Thayer Martin Agar (Modified) Procedure

Principle

Thayer Martin Agar (Modified) is a solid medium used commonly for the primary isolation of *Neisseria gonorrhoeae* from mixed specimens. The agar can also be utilized for primary isolation of *Neisseria meningitidis* from mixed specimens. The agar is classified as a selective enrichment agar. Enrichments added to this medium include both X and V factors. The modified formulation of the Thayer Martin agar includes more agar to help prevent swarming Proteus. The agar contains antibiotics to inhibit the growth of normal flora, non-pathogenic *Neisseria* species and most other organisms. *Neisseria gonorrhoeae*, *Neisseria meningitidis*, and *Neisseria lactamica* will grow on the agar. *Neisseria lactamica* is usually non-pathogenic.

The antibiotics in the agar include: vancomycin to inhibit gram-positive organisms, nystatin to inhibit the growth of fungi, colistin to inhibit most gram-negative rods, and trimethoprim helps to prevent *Proteus* from swarming.

Specimen Collection and Preparation

The original swab specimen should be inoculated at bedside to the plate by rolling the swab in a large "Z" pattern to sufficiently transfer specimen. The plate should be received in the lab within 2 hours. If direct inoculation at bedside is not available the lab should received the specimen within 2 hours for inoculation to media.
If transport will be delayed a Carbon Dioxide transport system should be used. An agar version called Jembec is available that includes a Carbon Dioxide generations system within the agar. If using a Jembec plate: Using forceps, remove the CO2 tablet from the foil pouch and plate in the well. Place plate in environmental maintenance pouch, seal and secure. Transport to lab.

Reagents

Thayer Martin Agar (Modified)	Inoculating loop
Incinerator	Aerobic swab collection system

Storage

1. Store Thayer Martin agar (Modified) at 2-8°C and bring to room temperature before use.

Quality Control

Quality control should be performed per lot/shipment date.

Neisseria gonorrhoeae ATCC 43069	Expected results:	Growth
Proteus mirabilis ATCC 43071	Expected results:	Inhibition (partial)
Staphylococcus epidermidis ATCC 12228	Expected results:	Inhibition (partial)

Procedure

1. Inoculate the original swab specimen to the plate by rolling the swab in a large "Z" pattern. This will sufficiently transfer the specimen.
2. Cross-streak the plate using a sterile wire loop.
3. Incubate in 3-7% CO2 at 35-37°C and examine at 24 hours.
4. Isolates should be gram stained. If gram-negative diplococci are present colonies should be tested for oxidase production. Suspicious colonies should be identified.
5. If no growth is observed, re-incubate plate for up to 72 hours.
6. **Or, inoculate isolated colonies from culture to plate and observed for growth at 24 hours after incubation in 3-7% CO2 at 35-37°C.**

References:

1. Remel package insert, IFU 1880, Lenexa, KS. September 2003
2. Mahon, C.R. and Manuselis, G., Textbook of Diagnostic Microbiology, 3rd ED., W.B. Saunders, 2007.