

# Brilliant Green Red Phenol/Agar

(Kristensen or Edel and Kampelmacher/Agar)

356-4464

## DEFINITION

Medium used for the isolation of *Salmonella* in food products and in water.

## STANDARDS

### FOOD MICROBIOLOGY

• **NF EN ISO 6579 (July 2002):** Food microbiology - Horizontal method for the detection of *Salmonella* spp.

• **FIL 93B (1995):** Milk and milk products - Detection of *Salmonella*

### WATER

• **ISO 19250 (July 2010):** Water quality - Detection and enumeration of *Salmonella*

• **NF T90-461/A2 (May 2007):** Water quality - Microbiology - Quality control for culture media

## PRINCIPLE

Due to the presence of Brilliant green this medium inhibits Gram-positive flora.

The fermentation of lactose and/or saccharose is manifested by a drop in the pH, causing the appearance of greenish-yellow colonies (in the presence of the pH indicator Phenol Red). Lactose- and saccharose- negative *Salmonella* form colorless to pink colonies.

## PRESENTATION

### Dehydrated

500 g

code 356-4464

## STORAGE

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

## THEORETICAL FORMULA

Meat extract	5 g
Peptone	10 g
Yeast extract	3 g
Na <sub>2</sub> HPO <sub>4</sub>	1 g
NaH <sub>2</sub> PO <sub>4</sub>	600 mg
Lactose	10 g
Saccharose	10 g
Phenol red	90 mg
Brilliant green	5 mg
Agar	12 g
Distilled water	1,000 ml

Final pH (25°C) = 6.9 ± 0.2

## OTHER PRODUCTS REQUIRED (NOT SUPPLIED)

- Distilled water

## EQUIPMENT REQUIRED (NOT SUPPLIED) (non-exhaustive)

- Scales
- Sterile weighing bags
- Grinder
- Hotplate
- Mixer-homogenizer
- 100 ml Pyrex bottles with autoclave-proof stoppers
- Sterile Petri dishes (Ø = 90 mm)
- Sterile Pasteur pipettes (code 355-0751) or inoculating loop
- Water-bath precise to ±1°C
- Thermostatically-controlled incubator or incubating room, precise to ±1°C
- All usual laboratory equipment

## PREPARATION OF DEHYDRATED MEDIUM

### Always shake before use.

Dissolve 52 g of powder in 1 liter of distilled water. Allow to soak for 10 minutes and then bring to the boil with frequent swirling to dissolve the solids and cool to 47°C in a water bath. Pour plates and dry the surface before inoculation.

**Do not remelt or autoclave:** overheating causes precipitation of the medium. Store plates away from light.

**Reconstitution ratio: 52 g/l**

**500 g of powder makes 9.6 liters of medium.**

## PROTOCOL

### Inoculation and incubation

After selective enrichment for the detection of *Salmonella*, inoculate a plate of Brilliant Green Red Phenol Agar medium by means of an inoculating loop or a Pasteur pipette.

Incubate at 37°C ± 1°C for 18-24 hours.

This medium is used as a second selective agar complementary to XLD in the Standard.

## READING AND INTERPRETATION

- Pink colonies (surrounded by a red zone): *Salmonella*.
- Greenish colonies (surrounded by a shiny greenish-yellow zone): bacteria fermenting lactose or saccharose.

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V6 – 05/08/11

## PRECAUTION

Comply with Good Laboratory Practice.

## QUALITY CONTROL OF MANUFACTURER

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.

## PERFORMANCES/QUALITY CONTROL OF THE TEST

The growth performances of the Brilliant Green Red Phenol Agar medium are verified with the following strains:

STRAINS	Results after 24 -48 hr culture at 30°C
<i>Salmonella Typhimurium</i> ATCC 14028	Good growth Red colonies
<i>Salmonella enteritidis</i> ATCC 13076	Good growth Red colonies
<i>Escherichia coli</i> ATCC 25922	Partial inhibition Yellow colonies
<i>Enterococcus faecalis</i> <i>zymogenes</i> ATCC 29212	Inhibited

## KEY WORDS

Brilliant Green Red Phenol Agar/Edel and Kampelmacher/*Salmonella*/Food products/Isolation/Lactose/Saccharose/Medium

## BIBLIOGRAPHY

- **KAUFFMANN F. (1935):** Xit. F. Hyge, 117, 26
- **KRISTENSEN M., LESTER V. and JURGENS A. (1925):** On the use of tripsinized casein, bromothymol blue, bromocresol purple, phenol red and brilliant green for bacteriological nutrient media. B2. J. Exp. Pathol., 6: 291