PRODUCT INFORMATION AND QUALITY CONTROL SHEET
JEMBEC - Modified Thayer Martin Agar

I. INTENDED USE
Modified Thayer Martin Agar is an enriched and selective medium used for the isolation of pathogenic *Neisseria* species from specimens containing mixed microbiologic flora.

II. SUMMARY AND EXPLANATION
Thayer-Martin Selective Agar was developed for the isolation of *N. gonorrhoeae* and *N. meningitidis* from specimens containing mixed flora taken from the throat, vagina, rectum and urethra.[1,2] Thayer-Martin consists of a chocolate agar base to which vancomycin, colistin and nystatin have been added to minimize overgrowth by contaminants, suppress the growth of saprophytic *Neisseria* sp., and enhance the growth of pathogenic *Neisseria.*

Martin, et. al, modified Thayer-Martin Agar by incorporating trimethoprim to produce Modified Thayer-Martin (MTM) medium. Trimethoprim suppresses the growth of swarming *Proteus* sp. thereby increasing the number of gonococci isolated from clinical specimens.[3]

III. PRINCIPLES OF THE PROCEDURE
Modified Thayer Martin Agar consists of a chocolate GC agar base, bovine hemoglobin, and a chemically defined enrichment. The GC base provides nitrogenous nutrients, phosphate buffers, and cornstarch to neutralize toxic fatty acids. Hemoglobin provides X factor (hemin). Chemically defined enrichments provide V factor (nicotinamide adenine dinucleotide-NAD), vitamins, amino acids, coenzymes, dextrose, ferric ions and other growth factors necessary for optimal growth of pathogenic *Neisseria* species.

The antimicrobial agents vancomycin, colistin, nystatin and trimethoprim are incorporated to suppress competing normal flora organisms. Vancomycin actively inhibits gram positive organisms, colistin suppresses gram negative organisms other than *Proteus* spp., nystatin is effective against fungi and trimethoprim suppresses swarming *Proteus* species.

IV. TYPICAL FORMULA AND APPEARANCE
Appearance = opaque, chocolate brown
(Approximate formula* per liter of processed water)

Pancreatic Digest of Casein	7.5g
Selected Meat Peptone	7.5
Corn Starch	1.0
Dipotassium Phosphate	4.0
Monopotassium Phosphate	1.0
Sodium Chloride	5.0
Agar	15.0
Hemoglobin	10.0
Chocolate Enrichment Solution	10 ml
VCNT Inhibitor Solution	10 ml

*adjusted and/or supplemented to meet performance criteria.

V. USER QUALITY CONTROL
NCCLS CONTROL ORGANISMS (ATCC STRAINS)

**Neisseria gonorrhoeae* (ATCC 43069)	Growth(small, grayish-white to cololess, mucoid colonies)
**Staphylococcus epidermidis* (ATCC 12228)	Inhibition (partial)
Neisseria meningitidis (ATCC 13090)	Growth (medium to large, blue-grey, mucoid colonies)
Proteus mirabilis (ATCC 43071)	Inhibition (partial)
Neisseria sicca (ATCC 9913)	Inhibition (complete)
Candida albicans (ATCC 60193)	Inhibition (partial)
Escherichia coli (ATCC 25922)	Inhibition (partial)

*Recommended organism strains for User Quality Control.

VI. PRECAUTIONS
This product is for IN VITRO diagnostic use only. Culture specimens may contain microorganisms that may be potentially infectious to the user. Strict adherence to aseptic techniques and established precautions against microbiological hazards should be followed throughout the procedure. Carefully dispose of all items which contact patient specimens or isolated bacteria.

VII. STORAGE/SHELF LIFE
Plated media should be stored at 2-8^{0}C (36-46^{0}F), media side up, in the unopened or resealed package protected from light. DO NOT FREEZE OR EXPOSE TO HIGH TEMPERATURES. Allow unopened plates to warm to room temperature prior to inoculation. Prior to and during inoculation procedures, plates should be handled in a manner that minimizes product exposure to the environment. Product which has exceeded the assigned expiration date noted on the label should not be used.

Do not use plates that exhibit evidence of drying, cracking, discoloration, microbial contamination or any other signs of deterioration. The presence of excessive condensate may indicate plates which have been damaged by exposure to temperature extremes.

VIII. SPECIMEN COLLECTION
The quality of culture results depends primarily on the adequacy and condition of the specimen submitted for examination. Proper specimen collection techniques must be followed to ensure the most accurate culture results. Sterile swabs and collection containers should be used. Plates should be inoculated promptly after specimen collection. If a delay in inoculation is unavoidable, transport medium should be employed. Specimens should be collected prior to the initiation of antimicrobial therapy. Detailed information on proper specimen collection may be obtained from microbiology reference materials.[4,5]

IX. MATERIALS PROVIDED
Modified Thayer Martin Agar Jembec Plates – 10 each/sleeve
10 CO_2 Tablets
10 zip lock bags

X. MATERIALS REQUIRED BUT NOT PROVIDED
Incubator maintaining 35-37^{0}C.
Ancillary culture media, reagents and laboratory equipment as required.

XI. PROCEDURE
To optimize recovery from clinical specimens, it is recommended that the media be inoculated as follows:
1. Remove Jembec Plate from refrigerated storage and allow to warm to room temperature. Agar surface should be free of excessive moisture which could cause confluent organism growth. Label plate with specimen identification number and inoculation date.

2. Roll the specimen swab, or swab immersed in purulent material, over the plate to ensure contact with all swab surfaces.
(See Diagram 1 below)

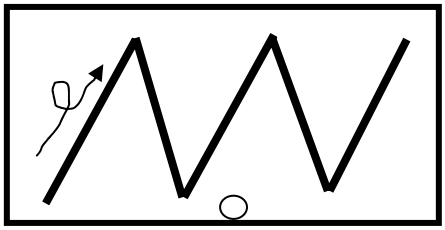

Diagram 1

3. Using a sterile inoculating loop, streak in a zig-zag fashion over swabbed area and continue over the entire plate surface for isolation of colonies. Avoid applying excess pressure to the agar surface during inoculation to prevent gouging and splitting of the agar medium. (See Diagram 2.)

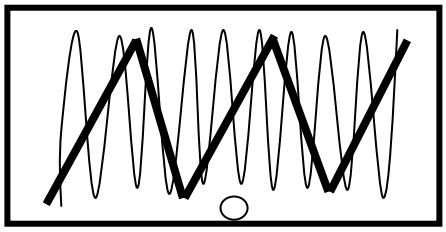

Diagram 2

4. Place one CO_2 generating tablet into the Jembec plate's well. Close the plate and place into a zip lock bag and seal.
Note: Do not add water to the tablet.

5. Incubate the plates at 35-37^{0}C for 18-72 hours. Note: Pathogens may be detected as early as 18 hours however, it is recommended that inoculated plates be incubated for a total of 72 hours before a negative interpretation can be made.

6. Remove the Jembec plates from the incubator. (Note: The CO_2 atmosphere within the zip lock bag will dissipate upon opening the bag. Examination of culture results prior to detection of organism growth or 72 hours of incubation may be accomplished by; (1) examining the plate through the unopened bag or (2) using an additional CO_2 tablet upon re-incubating the opened and examined culture plate.

7. Refer to microbiolgical texts for identification of isolates.

XIII. LIMITATIONS

Note: Pathogenic *Neisseria* species, especially *N. gonorrhoeae*, are fastidious organisms that exhibit sensitivity to desiccation and temperature extremes. The ability to detect microorganisms by culture techniques can be affected by the following factors: improper specimen collection, storage and inoculation, initiation of antiinfective therapy prior to specimen collection, improper culture incubation temperatures and atmospheres, improper length of culture incubation, and improper storage and handling of culture media.

Some strains of *N. gonorrhoeae,* inhibited by vancomycin and trimethoprim lactate, have been reported. Certain oxidase positive, gram-negative bacilli will grow on selective media and produce colonies resembling *N. gonorrhoeae*. Selective media for pathogenic *Neisseria* may be inhibitory to other pathogenic bacteria, e.g., *Haemophilus*. Refer to microbiology reference texts for information on typical colony morphology.

XIV. REFERENCES

1. Martin, J.E., T.E. Billings, J.F. Hackney, and J.D. Thayer. 1967. Primary isolation of *N. gonorrhoeae* with a new commercial medium. Public Health Rep. 82:361-363.
2. Thayer, J.D. and J.E. Martin. 1966. Improved medium selective for cultivation of *N. gonorrhoeae* and *N. meningitidis.* Public Health Rep. 81:559-562.
3. Seth, A. 1970. Use of trimethoprim to prevent overgrowth by *Proteus* in the cultivation of *N. gonorrhoeae.* Brit. Journ. of Vener. Dis. 46:201-202.
4. Martin, J.E., Jr., and J.S. Lewis. 1977. Anisomycin: improved antimycotic activity in modified Thayer-Martin Medium. Public Health Lab. 35:53-62.
5. Kellogg, D.S. Jr., K.K. Holmes, and G.A. Hill. 1976. Cumitech 4, Laboratory Diagnosis of Gonorrhea. Coordinating ed., S. Marcus, and J.C. Sherris. American Society for Microbiology, Washington, D.C.
6. Eschenbach, D., H.M. Pollock, J. Schachter. 1983. Cumitech 17, Laboratory Diagnosis of Female Genital Tract Infections.

USER QUALITY CONTROL PROCEDURES AND INFORMATION

QUALITY CONTROL

The following incoming inspection procedures must be performed for each batch (batch = same lot, same shipment) of culture media received in the laboratory:

Inspect plates according to instructions contained in Section VI "STORAGE/SHELF LIFE")

This media is not exempt from end user quality control testing relating to media growth characteristics according to NCCLS Document M22A -*Quality Assurance for Commercially Prepared Microbiological Culture Media.* Quality control organisms may be ordered through an authorized distributor. The organisms are listed in "USER QUALITY CONTROL".

Note. Notify Technical Service at 800-638-2625 immediately if media does not meet the inspection criteria.

TECHNICAL SERVICE

HealthLink provides a toll free technical service line at 800-638-2625 for assistance with product usage. To have technical questions answered, please call between the hours of 9:00 AM to 5:00 PM, EST.

HealthLink
3611 St. Johns Bluff Rd. So. Ste. 1
Jacksonville, FL 32224
1-800-638-2625

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