Brilliant Green Agar, Medium USP

Intended Use
Brilliant Green Agar, Medium is used for selective isolation of *Salmonella* other than *S. typhi* from clinical and non-clinical samples in compliance with USP.

Summary
First introduced by Kristensen et al, 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 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,* and *Pseudomonas* species. Brilliant Green Agar Medium is included in standard procedures recommended by APHA for water and wastewater examination. Proteose 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**
Peptic Digest of Animal Tissue	5.0
Pancreatic Digest of Animal Tissue	5.0
Yeast Extract	3.0
Sucrose	10.0
Lactose	10.0
Sodium Chloride	5.0
Brilliant Green	0.0125
Phenol Red	0.08
Agar	20.0
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 58.09 g of powder in 1000 mL purified / distilled water and mix well.
2. Boil with frequent agitation to dissolve the powder completely. AVOID OVERHEATING.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
4. 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: Greenish 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, Medium USP 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
201020280100	Dehydrated Culture Media	100 g
201020280500	Dehydrated Culture Media	500 g