# Brilliant Green Bile Agar

Cat. 1010

For the determination of the degree of contamination by coliforms in drinking water and wastewater.

## Practical information

| Aplications | Categories |
|---|---|
| Selective enumeration | Coliforms |
| Differentiation | Coliforms |

Industry: Water / Food

## Principles and uses

Brilliant Green Bile Agar can be used to assess the degree of contamination of water samples, diverse foods and other products. It uses basic fuchsin to differentiate between lactose-fermenting and lactose non-fermenting bacteria. Acid production by lactose fermenting organisms, such as Escherichia coli, produce characteristic red colonies with a pink surrounding area. Lactose non-fermenters form colorless and transparent colonies.

The gelatin peptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Lactose is the fermentable carbohydrate providing carbon and energy. Ox bile and brilliant green inhibit gram-positive bacteria and most gram-negative bacteria except coliforms. Erioglaucine and basic fuchsin together indicate pH of the medium. Monopotassium phosphate acts as a buffer system. Bacteriological agar is the solidifying agent.

For the enumeration of coliform bacteria employ sample dilutions, which yield between 10-50 colonies per plate using the pour plate method. Incubate at 35±2 °C for 18-24 hours. The coliform colonies have an intensely red center zone surrounded by a pink halo which is sharply outlined against the uniformly blue background of the medium. Salmonella spp, which do not ferment lactose, produce colorless to pale pink colonies.

The medium is sensitive to light, which reduces its effectiveness and changes its color from strong blue to purple or pink. The medium should be prepared immediately before use and, if necessary, stored in the dark for the least time possible.

## Formula in g/L

| | | | |
|---|---|---|---|
| Bacteriological agar | 10,15 | Basic fuchsine | 0,0776 |
| Brilliant green | 0,000029 | Gelatin peptone | 8,25 |
| Lactose | 1,9 | Monopotassium phosphate | 0,0153 |
| Ox Bile | 0,00295 | Sodium sulfite | 0,205 |
| Erioglaucine | 0,0649 | | |

## Preparation

Suspend 20,6 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 ºC for 15 minutes. Cool to 45-50 ºC, mix well and dispense into plates.

## Instructions for use

Inoculte and incubate at a temperature of 35±2 ºC for 18-24 hours.

## Quality control

| Solubility | Appareance | Color of the dehydrated medium | Color of the prepared medium | Final pH (25ºC) |
|---|---|---|---|---|
| w/o rests | Fine powder | Purple | Blue | 6,9±0,2 |

## Microbiological test

Incubation conditions: (35±2 ºC / 18-24 h).

| Microrganisms | Specification | Characteristic reaction |
|---|---|---|
| Enterobacter aerogenes ATCC 13048 | Good growth | Pink colonies |
| Salmonella enteritidis ATCC 13076 | Good growth | Colorless/pale pink |
| Escherichia coli ATCC 25922 | Good growth | Deep red colonies with bile precipitate |
| Staphylococcus aureus ATCC 25923 | Total inhibition | |

## Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

## Bibliography

Methods for the Examination of Water and Wastewater, 1 0th Ed APHA, Inc. New York, 1958. Recommended Methods for the Microbiological Examination of Foods, APHA, Inc. New York, 1958.