GC AGAR II (NCM0131)

Intended Use
GC Agar is used with hemoglobin and enrichment for the isolation and cultivation of *Neisseria gonorrhoeae* and other fastidious organisms in a laboratory setting. GC Agar II is not intended for use in the diagnosis of disease or other conditions in humans.

Description
In 1945, Johnston described a medium that grew *N. gonorrhoeae* in 24 rather than 48 hours. GC Agar was introduced in 1947 with reduced agar content. While investigating the growth rate of gonococcus, a medium containing growth factors glutamine and cocarboxylase improved recovery. In 1964, Thayer and Martin formulated a medium incorporating the antibiotics Polymyxin B and Ristocetin, with added supplements, into GC Agar. Thayer and Martin improved their medium by replacing the antibiotics with a new solution of Colistin, Vancomycin, and Nystatin (CVN). In 1970, Martin and Lester improved the new Thayer-Martin Medium by increasing the agar and glucose, and adding Trimethoprim Lactate (T), calling it Modified Thayer-Martin (MTM) Medium. Martin and Lewis improved selectivity of MTM by increasing the concentration of Vancomycin and replacing Nystatin with Anisomycin for greater inhibition of yeasts, known as Martin Lewis (ML) Agar.

Typical Formulation

Enzymatic Digest of Casein	7.5 g/L
Enzymatic Digest of Animal Tissue	7.5 g/L
Corn Starch	1.0 g/L
Dipotassium Phosphate	4.0 g/L
Monopotassium Phosphate	1.0 g/L
Sodium Chloride	5.0 g/L
Agar	10.0 g/L

Supplements
Hemoglobin Solution, 2%, 100 mL
Growth Enrichment, 2 mL
Antimicrobials, if required

Final pH: 7.2 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precautions
Refer to SDS

Preparation, Double Strength
1. Suspend 7.2 g of the medium in 100 mL of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes. Cool to 45 – 50°C.
4. Prepare 100 mL of a 2% hemoglobin solution and autoclave at 121°C for 15 minutes.
5. Cool to 45 - 50°C and aseptically add to the molten GC Agar II.
6. Add 2 mL of growth enrichment. Add antimicrobials, if desired. Mix thoroughly and dispense.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and light beige.

Prepared Appearance: Prepared GC Agar II supplemented as Chocolate Agar is opaque and brown.

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Expected Cultural Response: Cultural response on Chocolate Agar incubated at 35 ± 2°C aerobically or under 7 – 10% CO_2, as appropriate, and examined for growth after 18 – 24 hours.

Microorganism	Approx. Inoculum (CFU)	Expected Growth
Haemophilus influenza ATCC® 10211	10 - 300	Good to excellent
Neisseria gonorrhoeae ATCC® 43070	10 - 300	Good to excellent
Neisseria meningitidis ATCC® 13090	10 - 300	Good to excellent
Streptococcus agalactiae ATCC® 13813	10 - 300	Good to excellent
Streptococcus pneumoniae ATCC® 6303	10 - 300	Good to excellent

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

For a complete discussion on the isolation and identification of *Neisseria* spp. and *Haemophilus* spp. consult procedures outlined in the references.

Results

Refer to appropriate references and procedures for results.

Expiration

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitation of the Procedure

Although certain diagnostic tests may be performed directly on GC Agar II, biochemical and immunological testing using pure cultures are recommended for complete identification.

Storage

Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

References

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8. Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Yolken (eds.). 1995. Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.

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