

Brilliant Green Agar Modified Plate

MP016

Intended Use:

Recommended for selective isolation of *Salmonellae* other than *Salmonella* Typhi from faeces, food, dairy products.

Composition**

Ingredients	g/ L
Proteose peptone	10.000
Yeast extract	3.000
Lactose	10.000
Sucrose	10.000
Sodium chloride	5.000
Phenol red	0.080
Brilliant green	0.0125
Agar	20.000
Sodium sulphaacetamide	1.000
Sodium mandelate	0.250
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Either streak, inoculate or surface spread the test inoculum (50-100 CFU) aseptically on the plate.

Principle And Interpretation

Salmonella species cause many types of infections, from mild self-limiting gastroenteritis to life threatening typhoid fever. The most common form of Salmonella disease is self-limiting gastroenteritis with fever lasting less than 2 days and diarrhoea lasting less than 7 days. Brilliant Green Agar Base, Modified, as a primary plating medium for isolation of *Salmonella* species was first described by Kristensen et. al. (1) and further modified by Kauffmann (2). Brilliant Green Agar is also recommended by APHA (3,4) FDA (5) and described in EP, BP and IP (6,7,8).

This medium contains brilliant green, which inhibits growth of majority of Gram-negative and Gram-positive bacteria. *S.Typhi*, *Shigella* species, *Escherichia coli*, *Pseudomonas* species, *Staphylococcus aureus* are mostly inhibited. Clinical specimens can be directly plated on this medium. However, being highly selective, it is recommended that this medium should be used along with a less inhibitory medium to increase the chances of recovery. Often cultures enriched in Selenite or Tetrathionate Broth is plated on Brilliant Green Agar along with Bismuth Sulphite Agar, SS Agar, MacConkey Agar.

The medium contains proteose peptone and yeast extract as sources of carbon, nitrogen, vitamins, amino acids and essential nutrients. The two sugars namely lactose and sucrose serve as energy sources. Fermentation of lactose and/or sucrose in the medium results in the formation of acidic pH which is detected by phenol red indicator. Sodium chloride maintains the osmotic equilibrium. Brilliant green helps to inhibit the contaminating microflora. Non-lactose fermenting bacteria develop white to pinkish red colonies within 18 - 24 hours of incubation.

Type of specimen

Clinical : faeces; Food and dairy samples, water samples

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (3,4,9,10).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (11).

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (12,13).

Warning and Precautions

In Vitro diagnostic use only. For professional use only. Read the label before opening the pack. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and cultures. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Though this medium is selective for *Salmonella* other species of *Enterobacteriaceae* may grow.
2. *Salmonella* Typhi and *Shigella* species may not grow on this medium.
3. Moreover *Proteus*, *Pseudomonas* and *Citrobacter* species may mimic enteric pathogens by producing small red colonies.
4. Further confirmation has to be carried out on presumptive *Salmonella* isolates.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Sterile Brilliant Green Agar in 90 mm disposable plates with smooth surface and absence of black particles/cracks/bubbles

Colour of medium

Greenish brown coloured medium

Quantity of medium

25 ml of medium in 90 mm disposable plates.

pH

6.70-7.10

Sterility Check

Passes release criteria

Cultural Response

Cultural response was carried out after an incubation at 30-35°C for 24-48 hours. Recovery rate is considered as 100% for bacteria growth on Soyabean Casein Digest Agar.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
<i>Salmonella</i> Typhimurium ATCC 14028 (00031*)	50-100	good-luxuriant	≥50 %	pinkish white
<i>Salmonella</i> Enteritidis ATCC 13076 (00030*)	50 -100	good-luxuriant	≥50 %	pinkish white
<i>Salmonella</i> Abony NCTC 6017 (00029*)	50-100	good-luxuriant	≥50 %	pinkish white
<i>Salmonella</i> Typhi ATCC 6539	50 -100	fair-good	30 -40 %	reddish pink
<i>Escherichia coli</i> ATCC 25922 (00013*)	50 -100	none-poor	0 -10 %	yellowish green
<i>Escherichia coli</i> ATCC 8739 (00012*)	50 -100	none-poor	0 -10 %	yellowish green
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ³	inhibited	0%	
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 6538 (00032*)	≥10 ³	inhibited	0%	

Key : (*) Corresponding WDCM numbers.

Storage and Shelf Life

On receipt store between 2-8°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (12,13).

Reference

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5. Bacteriological Analytical Manual, 5th Ed, 1978, AOAC, Washington D.C.
6. Indian Pharmacopoeia, 2022, Indian Pharmacopoeia Commission, Ministry of Health and Family Welfare Government of India.
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8. European Pharmacopoeia, 2022, 10 th volume, European Directorate for the quality of medicines & Healthcare.
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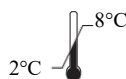
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Storage temperature



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