

Technical Data

GBS Medium Base

M1073

Intended Use:

Recommended for rapid detection of group B Streptococci in clinical specimens.

Composition**

Ingredients	Gms / Litre
Proteose peptone	23.000
Sodium dihydrogen phosphate	1.500
Disodium hydrogen phosphate	5.750
Starch, soluble	80.000
Final pH (at 25°C)	7.5±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 55.12 grams in 475 ml purified/distilled water. Dissolve completely by gently heating to boiling for 15-20 minutes. Sterilize by autoclaving at 15 lbs (121°C) for 15 minutes. Cool to 60°C and aseptically add 25 ml sterile inactivated Horse serum (RM1239) and sterile rehydrated contents of 1 vial of GBS Supplement (FD054). Mix well and dispense into sterile test tubes. For the formation of gel, tubes are to be refrigerated (2-8°C) over-night before use.

Principle And Interpretation

Beta-haemolytic Streptococci with Lancefield group B antigen (*Streptococcus agalactiae*) are an important cause of serious neonatal infection characterized by sepsis and meningitis. Heavy colonization of the maternal genital tract is associated with colonization of infants and risk of neonatal disease (1). GBS Medium, formulated by Islam (2,3,4) is recommended for the isolation and detection of group B Streptococci (GBS) from clinical specimens. GBS Medium is designed to exploit the ability of most Group B Streptococci (GBS) to produce orange /red pigmented colonies when incubated under anaerobic conditions. The orange red pigment of group B Streptococci also has the characteristic of a carotenoid (4). GBS Medium Base also supports growth of other genital bacteria that cause perinatal infections (5), e.g. anaerobic *Streptococcus, Bacteroides* and *Clostridium* species.

Proteose peptone provides the necessary nutrients for the growth of Group B Streptococci. The phosphate salts buffer the medium. The antibiotic supplement (FD054) makes the medium selective for Group B Streptococci, while the horse serum enriches the media. Colonies of Group B Streptococci are 0.5 to 1 mm in diameter, round, entire and give pigmented growth (orange/red) after 24-48 hours anaerobic incubation. Other organisms that can grow on this medium do not produce the orange/red pigment.

Vaginal or rectal swabs should be inserted vertically into the medium. Incubation is carried out at 35-37°C. Pigment production is observed at hourly interval. Colour change (due to pigment production) of the butt occurs gradually, starting from the bottom of the tube towards the upper end. Presence of blood in the specimen may give false positive results.

Type of specimen

Clinical samples - Vaginal and rectal swab samples

Specimen Collection and Handling:

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,6). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :

In Vitro diagnostic Use only. For professional use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations :

1. Presumptively positive tubes should be further confirmed by biochemical analysis to identify Group B Streptococci.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control

Appearance

Cream to beige homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow to yellow coloured, slight opalescent solution with settlement of starch at bottom of the tube.

Reaction

Reaction of 11.02% w/v aqueous solution at 25°C. pH : 7.5±0.2

pН

7.30-7.70

Cultural Response

Cultural characteristics observed with added inactivated Horse serum (RM1239) and GBS Supplement (FD054) after an incubation at 35-37°C for 24-48 hours.

Organism	Inoculum (CFU)	Growth	Pigmentation
<i>Bacteroides fragilis</i> ATCC 25285	50-100	fair to good	no pigmentation
Streptococcus agalactiae ATCC 13813	50-100	good-luxuriant	orange/red
Enterococcus faecalis ATCC 29212 (00087*)	50-100	good-luxuriant	no pigmentation

*- Corresponding WDCM numbers

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (4,6).

Reference

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- 3. Islam A. K. M. S., 1977, Lancet i : 256-7 (letter).

4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

- 5. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), 2003, Manual of Clinical
- Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.
- 6. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.

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