Brilliant Green Bile Agar

Intended Use

Brilliant Green Bile Agar is used for isolating, differentiating and enumerating coliform bacteria.

Summary and Explanation

Noble and Tonney¹ described Brilliant Green Bile Agar for determining the relative density of coliform bacteria in water and sewage. The medium is particularly useful in selectively isolating *Salmonella* spp. from other coliform bacteria.

User Quality Control

Identity Specifications

Difco[™] Brilliant Green Bile Agar

Dehydrated Appearance:	Light purple, free-flowing, homogeneous (may contain small dark particles).
Solution:	2.06% solution, soluble in purified water upon boiling. Solution is bluish-purple, slightly opales-cent.
Prepared Appearance:	Blue with or without a tint of purple, slightly opalescent.
Reaction of 2.06% Solution at 25°C:	pH 6.9 ± 0.2

Cultural Response Difco™ Brilliant Green Bile Agar

Prepare the medium per label directions. Inoculate using the pour plate technique and incubate at $35 \pm 2^{\circ}$ C for 18-24 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY	COLONY COLOR
Enterobacter aerogenes	13048	10 ² -10 ³	Good	Pink
Escherichia coli	25922	10 ² -10 ³	Good	Deep red with bile precipitate
<i>Salmonella enterica</i> subsp. <i>enterica</i> serotype Typhimurium	14028	10 ² -10 ³	Good	Colorless to light pink
Staphylococcus aureus	25923	10 ³ -2×10 ³	Marked to complete inhibit	– ion

Principles of the Procedure

Brilliant Green Bile Agar contains peptone as a source of carbon, nitrogen, vitamins and minerals. Lactose is a fermentable carbohydrate. Oxgall (bile) and brilliant green inhibit gram-positive bacteria and most gram-negative bacteria except coliforms. Basic fuchsin and erioglaucine are pH indicators. Monopotassium phosphate is a buffering agent. Agar is the solidifying agent.





Differentiation of the coliforms is based on fermentation of lactose. Bacteria that ferment lactose produce acid and, in the presence of basic fuchsin, form deep red colonies with a pink halo. Bacteria that do not ferment lactose form colorless to faint pink colonies. Coliform bacteria typically ferment lactose, producing deep red colonies, while Salmonella spp., which do not ferment lactose, produce colorless to faint pink colonies.

Formula

Difco[™] Brilliant Green Bile Agar

Approximate Formula* Per Liter

Peptone	8.25 g
Lactose	1.9 g
Oxgall	2.95mg
Sodium Sulfite	205.0 mg
Ferric Chloride	29.5 mg
Monopotassium Phosphate	15.3 mg
Agar	10.15 g
Erioglaucine	64.9 mg
Basic Fuchsin	77.6 mg
Brilliant Green	29.5 µg
*Adjusted and/or supplemented as required to meet performance criteria.	13

Directions for Preparation from Dehydrated Product

- 1. Suspend 20.6 g of the powder in 1 L of purified water. Mix thoroughly.
- 2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.

- 3. Autoclave at 121°C for 15 minutes.
- 4. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

See appropriate references for specific procedures.^{2,3}

Expected Results

Refer to appropriate references and procedures for results.^{2,3}

Limitation of the Procedure

The medium is sensitive to light, particularly direct sunlight, which produces a decrease in the productivity of the medium and a change in color from deep blue to purple or red. The medium should be prepared just prior to use and, when necessary to store the medium, it should be kept in the dark.

References

- Nobel and Tonney. 1935. J. Am. Water Works Assoc. 27:108.
 Eaton, Rice and Baird (ed.). 2005. Standard methods for the examination of water and wastewater,
- Lated, receard bard (cd.) 2003 starting includes in the Cammaton of water and wastewater, 21st ed., online. American Public Health Association, Washington, D.C.
 Downes and Ito (ed.). 2001. Compendium of methods for the microbiological examination of foods, 4th ed. American Public Health Association, Washington, D.C.

Availability

Difco[™] Brilliant Green Bile Agar

COMPE

Cat. No. 214100 Dehydrated - 500 g

