

Brain-Heart Infusion/Broth (BHI)

355-3664
356-4014

DEFINITION

Highly nutrient culture used with rabbit plasma for the detection of free coagulase of coagulase-positive *staphylococci* in products destined for human or animal consumption at 37°C, and for water testing at 36°C.

STANDARDS

FOOD MICROBIOLOGY

• **NF EN ISO 6888-1/A1 (January 2004):** Food microbiology - Horizontal method for the enumeration of coagulase-positive *staphylococci* (*Staphylococcus aureus* and other species) - Part 1: Technique using Baird-Parker agar medium.

• **NF EN ISO 6888-3 (June 2003):** Food microbiology - Horizontal method for the enumeration of coagulase-positive *staphylococci* (*Staphylococcus aureus* and other species) - Part 3: Detection and MPN method for small numbers.

• **FIL 60B (1990):** Dried milk products - Enumeration of *Staphylococcus aureus* - Most Probable Number technique.

• **FIL 138 (1986):** Dried milk - Enumeration of *Staphylococcus aureus* - Technique of colony count at 37°C.

• **FIL 145 (1990):** Milk and dairy products - Enumeration of *Staphylococcus aureus* - Colony-count technique at 37°C.

• Methods of bacteriological analysis of shellfish (Circular DGAL/SVHA/C 88/N°8003 of 28 April 1988).

WATER

• **NF T90-421 (August 2006):** Bacteriological test for water in swimming pools.

• **XP T90-412 (June 2006):** Water quality - Detection and enumeration of pathogenic *Staphylococci* - Method by membrane filtration.

• **NF T90-461/A2 (May 2007):** Water quality - Microbiology - Culture media quality control.

PRINCIPLE

A medium suitable for the growth of microorganisms whatever their mode of respiration (aerobic or anaerobic).

PRESENTATION

• **Ready-to-use**
10 ml x 25 tubes **code 355-3664**

• **Dehydrated**
500 g **code 356-4014**

STORAGE

- Ready-to-use: + 2 to 8°C
- Dehydrated: + 15° to 25°C, in carefully-sealed bottles in a cool, dry place.
- Expiration date and batch number are shown on the package.

THEORETICAL FORMULA

Complete medium

Peptone	10 g
Veal Brain extract	12.5 g
Beef heart extract	5 g
Sodium chloride	5 g
Disodium phosphate	2.5 g
Glucose	2 g
Distilled water	1,000 ml
Final pH (25°C) = 7.4 ± 0.2	

OTHER PRODUCTS REQUIRED (NOT SUPPLIED)

- Diluent(s)
- Distilled water
- **Rabbit plasma**
package for 20 reactions **code 355-6352**

EQUIPMENT REQUIRED (NOT SUPPLIED) (non-exhaustive)

- Scales
- Sterile weighing bags
- Grinder
- Hotplate
- Mixer-homogenizer
- Vortex-type shaker
- Test tubes (16 x 160 mm) with autoclave proof stopper
- Sterile Pasteur pipettes (**code 355-0751**) or inoculating loop
- Thermostatically-controlled incubator or incubation room, precise to ± 1°C
- Autoclave
- All usual laboratory equipment

PREPARATION OF DEHYDRATED MEDIUM

Always shake well before use

Dissolve 37 g of powder in 1 liter of distilled water. Mix thoroughly until a homogenous suspension is obtained (heat if necessary). Dispense 5 or 10 ml per tube, then sterilize in autoclave at $121^{\circ}\text{C} \pm 1^{\circ}\text{C}$ for 15 minutes.

Reconstitution ratio: 37 g/l

500 g of powder makes 13.5 liters of medium.

PROTOCOL

• Preparation of samples

According to standards for the product concerned.

• Detection of suspected coagulase-positive *staphylococci*

According to standards.

• Inoculation and incubation

- Using a sterile wire, collect part of each colony obtained on Baird Parker agar (**code 356-3991, 356-4814**), and inoculate in a tube of Brain-Heart broth.

- Incubate at $37^{\circ}\text{C} (\pm 1^{\circ}\text{C})$ for 24 hours ($\pm 2\text{h}$).

- After incubation, carry out detection of coagulase with Rabbit Plasma (**code 355-6352**) (see corresponding Technical Sheet).

PRECAUTIONS

Comply with Good Laboratory Practice.

PERFORMANCES / QUALITY CONTROL OF THE TEST

The growth performances of the media are verified with the following strains:

STRAINS	Turbidity over 24 h at 37°C
<i>Staphylococcus aureus</i> ATCC 25923	+++
<i>Staphylococcus aureus</i> ATCC 9144	+++

QUALITY CONTROL

Every product manufactured and marketed by Bio-Rad is subject to a quality-assurance procedure at all stages, from the reception of raw materials to the marketing of the end-product.

Each batch of finished product undergoes quality control and is marketed only if it satisfies the acceptability criteria.

Documentation relative to the production and control of each batch is kept on file.

KEY WORDS

Brain-heart / Coagulase / Broth / Medium.

BIBLIOGRAPHY

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• **ROSEBURG and al. (1944)**: J. Infect. Dis. **74**: 131-149.

• **HITCHENS (1921)**: J. Infect. Dis. **29**: 390-407.