

Technical Information

B.A.G.G. Broth Base (Buffered Azide Glucose Glycerol Broth Base)

Product Code: DM 1220

Application: B.A.G.G. Broth Base (Buffered Azide Glucose Glycerol Broth Base) is used for selective cultivation and detection of faecal Streptococci (group D) from clinical and sanitary samples.

Composition**

Ingredients	Gms / Litre
Tryptose	20.000
Dextrose	5.000
Dipotassium phosphate	4.000
Monopotassium phosphate	1.500
Sodium chloride	5.000
Sodium azide	0.500
Bromo cresol purple	0.015
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Enterococci the commensals of the gut are low-grade pathogens. However in catheterized patients they cause urinary tract infections abdominal wound infections following gut surgery and endocarditis. Hajna and Perry ⁽¹⁾ discovered Streptococcus faecalis (SF) Broth for the detection of faecal Streptococci, in water, milk and other materials. Based on carbohydrate fermentation SF Broth is used for identification of Enterococci. Later on Hajna ⁽²⁾ modified the medium by adding glycerol as additional growth factor to improve the fermentation ability of Enterococci and decreased the concentration of the indicator dye i.e. bromocresol purple for easier detection and colour change within 24 hours. This modified medium is named as B.A.G.G Broth Base (Buffered Azide Glucose Glycerol Broth Base).

Tryptose serve as source of carbon, nitrogen and essential nutrients. The phosphates buffer the medium well. Sodium chloride helps to maintain the osmotic equilibrium of the medium. Sodium azide inhibits the accompanying gram-negative flora. Dextrose serves as the source of energy by being the fermentable carbohydrate. Utilization of dextrose liberates acid, indicated by bromocresol purple indicator, by changing the colour of the medium to yellow. Added glycerol serves as an additional source of energy.

The test sample can be directly inoculated into the medium. Depending upon the quantity of the test water sample, either single strength or double strength medium can be used. Presumptive faecal streptococci contained in B.A.G.G. Broth Base should be further tested for confirmation ⁽³⁾.

Methodology

Suspend 36.01 grams of powder media in 1000 ml distilled water containing 5 ml glycerol. Dissolve the medium completely and dispense in test tubes in 10 ml amounts. Sterilize by autoclaving at 115°C for 15 minutes.

Note: Autoclaving at 15 lbs pressure (121°C) is not recommended. The concentration of the medium must be adjusted to suit sample volume. For smaller inocula such as clinical specimens, faeces and small sanitary specimens like water, single strength medium is used but for larger inocula such as larger sanitary and water specimens double strength medium is necessary.

Quality Control

Physical Appearance

Light yellow to light purple homogeneous free flowing powder

Colour and Clarity of prepared medium

Purple coloured, clear solution without any precipitate

Reaction

Reaction of 3.6% w/v aqueous solution containing

pH Range

6.70-7.10

Cultural Response/Characteristics

DM1220: Cultural characteristics observed after an incubation at 45⁰ C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Acid
<i>Escherichia coli</i> ATCC 25922	$\geq 10^3$	Inhibited	
<i>Enterobacter aerogenes</i> ATCC 13048	$\geq 10^3$	Inhibited	
<i>Enterococcus faecalis</i> ATCC 29212	50-100	luxuriant	Positive reaction yellow colour
<i>Streptococcus pyogenes</i> ATCC 19615	$\geq 10^3$	Inhibited	
<i>Streptococcus bovis</i> ATCC 27960	50-100	luxuriant	Positive reaction yellow colour
<i>Enterococcus faecium</i> ATCC 27270	50-100	Good	Positive reaction yellow colour

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: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

1. Hajna A. A. and Perry C. A., 1943, Am. J. Public Health, 33:550.
2. Hajna A. A., 1951, Public Health Lab., 9:80.
3. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore

Disclaimer :

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