

Technical Information

Brilliant Green Sulpha Agar

Product Code: DM 1492

Application: Brilliant Green Sulpha Agar is used for the selective isolation and detection of *Salmonella* species in foods especially from eggs and egg products

Composition**

Ingredients	Gms / Litre
Yeast extract	3.000
Proteose peptone	10.000
Lactose	10.000
Sucrose	10.000
Sodium sulphapyridine	1.000
Sodium chloride	5.000
Brilliant green	0.0125
Phenol red	0.080
Agar	20.000
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Salmonella species are ubiquitous in the environment. They enter the gastrointestinal tract of animals after consumption of contaminated feed. Even after stringent animal husbandry practices those organisms again returned to the environment from Excrete of animals and stay in the global food chain ^(1, 2). Eggshell and its contents are usually sterile at the time of oviposition. Subsequently it gets contaminated when come in contact with the nest, the floor and litter of other birds ⁽⁵⁻⁷⁾. *Salmonella* species in human being are usually the causative agents of a self-limiting gastroenteritis. In some cases they may also cause typhoid fever also. *Salmonella* contamination is most frequently encountered in the poultry industry. Brilliant Green Sulpha Agar is used for the selective isolation and detection of *Salmonella* species in foods especially from eggs and egg products. Brilliant Green Agar was first formulated by Kristensen, Lester and Jargens ⁽³⁾ which was further modified by Osborne and Stokes ⁽⁴⁾ by adding 0.1% sodium sulphapyridine to the original formulation. This addition helped to increase the selective properties of the medium. Colonies of *Salmonella* may sometimes vary from red to pink to white depending upon the time and length of incubation and the type of *Salmonella strain*. Do not autoclave the medium for more than 15 minutes as it decreases the selectivity of the medium ⁽⁸⁾. Yeast extract and proteose peptone provide essential growth nutrients, amino acids and vitamins. Brilliant green used in the medium is inhibitory to gram-positive and most gram-negative lactose/sucrose fermenting bacilli. Sulphapyridine enhances the selectivity of the medium. The medium does not support luxuriant growth of *Salmonella Typhi*. *Shigella* species also fail to grow on Brilliant Green Sulpha Agar (8). Since Brilliant Green Sulpha Agar is highly selective, a less inhibitory medium should be simultaneously used to recover organisms from the pre-enriched culture (Selenite Cystine Medium).

Methodology

Suspend 59.09 grams of powder media in 1000 ml distilled water. Shake well & heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. To maintain selectivity of the medium, DO NOT OVER STERILIZE OR OVERHEAT the medium.

Quality Control

Physical Appearance

Light yellow to light pink homogeneous free flowing powder

Gelling

Firm, comparable with 2.0% Agar gel.

Colour and Clarity of prepared medium

Greenish brown coloured, clear to slightly opalescent gel forms in Petri plates.

Reaction

Reaction of 5.9% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH range 6.70-7.10

Cultural Response/Characteristics

DM1492: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Enterococcus faecalis</i> ATCC29212	>=10 ³	Inhibited	0%	
<i>Escherichia coli</i> ATCC25922	50-100	none-poor	<=10%	Yellow green surrounded by intense yellow green zone
<i>Proteus vulgaris</i> ATCC 13315	>=10 ³	Inhibited	0%	
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	Good	>=50%	Pink white surrounded by a brilliant red-zone
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	Good	>=50%	Pink white
<i>Staphylococcus aureus</i> ATCC 25923	>=10 ³	inhibited	0%	

Storage and Shelf Life

Dried media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

1. Doyle M. P., (Ed.), 1989, Foodborne Bacterial Pathogens, Marcel Dekker, Inc., New York. 327- 445
2. DAoust J. Y., 1994, Int. J. Food Microbiol. 24: 11-31.
3. Kristensen M., Lester V., and Jargens A., 1925, Brit. J. Exp. Pathol. , 6:291.
4. Osborne W. W. and Stokes J. L., 1955, Ottawa; Food and Drug Laboratories, 1962.
5. Brooks and Taylor, 1955, Rep. Rd. Invest. Bd. 60, H. M. S. O., London, England.
6. Forsythe, Ayres and Radlo, 1953, Food Technol., 7:49.
7. Stadelman, Ikeme, Roop and Simmons, 1982, Poultry Sci., 61:388.
8. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams & Wilkins, Baltimore, MD.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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