



Gifu Anaerobic Broth (GAM Broth)

M1801

Gifu Anaerobic Medium (GAM Broth) is recommended as a general culture medium for cultivation and isolation of anaerobic bacteria and to test their susceptibility to antibiotics other than sulpha drugs.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Papaic digest of soyabean meal	3.000
Proteose peptone	10.000
Digested serum	13.500
Yeast extract	5.000
Beef extract	2.200
Liver extract	1.200
Dextrose	3.000
Potassium dihydrogen phosphate	2.500
Sodium chloride	3.000
Starch, Soluble	5.000
L-Cysteine hydrochloride	0.300
Sodium thioglycollate	0.300
Final pH (at 25°C)	7.3±0.1

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 59.0 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle And Interpretation

Gifu Anaerobic Medium (GAM Broth) is a liquid medium for anaerobic bacteria. As this medium contains the digested serum which has hemin, it is successfully used for cultivation of anaerobic organisms such as streptococci, pneumococci and meningococci. This medium is also suitable for blood culture (1). Anaerobic organisms require reducing condition and an absence of dissolved oxygen in the medium. Strict anaerobes obtain its energy and intermediates through oxidation utilizing hydrogen acceptors other than oxygen. Pre-reducing the medium by boiling to drive off the oxygen can expel this (2).

Sodium thioglycollate and L-Cysteine are the reducing agents added in this medium to provide adequate anaerobiosis.

Anaerobic bacteria vary in their sensitivity to oxygen and nutritional requirements (3).

Peptic digest of animal tissue and yeast extract provide nitrogen, carbon and vitamin source. Starch absorbs the toxic metabolites produced (4). Hemin serves as essential growth factor and Sodium chloride maintains osmotic equilibrium (5).

Quality Control

Appearance

Light yellow to brownish yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Amber coloured clear solution forms in tube

Reaction

Reaction of 5.9% w/v aqueous solution at 25°C. pH : 7.3±0.1

Cultural Response

M1801: Cultural characteristics observed in an anaerobic atmosphere after an incubation at 35 - 37°C for 48 - 72 hours.

Organism	Inoculum (CFU)	Growth
<i>Streptococcus pyogenes</i> ATCC 19615	50-100	good - luxuriant
<i>Bacteroides vulgatus</i> ATCC 8482	50-100	good - luxuriant
<i>Clostridium sporogens</i> ATCC 11437	50-100	good - luxuriant
<i>Clostridium perfringens</i> ATCC 13124	50-100	good - 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. Nissui Manual, Microbiological products Nissui Pharmaceutical Co., 1983.
2. Isenberg (Ed.) 1992, Clinical Microbiology Procedures Handbook, American Society for Microbiology, Washington, D.C.
3. Collee J.G., Fraser A.G., Marminon B.P., Simmons A.,)(Eds), 1996, Mackie and McCartney. Practical Medical Microbiology, 14th Ed., Churchill Livingstone.
4. Ajello. G.W., Geely J.C., Hayes P.S.et al., 1984, J. clin Microbiol., 20:55-8
5. Gibbons R.J., and MacDonald J.B., 1960, J. Bacteriol, 80:164-170

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