



Dehydrated Culture Media
Bases / Media Supplements

Technical Information

B.D.G. - Broth, Hajna

Product Code: DM 1205

Application: BPL Agar (Brilliant green-Phenol red-Lactose Agar) is used for selective isolation and identification of Salmonellae with the exception of *Salmonella* Typhi in faeces, urine, meat, milk and other materials.

Composition**

Ingredients	Gms / Litre
Ingredients	20.000
Tryptose	5.000
Dextrose	5.000
Sodium chloride	0.100
Sodium deoxycholate	4.000
Dipotassium phosphate	1.500
Monopotassium phosphate	7.0±0.2
Final pH (at 25°C)	

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Examination of water for the presence of marker groups' namely enteric bacilli is one of the most common tests in a microbiology laboratory, because of the relative ease and speed with which these tests can be accomplished. Where it is claimed that drinking water has been processed for safety, the finding of such organism indicate a failure of the process. It is a valuable bacterial indicator for determining the extent of fecal contamination of recreational surface waters or drinking water⁽¹⁾. B.D.G.-Broth, Hajna (Buffered Deoxycholate Glucose Broth) is a selective enrichment or presumptive test medium used for the detection of all enteric bacilli in drinking water.

This medium is prepared as per the devised of Hajna and Damon⁽²⁾. Using this media these authors reported a higher number of positive coliform from water and food samples than with the use of standard methods media (Lactose Broth, etc.) B.D.G. Broth supports excellent growth of gram-negative enteric bacilli other than coliforms and may be used for the detection of lactose non-fermenting organisms.

While testing treated water, tubes showing no gas and very little or no growth are considered as negative. Tubes with growth are sub cultured on MacConkey Agar (DM1081), SS Agar (DM1108) or Bismuth Sulphite Agar (DM1027) and suspected cultures are differentiated and identified⁽³⁾. Authors reported recovery of a number of organisms including Proteus from water samples showing growth but no gas in the presumptive medium. B.D.G. Broth contains sodium deoxycholate, which inhibits the growth of spore formers and other gram-positive organism without affecting growth of coliform organisms and gram-negative bacilli. For sample checking it was suggested that 10 ml of the medium should be used for sample volume of 1 ml or less. For the examination of larger amounts of water, the medium should be prepared in different strength. For example, 10 ml of the inoculum is added to 10 ml of double strength medium. Tubes showing gas formation following incubation at 35-37°C are transferred for confirmation.

Hajna⁽⁴⁾ also recommended the use of BDG Broth for the performance of the Methyl Red test and Voges Proskaur test. Tryptose provides the essential nutrition required for the bacteria. Dextrose is the carbon source. Sodium deoxycholate inhibits all gram-positive bacteria and coliforms but allows gram-negative bacilli to grow. Sodium chloride provides essential ions. Dipotassium and monopotassium phosphates provide buffering to the medium.

Methodology

Suspend 40.04 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Dispense and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.



Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured, clear solution without any precipitate

Reaction

Reaction of 3.56% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH Range: 6.8-7.2

Cultural Response/Characteristics

DM 1205: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth
<i>Bacillus subtilis</i> ATCC 6633	$\geq 10^3$	Inhibited
<i>Escherichia coli</i> ATCC5922	50-100	Luxuriant
<i>Proteus vulgaris</i> ATCC13315	50-100	Luxuriant
<i>Salmonella Typhi</i> ATCC539	50-100	Luxuriant
<i>Shigella flexneri</i> ATCC2022	50-100	Luxuriant
<i>Staphylococcus aureus</i> ATCC 25923	$\geq 10^3$	Inhibited

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8°C in sealable plastic bags for 2-5 days.

Further Reading

1. Corry J. E. L., Curtis G. D. W. and Baird R. M., Culture Media For Food Microbiology, Vol. 34, Progress in Industrial Microbiology, 1995, Elsevier, Amsterdam.
2. Hajna A. A. and Damon S. R., 1955, J. Am. Water Works Assoc. 47:63 1.
3. Public Health Lab, 1951, 9:23.
4. Personal Communication, 1953.

Storage and Shelf Life

Store below 30°C and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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