Brilliant Green Agar, Modified

Intended Use
Brilliant Green Agar is a highly selective medium used for the isolation of *Salmonella* other than *S. typhi* from clinical and non-clinical samples.

Summary
First introduced by Kristensen *et al* (1925), for isolation of *Salmonella* (except *Salmonella typhi*). The medium was modified by the Netherlands Institute for Public Health, Utrecht. The modification was to increase the dye concentration in the medium to increase the selectivity of the medium. Brilliant Green Agar Modified is recommended for the isolation of *Salmonella,* other than *Salmonella typhi*, from water, meat and meat products. It is recommended by the British Poultry Meat Society for the examination of poultry and poultry products.

Principle
Brilliant Green Agar with phosphates is used for selective isolation and identification of *Salmonella* from mixed flora by inhibiting *Escherichia coli, Proteus, Pseudomonas* species. Brilliant Green Agar modified is included in standard procedures recommended by APHA for water and wastewater examination. Peptone, beef extract and yeast extract act as source of carbon, nitrogen, vitamins, amino acids and other essential nutrients. Phenol red indicator detects the production of acid formed by fermentation of lactose and sucrose. Osmotic equilibrium is maintained by sodium chloride and the medium is buffered by phosphates.

Formula*

Ingredients	**g/L**
Beef Extract	5.0
Peptone	10.0
Yeast Extract	3.0
Disodium Phosphate	1.0
Monosodium Phosphate	0.6
Lactose	10.0
Sucrose	10.0
Phenol Red	0.09
Brilliant Green	0.047
Agar	12.0
Final pH (at 25°C)	6.9 ± 0.2

*Adjusted to suit performance parameters.

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2ºC-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of specimen
Clinical samples – faeces, Food samples, Water samples

Specimen Collection and Handling
Ensure that all samples are properly labelled.
Follow appropriate techniques for handling samples as per established guidelines.
Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.
The samples must be stored and tested within the permissible time duration.
After use, contaminated materials must be sterilized by autoclaving before discarding

Directions

1. Suspend 51.69 g of the powder in 1000 mL purified / distilled water.
2. Mix thoroughly.
3. Heat with frequent agitation until the medium just boils to dissolve the powder completely.
4. DO NOT OVERHEAT OR AUTOCLAVE.
5. Cool immediately in a water bath at 45°C-50°C and pour into sterile petridishes.
6. To increase the selectivity, aseptically add 2 vials of Sulpha Supplement (204191360005) and mix well before pouring into sterile petridishes.

Quality Control

Dehydrated Appearance: Pink coloured, homogenous, free flowing powder.
Prepared Appearance: Brown to orange brown coloured, slightly opalescent gel forms in petridishes.
Cultural Response: Cultural characteristics observed after an incubation of 18-24 hours at 30°C-35°C.

Organism (ATCC)	**Growth**	**Colour of Colony**
Escherichia coli (25922)	Partial inhibition	Yellow
Staphylococcus aureus subsp. *aureus* (25923)	Partial inhibition	Red
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good	Pinkish white

Interpretation of Results

1. *Salmonella* species produce pinkish-white to red colonies surrounded by brilliant red zones in the medium.
2. Lactose fermenting or sucrose fermenting organisms produce yellow to yellow green colonies surrounded by yellow green zones in the medium. *Proteus*, *Citrobacter* and *Pseudomonas* species, if, present may mimic enteric pathogens by producing small red colonies.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Precautions/Limitations

1. Brilliant Green Agar, Modified being highly selective, it is recommended that this medium be used along with a less inhibitory medium to increase the chances of recovery. Often cultures enriched in Selenite Broth or Tetrathionate Broth Base is plated on this medium along with Bismuth Sulphite Agar, SS Agar, MacConkey Agar, DCA and XLD Agar.
2. The recovery of many *Salmonella* species is greatly reduced if the specimens (stool samples) remain unpreserved for more than 3 hours before processing.
3. In case of delay, inoculate the specimen onto an appropriate transplant media to maintain viability of the organisms.
4. Organisms other than *Salmonella* species, like *Morganela morgani* and some *Enterobacteriaceae* may grow on this medium. Lactose fermenting *S. arizona* may be present in foods.
5. The medium is not recommended for isolation of *S. typhi, S. paratyphi* and *Shigella* species.
6. Protect the medium from light to avoid discolouration.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Kristensen M; Lester V and Jurgens A; 1925, Brit. J. Exp. Pathol; 6; 291.
2. IP, 1996, Ministry of Health and Family Welfare, Govt. of India, Vol.2.
3. US Pharmacopeial Convention, Inc. 2001. The Unites States Pharmacopeia 25/NF20-2002. The US Pharmacopeia Convention, Inc; Rockville, Md.
4. Downes and Ito (ed.) 2001, Compedium Of Methods for The Microbiological Examination of Foods, 4th edition, APHA Washington DC.
5. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201020270100	Dehydrated Culture Media	100 g
201020270500	Dehydrated Culture Media	500 g
203020480100	Bottle Media	100 mL