Brilliant Green Agar

Intended Use

Brilliant Green Agar is a highly selective medium for the isolation of *Salmonella* other than *S.* Typhi from feces and other materials.

Summary and Explanation

Brilliant Green Agar was first described by Kristensen et al. in 1925.[1] Their formulation was modified slightly by Kauffmann in 1935.[2] The medium is included in procedures for the examination of water and wastewater.[3]

Principles of the Procedure

Brilliant green dye inhibits gram-positive bacteria and a majority of gram-negative bacilli. Phenol red serves as a pH indicator and yields a yellow color as a result of acid production in the fermentation of the lactose and/or sucrose in the medium.

Formula

Difco™ Brilliant Green Agar

Approximate Formula* Per Liter		
Proteose Peptone No. 3	10.0	g
Yeast Extract	3.0	g
Lactose	10.0	g
Saccharose	10.0	g
Sodium Chloride	5.0	g
Agar	20.0	g
Brilliant Green	12.5	mg
Phenol Red	0.08	g

**Adjusted and/or supplemented as required to meet performance criteria.*

Directions for Preparation from Dehydrated Product

1. Suspend 58 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

Use standard procedures to obtain isolated colonies from specimens. A less selective medium and a nonselective medium should also be streaked to increase the chance of recovery when the population of gram-negative organisms is low and to provide an indication of other organisms present in the specimen. Incubate plates, protected from light, at 35 ± 2°C for 18-24 hours. If negative after 24 hours, reincubate an additional 24 hours.

References

1. Kristensen, Lester and Jurgens. 1925. Br. J. Exp. Pathol. 6:291.
2. Kauffmann. 1935. Z. Hyg. Infektionskr. *117*:26.
3. Eaton, Rice and Baird (ed.). 2005. Standard methods for the examination of water and wastewater, 21st ed., online. American Public Health Association, Washington, D.C.

Expected Results

Typical colonial morphology on Brilliant Green Agar is as follows:

Salmonella (other than *S.* Typhi and *S.* Paratyphi)	White to red, opaque colonies surrounded by red zones in the medium
S. Typhi and *S.* Paratyphi	No growth to trace growth
Shigella	No growth to trace growth
Escherichia coli and *Enterobacter/Klebsiella*	Yellow to greenish-yellow colonies surrounded by intense yellow-green zones in medium
Proteus	No growth to trace growth
Pseudomonas	Pink to red colonies
Gram-positive bacteria	No growth to trace growth

User Quality Control

Identity Specifications

Difco™ Brilliant Green Agar

Dehydrated Appearance:	Pink, free-flowing, homogeneous.
Solution:	5.8% solution, soluble in purified water upon boiling. Solution is brownish-green, clear to very slightly opalescent.
Prepared Appearance:	Orange-brown, very slightly to slightly opalescent.
Reaction of 5.8% Solution at 25°C:	pH 6.9 ± 0.2

Cultural Response

Difco™ Brilliant Green Agar

Prepare the medium per label directions. Inoculate and incubate at 35 ± 2°C for 18-24 hours.

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY	COLONY COLOR
Escherichia coli	25922	~10^4	Poor	Yellow-green
Salmonella enterica subsp. *enterica* serotype Enteritidis	13076	30-300	Good	Red
Salmonella enterica subsp. *enterica* serotype Typhi	19430	30-300	None to poor	Red
Salmonella enterica subsp. *enterica* serotype Typhimurium	14028	30-300	Good	Red
Staphylococcus aureus	25923	~10^4	Marked inhibition	–

Availability

Difco™ Brilliant Green Agar

EP SMWW

Cat. No. 228530 Dehydrated – 500 g

BBL™ Brilliant Green Agar

EP SMWW

Cat. No. 295963 Prepared Plates – Pkg. of 20*

**Store at 2-8°C.*