GC Agar (NCM0045)

Intended Use
GC Agar is used with lysed blood and other supplements for the isolation and cultivation of *Neisseria gonorrhoeae* and other fastidious organisms. GC Agar is not intended for use in the diagnosis of disease or other conditions in humans.

Description
A nutritious agar base described by Thayer and Martin for the isolation of *Neisseria gonorrhoeae*. The rich peptone mixture is enhanced by the use of corn starch to absorb toxic metabolites and a buffering system is used to maintain neutral pH. The medium is made selective by the use of various antibiotic cocktails. Thayer and Martin originally recommended the use of vancomycin, colistin and nystatin and the addition of trimethoprim which is useful in preventing the swarming of proteus. More recently the emergence of vancomycin sensitive gonococci has made the selective agents (lincomycin, colistin, amphotericin, trimethoprim (X070 LCAT) the combination of choice. Enrichment of the base is usually by the addition of lysed blood. Alternatively, chocolated blood or hemoglobin powder and Thayer and Martin's mixture of vitamins, amino acids and coenzymes can be used. GC Growth Supplement (X271) can be added to this medium to aid in the isolation of *Neisseria* spp.

Typical Formulation

Peptone	15.0 g/L
Corn Starch	1.0 g/L
Sodium Chloride	5.0 g/L
Dipotassium Hydrogen Phosphate	4.0 g/L
Potassium Dihydrogen Phosphate	1.0 g/L
Agar	10.0 g/L

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

Supplements
X070 – L.C.A.T Selective Supplement
X271 – GC Growth Supplement

Precaution
Refer to SDS

Preparation
1. Suspend 36 grams of the medium in 1 liter 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.
4. Cool to 45-50°C and aseptically add 5-7% of lysed blood and 2 vials of X070 supplement plus optional GC Growth Supplement X271.
5. Mix well and dispense.

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

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

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Prepared Appearance: Prepared GC Agar supplemented with 5% lysed defibrinated horse blood and X070 L.C.A.T selective supplement is opaque and red.

Expected Cultural Response: Cultural response on GC Agar incubated at 37 ± 1°C aerobically or under 5 – 10% CO_2, as appropriate, and examined for growth after 18 – 48 hours.

Microorganism	Approx. Inoculum (CFU)	Expected Recovery
Haemophilus influenzae ATCC® 10211	50-200	> 70%
Neisseria gonorrhoeae ATCC® 43070	50-200	> 70%
Neisseria gonorrhoeae ATCC® 19424	50-200	> 70%
Neisseria meningitidis ATCC® 13090	50-200	> 70%
Escherichia coli ATCC® 25922	$>10^4$	Partial to Complete Inhibition
Pseudomonas aeruginosa ATCC® 27853	$>10^4$	Partial to Complete Inhibition
Staphylococcus aureus ATCC® 25923	$>10^4$	Partial to Complete Inhibition

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

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, biochemical and immunological testing using pure cultures are recommended for complete identification.

Storage
Store dehydrated culture media at 2 – 30°C away from direct sunlight. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

References
1. Young, H. 1978. Cultural diagnoses of gonorrhoea with modified New York City (MNYC) medium. Brit. Journ. Ven. Dis. 54: 36-40:
2. Thayer, J. D. and Martin, J. E. 1966. Improved medium selective for the cultivation of *N. gonorrhoeae* and *N. Meningitidis:* Public Health rep. 81: 559-562.

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