MAST® Culture Media and Supplements

Technical Information Sheet

Product Code DM 259

Brilliant Green Bile (2%) Broth

A selective medium for the detection or confirmation of coliform bacteria in dairy products, food and water.

1. Description

Brilliant Green Bile (2%) Broth was originally described by Dunham and Schonlein[1] for the detection of coliform organisms in water. It has been formulated to select for coliform bacteria which are recognised by rapid production of gas through lactose fermentation[2]. The principle is very similar to that of MacConkey Broth but the Bile and Brilliant Green inhibit anaerobic lactose fermenters, such as *Clostridium perfringens*, which produce false positive results in MacConkey's Medium.

The concentrations of the components of MAST Brilliant Green Bile Broth have been optimised so that the anaerobic lactose fermenters are inhibited without the coliforms being affected. It is therefore very important that the broth is not overdiluted when the sample is added. For large sample volumes double strength broth must be used, in an equal volume to the sample, to maintain the optimised concentrations.

MAST Brilliant Green Bile (2%) Broth can also be used as recommended in Standard Methods for the Examination of Water and Waste Water[3], Standard Methods for the Examination of Dairy Products[4] and Compendium of Methods for the Microbiological Examination of Food[5].

2. Technical Formula*

Formula	grams per litre
Peptone	10.0
Lactose	10.0
Ox Bile	20.0
Brilliant green	0.0133
pH approx. 7.4	

*Formulation may be modified to meet performance criteria

3. Directions

1(a). **For Single Strength Broth**

Suspend 40g of powder in 1 litre of distilled or deionised water.

1(b). **For Double Strength Broth**

Suspend 80g of powder in 1 litre of distilled or deionised water.

2. Mix well and warm to dissolve.

3. Distribute into test tubes or suitable bottles containing inverted Durham's tubes.

4. Sterilise the single strength medium by autoclaving at 115°C for 15 minutes. The double strength must not be autoclaved. Sterilise by steaming.

5. References

1. Dunham HG, Schoenlein HW. *Stain Techn*. 1926; **1:** 129-134.

2. Mackenzie EF, Windle Taylor E, Gilbert WE. *J.Gen Microbiol* 1948; **2:** 197-204.

3. American Public Health Association Standard Methods for the Examination of Water and Wastewater. 1980; 15th Edn. APHA Inc. Washington D.C.

4. American Public Health Association Standard Methods for the Examination of Dairy Products 1978; 14th Edn. APHA Inc. Washington D.C.

5. American Public Health Association Compendium of Methods for the Micro-biological Examination of foods. APHA Inc. Washington D.C. 1976;

4. In Use

The sample volumes used to test water, food and dairy products with Brilliant Green Bile (2%) Broth can vary between less than 1ml to 10ml. When a sample volume of 1ml or less is being tested, single strength broth is used in the proportion 1ml sample to 10ml broth.

When larger sample volumes require testing, double strength broth is used in an equal volume to the sample. Food samples are macerated and decimally diluted before adding to Brilliant Green Bile (2%) Broth.

Incubation is carried out at 44°C for 18 hours to detect E.coli and thermotrophs, at 32°C for 24-48 hours for mesophilic coliforms or at 4°C for 10 days for psychrotrophic coliforms.

Presumptive evidence of coliform organisms is indicated by copious amounts of gas formation and the turbidity of the medium. If *E.coli* is suspected after incubation at 44°C, it can be confirmed by the indole production test using MAST Peptone Water (DM185).

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