

TM 1987 – B.D.G - BROTH HAJNA

INTENDED USE

For the detection of enteric bacilli from food and in treated drinking water.

PRODUCT SUMMARY AND EXPLANATION

Examination of water for the presence of marker groups such as enteric bacilli is one of the most common tests in a microbiology laboratory, partly 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 demonstrates 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. 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 according to the formula of Hajna and Damon. These authors reported a higher number of positive coliform findings from water and food samples using this media 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, SS Agar or Bismuth Sulphite Agar and suspected cultures are differentiated and identified. Authors reported recovery of a number of organism including *Proteus* from water samples showing growth but no gas in the presumptive medium. B.D.G. Broth contains sodium deoxycholate, which inhibits the development 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 multiple 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 also recommended the use of BDG Broth for the performance of the Methyl Red test and Voges Proskaur test.

COMPOSITION

Ingredients	Gms / Ltr
Tryptose	20.000
Dextrose (Glucose)	5.000
Sodium chloride	5.000
Sodium deoxycholate	0.100
Dipotassium hydrogen phosphate	4.000
Potassium dihydrogen phosphate	1.500

PRINCIPLE

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 hydrogen phosphate and Potassium dihydrogen phosphate provide buffering to the medium.

INSTRUCTION FOR USE

- Dissolve 35.60 grams in 1000 ml purified / distilled water.
- Heat if necessary to dissolve the medium completely.
- Dispense in tubes or flasks as desired.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.



QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium : Light yellow coloured, clear solution without any precipitate.
pH (at 25°C) : 7.0±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Incubation Temperature	Incubation Period
<i>Bacillus subtilis subsp. spizizenii</i>	6633	≥10 ⁴	Inhibited	35-37°C	18-24 Hours
<i>Escherichia coli</i>	25922	50-100	Luxuriant	35-37°C	18-24 Hours
<i>Proteus vulgaris</i>	13315	50-100	Luxuriant	35-37°C	18-24 Hours
<i>Salmonella Typhi</i>	6539	50-100	Luxuriant	35-37°C	18-24 Hours
<i>Shigella flexneri</i>	12022	50-100	Luxuriant	35-37°C	18-24 Hours
<i>Staphylococcus aureus subsp. aureus</i>	25923	≥10 ⁴	Inhibited	35-37°C	18-24 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL










After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

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. 47:631.



- 3. Personal Communication, 1953.
- 4. Public Health Lab, 1951, 9:23.

 GMP Good Manufacturing Practices Certified	 Best Before	 QTY. Quantity	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 LOT/ B. NO. Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
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