Schaedler Broth

M292

Schaedler Broth is used for cultivation of wide variety of microorganisms particularly from anaerobic blood cultures.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	5.670
Proteose peptone	5.000
Soya peptone	1.000
Yeast extract	5.000
Dextrose	5.830
Sodium chloride	1.670
Dipotassium hydrogen phosphate	0.830
Tris hydroxymethyl aminomethane	3.000
L-Cystine	0.400
Hemin	0.010
Final pH (at 25°C)	7.6±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 28.41 grams in 1000 ml distilled water. If desired 0.02-0.2% Agar can be added.Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add 5% sterile defibrinated blood if desired. Mix well and dispense into tubes or flasks as desired. Avoid overheating and photooxidation of the medium as it will retard the growth of bacteria.

Principle And Interpretation

Schaedler Broth was originally formulated by Schaedler et al (1) and modified by Mata et al (2) with composition changes (3). It serves as an excellent basal medium to which blood or other enrichments can be added to enhance the recovery of fastidious anaerobic organisms. Stalons et al (4) found this medium to be most effective medium for the growth of obligately anaerobic bacteria in an atmosphere of 5% carbon dioxide, 10% hydrogen and 85% Nitrogen. It can also be used to determine antibiotics MIC levels of anaerobic organisms (4). Fass et al used (5) tube method for antibiotic MIC determination.

Schaedler broth is highly nutritious medium due to casein enzymic hydrolysate, proteose peptone, soya peptone and yeast extract. Sodium Polyanethole Sulphonate (SPS) which is an anticoagulant in culture bottles promotes optimal recovery of organisms from blood (6). It acts to inhibit phagocytosis and to neutralize the antibacterial activity of fresh blood components (7, 8).

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light amber coloured clear to slightly opalescent solution in tubes

Reaction

Reaction of 2.84% w/v aqueous solution at 25°C. pH : 7.6±0.2

pH

7.40-7.80

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours under anaerobic condition.

Cultural Response

Organism	Inoculum (CFU)	Growth

Cultural Response

Bacteroides fragilis ATCC 25285	50-100	luxuriant
Clostridium butyricum ATCC 13732	50-100	luxuriant
Clostridium perfringens ATCC 12924	50-100	luxuriant
Clostridium sporogenes ATCC 11437	50-100	luxuriant
Escherichia coli ATCC 25922	>=10^3	inhibited
Streptococcus pyogenes ATCC 19615	50-100	luxuriant

Storage and Shelf Life

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

Reference

1. Schaedler R.W., Dubos R. and Castello R., 1965, J. Exp. Med., 122:59.
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3. MacFaddin J., 1985, Media for Isolation-Cultivation-Identification- Maintenance of Medical Bacteria, Vol. I. Williams and Wilkins, Baltimore.
4. Stalons D.R., Thornsberry C. and Dowel V.R., 1974, Appl. Microbiol, 27:1098.
5. Fass R.J., Prior R.B. and Rotilie C.A., 1975, Antimicrob. Agents Chemother., 8:444.
6. Rosner, 1968, Am. J. Clin. Pathol. 49:216.
7. Garrod, 1966, J. Pathol. Bacterial., 91:621.
8. Lowrence and Traub, 1969, Appl. Microbiol, 17:839.

Revision : 02 / 2015

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