Brilliant Green Agar (BGA) ISO

Cat. 1078

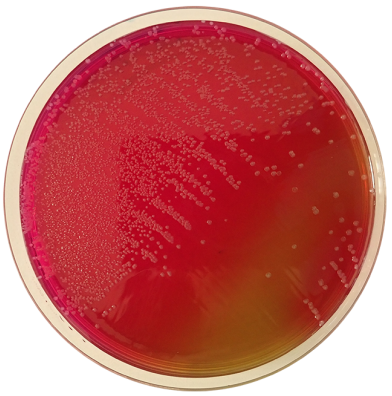
Highly selective medium for the isolation of Salmonella, other than Salmonella typhi, from foods, faeces and dairy products.

Practical information

Aplications	Categories
Selective isolation	Salmonella

Industry: Clinical / Food / Dairy products

Regulations: ISO 19250 / ISO 6579



Principles and uses

Brilliant Green Agar (BGA) is used for the selective isolation of Salmonella spp, other than S. typhi, in foods and clinical specimens, via Lactose/Sucrose fermentation.

The Peptone mixture provides nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is a source of vitamins, particularly the B-group. Sucrose and Lactose are fermentable carbohydrates providing carbon and energy. Phenol red is the pH indicator, turning the medium a yellow color with the formation of acid as a result of Lactose/Sucrose fermentation. Brilliant green inhibits Gram-positive bacteria and most Gram-negative bacilli, other than Salmonella spp. Lactose/Sucrose fermenters are usually inhibited. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Bacteriological agar is the solidifying agent.

The medium, which has a coffee color at the beginning, changes to red during incubation at 35-37 ºC. A probable presence of Salmonellae is indicated by small, transparent, either colorless or pink or opaque-white colonies, often surrounded by a pink or red zone. Some of the uninhibited Gram-negative, Lactose/Sucrose fermenting organisms present opaque green-yellow colonies, surrounded by a yellow halo. Other lactose negative microorganisms, such as Proteus spp., form colonies of a pale pink or red color, transparent and surrounded by a brilliant red halo.

Formula in g/L

Bacteriological agar	20	Brilliant green	0,0125
Lactose monohydrate	10	Peptone	10
Phenol red	0,08	Sodium chloride	5
Sucrose	10	Yeast extract	3

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 58,1 grams of medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 ºC for 15 minutes. Cool to 45-50 ºC, mix well and dispense into plates. If necessary, allow to dry about for approximately 2 hours with the covers partially removed.

Instructions for use

- Use standard procedures to obtain isolated colonies.
- When there is a suspicion that the material under study contains low concentrations of Salmonellae, it is necessary to initially inoculate the sample in Brilliant Green Tetrathionate Broth (Cat. 1253) or Selenite Cystine Broth (Cat. 1220) as a preenrichment step.
- Incubate at 35±2 ºC for 18-24 hours.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Pinky Beige	Red orange	6,9±0,2

Microbiological test

Incubation conditions: (35±2 ºC / 18-24 h).

Microorganisms	Specification	Characteristic reaction
Salmonella enteritidis ATCC 13076	Good growth	Pink-white colonies
Salmonella typhimurium ATCC 14028	Good growth	Pink-white colonies
Enterococcus faecalis ATCC 29212	Inhibited growth	
Salmonella abony NCTC 6017	Good growth	Pink-white colonies
Staphylococcus aureus ATCC 6538	Inhibited growth	
Escherichia coli ATCC 8739	Partial inhibition	Green colonies

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

European Pharmacopoeia. 6th Ed. 2007.
American Public Health Association. Standard Methods for the Examination of Water and Waster water, 11th Edition APHA, New York, 1960. American Public Health Association. Recommended Methods for the Microbiological Examination of Foods, APHA, Inc. New York, 1958.