Brilliant Green Agar Modified

Intended Use

Brilliant Green Agar Modified is used for isolating *Salmonella* from water, sewage and foodstuffs.

Summary and Explanation

Kampelmacher¹ proposed the formula for a selective medium to isolate *Salmonella* from pig feces and minced meat. Brilliant Green Agar Modified is more selective than Desoxycholate Citrate Agar and other brilliant green media, and inhibits the growth of *Pseudomonas aeruginosa* and partially inhibits the growth of *Proteus* spp. which may resemble *Salmonella*.

Salmonella enterica grows well on Brilliant Green Agar Modified compared to Desoxycholate Citrate Agar.²

Brilliant Green Agar Modified is recommended for the isolation of *Salmonella*, other than *Salmonella* Typhi, from water and associated materials³ and meat and meat products.⁴ It is recommended by the British Poultry Meat Society⁵ for the examination of poultry and poultry products. The recommended procedures include using complementary selective culture media and techniques to increase the likelihood of isolating multiple serotypes of *Salmonella* from samples.⁶

User Quality Control

Identity Specifications

Difco™ Brilliant Green Agar Modified

Dehydrated Appearance: Pink, free-flowing, homogeneous.

Solution: 5.2% solution, soluble in purified water upon

boiling. Solution is orange-brown, clear to

slightly opalescent.

Prepared Appearance: Orange-brown, clear to slightly opalescent.

Reaction of 5.2%

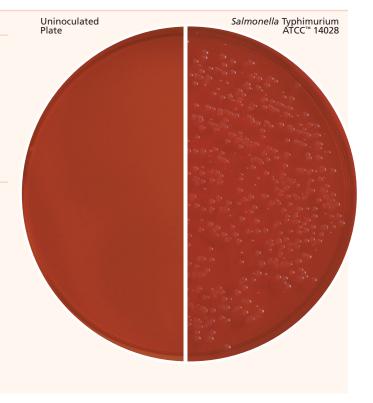
Solution at 25°C: pH 6.9 \pm 0.1

Cultural Response

Difco™ Brilliant Green Agar Modified

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

ORGANISM	ATCC™	INOCULUM CFU	RECOVERY	COLONY COLOR
Escherichia coli	25922	10³	Complete to partial inhibition	Green
Proteus mirabilis	25933	10³	Complete to partial inhibition	Red
Salmonella enterica subsp. enterica serotype Typhimurium	14028	10²-10³	Good	Red





Principles of the Procedure

Brilliant Green Agar Modified contains beef extract and peptone as sources of carbon, nitrogen, vitamins and minerals. Yeast extract supplies B-complex vitamins which stimulate bacterial growth. Lactose and sucrose are carbohydrate sources. In the presence of phenol red, a pH indicator, lactose- and/or sucrose-nonfermenting Salmonella will produce red colonies. Brilliant green inhibits gram-positive organisms and many gram-negative bacteria, except Salmonella. Agar is the solidifying agent.

Formula

Difco™ Brilliant Green Agar Modified

Approximate Formula* Per Liter		
Beef Extract	5.0	g
Peptone	10.0	g
Yeast Extract	3.0	g
Disodium Phosphate	1.0	g
Monosodium Phosphate	0.6	g
Lactose	10.0	g
Sucrose	10.0	g
Phenol Red	0.09	q
Brilliant Green	4.7 m	ng
Agar	12.0	g
*Adjusted and/or supplemented as required to meet performance criteria.		_

Directions for Preparation from Dehydrated Product

- 1. Suspend 52 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. DO NOT AUTOCLAVE.
- 3. Test samples of the finished product for performance using stable, typical control cultures.

Procedure

Meat and Meat Products

- 1. Weigh 25 g of the sample into a sterile blender jar and add 225 mL of Buffered Peptone Water. Macerate for a sufficient time to give 15,000-20,000 revolutions.
- 2. Aseptically transfer the contents of the blender jar to a 500 mL flask. Incubate at 37 ± 0.1 °C for 16-20 hours.
- 3. Transfer 10 mL samples to 100 mL Muller Kauffmann Tetrathionate Broth.
- 4. Incubate the Muller Kauffmann Tetrathionate Broth at 42-43°C.

Sewage Polluted Natural Water

This procedure is applicable to the isolation of Salmonella spp. other than S. Typhi.

- 1. Inoculate 25 mL aliquots of the sample into 25 mL of double strength Buffered Peptone Water and incubate at 37°C for 18 hours.
- 2. Transfer 1 mL samples into 10 mL of Muller Kauffmann Tetrathionate Broth.
- 3. Incubate at 43°C for 48 hours.

Subculture

- 1. Subculture from the broth at 18-24 hours and at 48 hours onto Brilliant Green Agar Modified.
- 2. Examine for typical colonies of Salmonella after overnight incubation at 37°C.

Expected Results

Salmonella will produce red colonies.

Limitations of the Procedure

- 1. Organisms other than Salmonella spp., such as Morganella morgani and some Enterobacteriaceae, may grow on the
- 2. Confirmatory tests, such as fermentation reactions and seroagglutination, should be carried out on all presumptive Salmonella spp.

References

- Guinee and Kampelmacher. 1962. Antonie van Leeuwenhoek 28:417.
- Heard, Jennet and Linton. 1969. Br. Vet. J. 125:635.
 H. M. S. O. 1982. Methods for the isolation and identification of salmonellae (other than *Salmonella* typhi) from water and associated materials.

 International Organisation for Standardization. 1974. Draft International Standard ISO/DIS 3565.
- Geneva, Switzerland.
- 5. British Poultry Meat Society. 1982. A manual of recommended methods for the microbiological examination of poultry and poultry products.

 6. Harvey and Price. 1976. J. Hyg. Camb. 77:333.

Availability

Difco™ Brilliant Green Agar Modified

Cat. No. 218801 Dehydrated - 500 g

Europe

Cat. No. 254490 Prepared Plates - Pkg. of 20*

*Store at 2-8°C.

