HS Medium

M245

HS Medium is used for cultivation of aerobic as well as anaerobic bacteria and sterility testing.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	15.000
Yeast extract	5.000
Sodium hydrosulphite	0.500
Sodium chloride	2.500
Dextrose	5.500
Resazurin	0.001
Agar	1.000
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 29.5 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Note: If more than the upper one-third of the medium has acquired a pink colour, the medium may be restored once by heating in a water bath or in free flowing steam until the pink colour disappears .

Principle And Interpretation

Anaerobic bacteria are widespread in soil, marshes, lake and river sediments, oceans, sewage, foods and animals. In humans, anaerobic bacteria normally are prevalent in the oral cavity around the teeth, in the gastrointestinal tract, especially in the colon. Most of these anaerobic habitats have both a low oxygen tension and reduced Eh, resulting from the metabolic activity of microorganisms that consume oxygen through respiration. If the oxygen is not replaced, anaerobic conditions are maintained in the environment. The media used for recovering anaerobes from specimen should include non-selective, selective and enrichment types.

HS Medium was described by Bonnel and Raby for use in sterility testing (1). It is similar to Fluid Thioglycollate Medium (M009) where sodium hydrosulphite is substituted for sodium thioglycollate, in the latter, to obtain oxidized and reduced conditions which are appropriate for the growth of aerobes as well as anaerobes (1, 2). HS medium can be used for the sterility testing of biological and pharmaceutical products. Bonnel and Raby used HS Medium for control tests on blood products and for isolation of *Corynebacterium* , Streptococci, Staphylococci, enteric bacilli, *Neisseria* , *Clostridia etc* .

Casein enzymic hydrolysate and yeast extract in the medium supply essential nutrients such as amino acids, carbon, sulphur and minerals. Sodium hydrosulphite helps to create anaerobic atmosphere, as it is an oxygen scavenger. Dextrose is the fermentable carbohydrate and resazurin is the redox indicator dye. Sodium chloride helps to maintain the osmotic equilibrium of the medium.

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium
Light straw coloured, clear to slightly opalescent solution with upper 10% or less medium having pinkish tinge on standing.

Reaction
Reaction of 2.95% w/v aqueous solution at 25°C. pH : 7.1±0.2

pH
6.90-7.30

Cultural Response

M245: Cultural characteristics observed after an incubation i)bacteria at 35-37°C ii)Clostridium species anaerobically for 18-48 hours.

Organism	Inoculum (CFU)	Growth
Clostridium perfringens ATCC 12924	50-100	good-luxuriant
Corynebacterium diphtheriae ATCC 11913	50-100	good-luxuriant
Enterobacter aerogenes ATCC 13048	50-100	good-luxuriant
Staphylococcus aureus ATCC 25923	50-100	good-luxuriant
Streptococcus pyogenes ATCC 19615	50-100	good-luxuriant

Storage and Shelf Life

Store below 30°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label.

Reference

1.Bonnel and Raby, 1958, Proc. 7th Cong. Int. Soc. Blood Transfusion,317, Rome.
2.WHO, 1960, Technical Report Series No. 200, WHO, Geneva.P

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