended use of the medium and in agreement with any local relevant guidelines (e.g., frequency, strains used, atmosphere, incubation temperature).

11. Performance

To fully verify the performance of BM4295 Brain Heart Infusion Broth with 10% Defibrinated Horse Blood, samples were tested to assess turbidity when incubated at 37 ± 1°C in 5% CO₂ for 24-48 hours, before being subcultured onto the relevant plates as specified by the Quality Control table above and incubated at 37 ± 1°C in 5% CO₂ for 24-48 hours. All samples showed good recovery and the correct morphology of the required test organisms: *Streptococcus pneumoniae* (NCTC 12977) and *Haemophilus influenzae* (NCTC 11931). Therefore, it can be concluded that BM4295 Brain Heart Infusion Broth with 10% Defibrinated Horse Blood, meets performance criteria when used according to the instructions outlined above.

12. Limitations of the Medium

- Acid producing organisms may eventually overwhelm the buffering system resulting in non-viable cultures.
- Due to natural variation, some strains may grow poorly on this medium.

13. Precautions and Warnings

This product is considered non-hazardous under CLP regulations. Wear such PPE as recommended by laboratory COSHH assessment. During and after use, always handle all materials in a manner conforming to Good Laboratory Practices and consider that material under test should be regarded as a potential biohazard if mishandled.

Refer to E&O BM4295 Bottled Media Material Safety Data Sheet.

14. Storage conditions and Shelf life

Store BM4295 in the original bottle with the lid tightly closed at between 2 and 8°C. Kept under these conditions it may be used up to date of expiry shown on product label.

Dispose of in accordance with local and national authority requirements. Do not use medium if it is contaminated, discoloured or out of date. Additionally, do not use medium if it has been stored inappropriately or the packaging has been damaged.

15. References

1. Rosenow, E. (1919) Studies on Elective Localization Focal Infection with Special Reference to Oral Sepsis'. J. Dent. Research, 1, pp.205-249.
2. Hayden, R. (1923) Elective localization in the eye of bacteria from infected teeth. Arch. Int. Med., 32, pp. 828-849.

Version History*

001 20/02/24 - New Document Created

*Note: minor typographical, grammatical, and formatting changes are not included in the revision history.



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IFU/BM4295 REV. 001

TABLE OF APPLICABLE SYMBOLS

REF Catalogue number	LOT Batch code	IVD In vitro Diagnostic Medical Device	Manufacturer	Use by
Temperature limitation	Contents sufficient for <n> tests	Consult Instructions for Use	Keep away from direct light	Store in a dry place