G. C. Agar Base

Intended Use
G. C. Agar Base, with various additives which is used to isolate and cultivate Gonococci and other fastidious organisms.

Summary
Majority of gonococcal infections are uncomplicated lower genital tract infection caused by direct infection of the columnar epithelium of mucosal membranes. *Neisseria gonorrhoeae* is the causative agent of gonococcal infections. Most *Neisseria* strains have complex growth requirements; some strains may be exquisitely sensitive to fatty acids, necessitating the incorporation of soluble starch in the growth media. Johnston developed a medium that could obtain the growth of *Neisseria* within 24 hours rather than the usual 48 hours. This medium was later modified by Carpenter and Morton, by the addition of haemoglobin. Thayer and Martin improved the selectivity of G. C. Medium by the incorporation of the antibiotics colistin, Vancomycin and Nystatin (VCN). An additional antibiotic trimethoprim lactate was later coupled with VCN to further increase the selectivity of the medium. For the cultivation of fastidious organisms, the medium should be supplemented with essential growth factors supplied predominantly by yeast extract. X-factor needed for the growth of fastidious *Haemophilus* species is provided by haemoglobin.

Principle
Peptone provides nitrogen, vitamins and amino acids. Corn starch absorbs and neutralizes the toxic metabolites and phosphates buffers the medium and prevents change in the pH due to amine production that can affect the survival of the organisms. Sodium chloride maintains the osmotic balance.
Chocolate agar is prepared from G.C. Agar Base with the addition of 2% haemoglobin. Haemoglobin provides hemin, which enhances growth of *Neisseria*. The medium can also be made selective with the addition of selective supplements.

Formula*

Ingredients	**g/L**
Peptone Special	15.0
Sodium Chloride	5.0
Dipotassium Phosphate	4.0
Monopotassium Phosphate	1.0
Corn Starch	1.0
Agar	10.0
Final pH (at 25°C)	7.2 ± 0.2

*Adjusted to suit performance parameters

Storage and Stability
Store dehydrated medium below 30°C in tightly closed container and the prepared medium at 2ºC-8°C. Avoid freezing and overheating. Use before expiry date on the label. Once opened keep powdered medium closed to avoid hydration.

Type of Specimen
Clinical samples: Blood, respiratory exudates

Specimen Collection and Handling
Ensure that all samples are properly labelled.
Follow appropriate techniques for handling samples as per established guidelines.
Some samples may require special handling, such as immediate refrigeration or protection from light, follow the standard procedure.
The samples must be stored and tested within the permissible time duration.
After use, contaminated materials must be sterilized by autoclaving before discarding.

Directions

1. Suspend 18.00 g of the powder in 235 mL purified / distilled water.
2. Boil with frequent agitation to dissolve the powder completely.
3. Sterilize by autoclaving at 121°C (15 psi) for 15 minutes as per validated cycle.
4. Cool to 45°C-50°C and aseptically add separately prepared hemoglobin (250 mL sterile 2% solution) and G.C. Supplement (204070340005)
5. Mix well and pour into sterile petridishes.

Quality Control

Dehydrated appearance: Yellow coloured, homogenous, free flowing powder.
Prepared Appearance: Basal medium: Light yellow coloured, slightly opalescent gel forms in petridishes.
With addition of haemoglobin: Chocolate brown coloured, opaque gel.
Growth Promotion Test: Growth promotion is carried out in accordance with the harmonized method of USP/EP/JP/IP and growth is after an incubation at 30°C-35°C for 48 hours under anaerobic condition.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test, inoculating ≤100 cfu of appropriate microorganism at 30°C-35°C for 48 hours under anaerobic condition.

Organism (ATCC)	**Growth**
Neisseria gonorrhoeae (49226)	Good
Haemophilus influenzae (10211)	Good

Note: For Good growth - Growth obtained on test media should not differ by a factor greater than 2 from calculated value for a standardized inoculum.

Performance and Evaluation

Performance of the product is dependent on following parameters as per product label claim:

1. Directions
2. Storage
3. Expiry

Precautions/Limitations

1. Avoid cotton wool for specimen collection.
2. Any suspected *Neisseria* containing specimen should be inoculated onto a primary isolation medium immediately on collection. If this is not possible, then *N. gonorrhea* swabs are better held at 40°C for not more than 3 hours.
3. It is seen that the usual transport media are not reliable for *N. gonorrhea*. Inoculation of the sample onto the surface of the medium slants is preferable.
4. Humidity is essential for the successful isolation of Gonococci. If the plates look dry, moisten the surface with a few drops of sterile broth and allow it to soak into the agar before inoculation. Do not flood the plate with broth. Place damp gauze or paper towels in the CO_2 chamber before inoculation.
5. Agar varies widely in their toxicity for *N. gonorrhea* and may be a major factor in preventing the growth of Gonococci on solid media.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

1. Murray P. R., Baron E. J., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Eds.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C
2. Johnston J., 1945, J. Vener. Dis. Inform., 26:239.
3. Carpenter C. M. and Morton H. E., 1947, Proc. N.Y. State Assoc. Public Hlth. Lab., 27:58.
4. Thayer J. D. and Martin J. E., 1964, Public Health Rep., 79:49
5. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product description	Pack Size
201070010100	Dehydrated Culture Media	100 g
201070010500	Dehydrated Culture Media	500 g