BRILLIANT GREEN AGAR

- For in vitro use only - Catalogue No. PB84

Our Brilliant Green Agar is a selective and differential medium for the isolation of Salmonella species other than *S. typhi* and *S. paratyphi* from clinical specimens.

Brilliant Green Agar was initially developed in 1925 by Kristensen and later modified by Kauffmann in 1935. Galton and Quan demonstrated that when used in conjunction with Tetrathionate Broth (Dalynn TT33), Brilliant Green Agar could be used effectively for the isolation of *Salmonella* from fecal specimens. The base includes the nutritive components meat and casein peptone, and yeast extract that provides the organism with nitrogen, amino acids, and vitamins. Phenol red is the pH indicator that detects changes in pH due to the fermentation of sucrose and/or lactose. The selectivity is due to the dye, brilliant green, which inhibits the majority of gram-positive and some gram-negative bacteria including *Salmonella typhi* and *Shigella* species. Because of the high selectivity of the agar a heavy inoculum may be used when streaking the plate.

Formula per Litre of Medium

Pancreatic Digest of Casein	5.0 g
Peptic Digest of Animal Tissue	5.0 g
Yeast Extract	3.0 g
Lactose	10.0 g
Sucrose	10.0 g
Sodium Chloride	5.0 g
Agar	20.0 g
Phenol Red	0.08 g
Brilliant Green	0.0125 g

pH 6.9 ± 0.2

Recommended Procedure

1. Allow medium to reach room temperature.
2. Inoculate the specimen (fecal sample or rectal swab) in one corner of the plate and streak as to obtain isolated colonies.
3. A non-selective medium should also be inoculated to ensure recovery of low levels of gram-negative bacteria and characterize other organisms that may be present.
4. Incubate aerobically at 35°C.
5. Examine after 18-24 hours.
6. If no growth is observed re-incubate plates an additional 24 hours.

Interpretation of Results

On Brilliant Green Agar, typical *Salmonella* colonies appear as pinkish-white or red colonies surrounded by a red halo in the medium. Differentiation is quite pronounced, as lactose or sucrose fermenting organisms, which are uninhibited or overcome inhibition, produce yellow-green colonies with a green halo.

Biochemical and/or serological tests should be performed on isolated colonies in order to complete identification.

- *Slow lactose fermenters such as Proteus or Pseudomonas may grow as red colonies*

- *Some literature states that the dye brilliant green is inhibitory to gram-negative organisms such as E.coli, but this is inconsistent with the observation that enteric organisms flourish in brilliant green broth with a higher concentration of brilliant green*

Quality Control

After checking for correct pH, colour, depth, and sterility, the following organisms are used to determine the growth performance of the completed medium.

Organism	Expected Result
Salmonella typhimurium ATCC 14028	Growth Pink with red halo
Staphylococcus aureus ATCC 25923	Inhibition

Storage and Shelf Life

Our Brilliant Green Agar should be stored away from direct light at 4°C to 8°C. The medium side should be uppermost to prevent excessive accumulation of moisture on the agar surface. Under these conditions this medium has a shelf life of 8 weeks from the date of manufacture.

References

1. Kristensen M., Lester V, Jurgens A. On the use of trypsinized casein, brom thymol blue, brom cresol purple, phenol red and brilliant green for bacteriological nutrient media. Br J Exp Pathol 1925; 6: 291-7.
2. Speck ML, Ed. Compendium of methods for the microbiological examination of foods. Washington, DC: APHA, 1976.
3. MacFaddin JF. Media for isolation, cultivation, identification, maintenance of bacteria, Vol I. Baltimore: Williams & Wilkins, 1985.
4. Murray PR, Baron E, Pfaller M, Tenover F, Yolken R. Manual of Clinical Microbiology. 7th ed. Washington, DC: ASM, 1999.

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