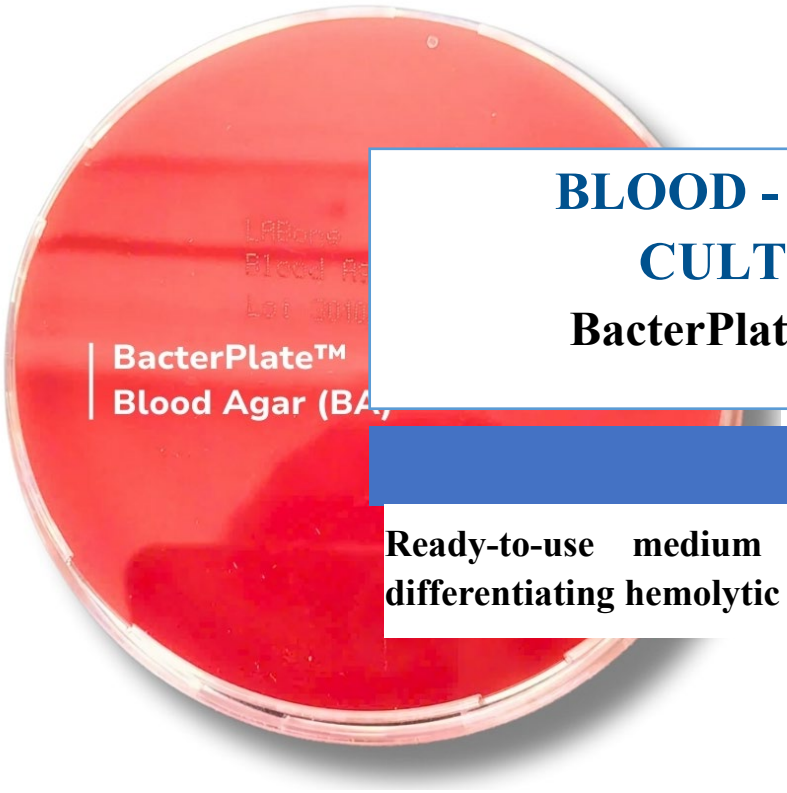
BacterLab Division

Issue date: 02/01/2025
Version: 01.2025



BLOOD - SUPPLEMENTED CULTURE MEDIUM

BacterPlate™ Blood Agar (BA)

Ready-to-use medium on 90mm plates for culturing and differentiating hemolytic phenotypes α, β, and ɤ.

Code: 05004

1. INTENDED USE

BacterPlate™ Blood Agar is a versatile culture medium widely utilized for the cultivation and isolation of a broad range of microorganisms. It plays a critical role in in vitro diagnostics and microbiological quality control testing. Furthermore, it enables the differentiation of bacterial species based on hemolytic reactions (alpha, beta, and gamma hemolysis).

The typical composition of base medium (Columbia Agar) corresponds to that defined in European (EP), United States (UP) and Japanese (JP) Pharmacopeias.

The packaging with semi-permeable Cellophane film helps balance the humidity of the environment during storage.

2. PRINCIPLES

- Peptones included in the composition of the medium favor the excellent growth of colonies.
- Yeast extract is a source of vitamin B complex.
- Starch is a detoxifying agent and also an energy source.
- Defibrinated sheep blood provides X factor (heme), essential for the growth of many fastidious bacteria, and allows the detection of hemolytic reactions.

3. TYPICAL COMPOSITION

For 1 liter of medium

Polypeptone	23,0 g
Starch	1,0 g
Sodium chloride	5,0 g
Defibrinated sheep blood	50 – 70 mL
Agar	13,5 g

pH of the ready-to-use medium at 25^{0}C: 7,3 ± 0,2

4. PREPARATION

The environmental plates are ready-to-use, no preparation required.

5. INSTRUCTIONS FOR USE

- Allow the agar plates to reach room temperature. Dry the plates in an incubator by slightly opening the lid.
- Inoculate in order to obtain isolated colonies.
- Incubate at 37 °C for 24 to 48 hours in optimal conditions for the culture of the inoculated germs.

6. RESULTS

- Observe the bacterial growth.

Beta hemolysis

Streptococci belonging to Lancefield group A appear as small, grey colonies, translucid or opaque, surrounded by a zone of beta hemolysis. Other bacteria may present the same type of hemolysis: *Listeria, hemolytic Staphylococci, Escherichia coli* and *Pseudomonas*.

Staphylococci appear as opaque, yellow-gold or white colonies, with or without type β hemolysis zones.

Listeria present small zones of beta hemolysis.

Bacillus cereus form a clear zone surrounding the colonies.

Alpha hemolysis

Pneumococci appear as flat, shiny, grey and occasionally mucoid colonies surrounded by a zone of narrow, greenish hemolysis referred to as alpha hemolysis.

CAMP Factor

Group B *Streptococci* produce an extracellular, thermoresistant substance (CAMP Factor) which provokes a triangle of total hemolysis in a zone of incomplete staphylococcal hemolysis, at the junction of the two cultures.

7. QUALITY CONTROL

BacterLab ensures the quality of each product batch by testing with ATCC reference strains.

Reference strains	Incubation Conditions	Standard (P_R)
S. pneumonia ATCC 49619	Incubate for 24 – 48 hours, at 35 – 37°C, with inoculum ≤ 10^3 – 10^4 CFU/ mL	Good growth, α hemolysis.
S. pyogenes ATCC 19615		Good growth, β hemolysis.
E. faecalis ATCC 29212		Good growth, ɤ hemolysis.

8. STORAGE AND TRANSPORT CONDITIONS

- Storage: 2 – 8°C.
- Transportation: Ambient temperature.

9. PACKAGING

- Packaging: 10 plates/ box or as per customer request.

10. SHELF LIFE

- Expiration Date: 4 months from the manufacturing date.

11. BIBLIOGRAPHY

- Neter, E.. 1947. The effect of yeast concentrate on the growth and survival of Haemophilus influenza in infusion broth. Journal of Bacteriology, 54 : 70-71.
- Thayer, J.D. and Martin, J.E.. 1966. Improved medium selective for cultivation of Neisseria gonorrhoeae and Neisseria meningitidis. Public Health Report, 81 : 559-562.
- llner, P.D., Stoessel, C.J., Drakeford, E. and Vasi, F.. 1966. A new culture medium for medical bacteriology. American Journal of Clinical Pathology, 45 : 502-504.
- NF V08-405. December 1986. Microbiology of food products. Preserves. Detection of {Clostridium} thermophilus..
- NF U47-108. December 2012. Animal health analysis methods - Isolation and identification of Taylorella equigenitalis from Equidae genital sampling.
- NF EN ISO 10272-1. July 2017. Microbiology of the food chain - Horizontal method for detection and enumeration of Campylobacter spp. - Part 1 : Detection method. Modified by NF EN ISO 10272-1/A1 : 2023.

- NF EN ISO 10272-2. July 2017. Microbiology of the food chain — Horizontal method for detection and enumeration of Campylobacter spp. — Part 2: Colony-count technique. Modified by NF EN ISO 10272-2/A1 : 2023.
- NF EN ISO 15213-1. February 2023. Microbiology of the food chain - Horizontal method for the detection and enumeration of Clostridium spp. - Part 1 : enumeration of sulfite-reducing Clostridium spp. by colony-count technique
- European Pharmacopoeia. Chapiter 2.6.13. Microbial examination of non-sterile products: test for specified micro organisms. Harmonized method. The United States Pharmacopeia. Chapter Microbiological examination of non-sterile products: Microbial enumeration tests and Chapter Microbiological examination of non-sterile products: Test for specified products.
- The Japanese Pharmacopoeia. Chapter 4.05 Microbial Limit Test I. Microbiological examination of non-sterile products: Total viable aerobic count and II. Microbiological examination of non-sterile products: Test for specified products.
- Solabia Biokar Diagnostics. (2023). Columbia Agar (Base) Technical Data Sheet. Rue des Quarante Mines – ZAC de Ther – Allonne – B.P. 10245 – 60002 Beauvais Cedex, France. Retrieved from http://www.solabia.com/biokar-diagnostics/