Technical Information

GBS Medium Base

Product Code: DM 2073

Application: - GBS Medium Base is used for the isolation and rapid detection of Group B Streptococci (GBS) 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

Principle & Interpretation

Beta-haemolytic Streptococci with Lancefield group B antigen (Streptococcus agalactiae) are an important cause of neonatal infection characterized by sepsis and meningitis. Heavy colonization of the organisms on maternal genital tract is linked with colonization of bacteria in infant's responsible for neonatal disease [1]. GBS Medium, formulated by Islam [2-4] is recommended for the isolation and detection of group B Streptococci (GBS) from clinical specimens. GBS Medium is designed to expose 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 [3]. GBS Medium Base also supports growth of other genital bacteria that cause perinatal infections [1], 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 (MS2054) makes the medium selective for Group B Streptococci, while the horse serum (MS3239) 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. Presumptively positive tubes should be further confirmed by biochemical analysis to identify Group B Streptococci.

Methodology

Suspend 55.12 grams of powder media in 475 ml 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 (MS3239) and sterile rehydrated contents of 1 vial of GBS Supplement (MS2054). 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.

Quality Control

Physical Appearance
Cream to beige homogeneous free flowing powder
Colour and Clarity of prepared medium
Light amber coloured, clear to slightly opalescent solution without any precipitate in tubes
Reaction
Reaction of 11.02% w/v aqueous solution at 25°C. pH : 7.5±0.2
pH range 7.30-7.70
Cultural Response/ characteristices
DM 2073: Cultural characteristics observed with added inactivated Horse serum (MS3239) and GBS Supplement (MS2054) after an incubation at 35-37°C for 24-48 hours.

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

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° in sealable plastic bags for 2-5 days.

Further Reading

1. 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.
2. Islam A. K. M. S., 1977, Lancet i : 256-7 (letter).
3. Merrit K. and Jacobs N. J. 1978, J. Clin. Microbiol. 8, 105-7.
4. Atlas R. M. 2004, Handbook of Microbiology Media, 3rd Edition, CRC Press, 704-705

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