

BRILLIANT GREEN AGAR W/ SULFADIAZINE (7310)

Intended Use

Brilliant Green Agar w/ Sulfadiazine is used for the selective enrichment of *Salmonella* spp.

Product Summary and Explanation

Salmonellosis continues to be an important public health problem. Infection with non-typhi *Salmonella* spp. often causes mild, self-limiting illness.¹ The illness results from consumption of raw, undercooked, or improperly processed foods contaminated with *Salmonella*. Many of these cases of *Salmonella* related gastroenteritis are due to improper handling of poultry products.

Brilliant Green Agar was first described by Kristensen et al.² and later modified by Kauffman.³ The outstanding selectivity of this medium permits the use of moderately heavy inocula, evenly distributed over the surface. The addition of sulfonamides into Brilliant Green Agar further inhibits *Escherichia coli* and *Proteus* spp. Brilliant Green Agar, abbreviated as BGA, with Sulfadiazine is recommended for the isolation of *Salmonella* from foods, especially eggs.

Principles of the Procedure

Enzymatic Digest of Casein and Enzymatic Digest of Animal Tissue are the carbon and nitrogen sources used for general growth requirements in BGA w/ Sulfadiazine. Yeast Extract supplies B-complex vitamins, and Lactose and Sucrose are the carbohydrates in this medium. In the presence of Phenol Red, a pH indicator, non-lactose and/or non-sucrose-fermenting *Salmonella* will produce pink to red colonies. Sulfadiazine and Brilliant Green are the selective agents, inhibiting gram-positive organisms and many gram-negative bacteria, except *Salmonella*. Sodium Chloride maintains the osmotic balance. Agar is the solidifying agent.

Formula / Liter

Yeast Extract.....	3 g
Enzymatic Digest of Casein	5 g
Enzymatic Digest of Animal Tissue.....	5 g
Sodium Chloride	5 g
Lactose	10 g
Sucrose.....	10 g
Brilliant Green	0.0125 g
Phenol Red	0.08 g
Sulfadiazine.....	0.08 g
Agar	20 g

Final pH: 6.9 ± 0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precautions

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin. Inhalation of powder may cause respiratory irritation.

Directions

1. Suspend 58 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, free flowing, and beige with a green tint.

Prepared Appearance: Prepared medium is brown-green, trace to slightly hazy, and slightly opalescent.

Expected Cultural Response: Cultural response on Brilliant Green Agar w/ Sulfadiazine at 35°C for 18 - 24 hours incubation.

Microorganism	Approx. Inoculum (CFU)	Expected Results	
		Growth	Reaction
<i>Escherichia coli</i> ATCC® 25922	1000	Partial to complete inhibition	Yellow to green colonies
<i>Salmonella choleraesuis</i> ATCC® 13076	10-300	Fair to good	Pink colonies
<i>Salmonella typhi</i> ATCC® 19430	1000	None to Poor	Pink colonies
<i>Salmonella typhimurium</i> ATCC® 14028	10-300	Fair to good	Pink colonies
<i>Staphylococcus aureus</i> ATCC® 25923	1000	Inhibited	---

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer to appropriate references for instructions on specific material being tested for *Salmonella*.^{1,4-7}

Results

Refer to appropriate references and procedures for results.

Storage

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration

Refer to expiration date stamped on container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitation of the Procedure

Due to varying nutritional requirements, some strains may be encountered that grow poorly or fail to grow on this medium.

Packaging

Brilliant Green Agar w/ Sulfadiazine Code No. 7310A 500 g
7310B 2 kg
7310C 10 kg

References

1. Marshall, R. T. (ed.). 1993. Standard methods for the examination of dairy products, 16th ed., American Public Health Association, Washington, D.C.
2. Kristense, M., V. Lester, and A. Jurgens. 1925. On the use of trypsinized casein, bromthymol blue, bromcresol purple, phenol red and brilliant green for bacteriological nutrient media. Br. J. Exp. Pathol. 6:291.
3. Kauffmann, F. 1935. Weitere Erfahrungen mit den kombinierten Anreicherungsverfahren für Salmonellabacillen. Z. Hyg. Infektionskr. 117:26.
4. www.fda.gov/Food/ScienceResearch/LaboratoryMethods/BacteriologicalAnalyticalManualBAM/default.htm.
5. Cunniff, P. (ed.). 1995. Official Methods of Analysis AOAC International, 16th ed. AOAC International, Gaithersburg, MD.
6. Vanderzant, C., and D. F. Splittstoesser (eds.). 1992. Compendium of methods for the microbiological examination of foods, 3rd ed. American Public Health Association, Washington, D.C.
7. Eaton, A. D., L. S. Clesceri, and A. E. Greenberg (eds.). 1995. Standard methods for the examination of water and wastewater, 19th ed. American Public Health Association, Washington, D.C.

Technical Information

Contact Acumedia Manufacturers, Inc. at TEL (800)783-3213 in the US/Canada or (410)780-5120 and FAX (800)875-8563 in the US/Canada or (410)780-5470 for Technical Service on questions involving dehydrated culture media preparation or performance.