CATARRHALIS SELECTIVE MEDIUM

INTENDED USE
Remel Catarrhalis Selective Medium is a solid medium recommended for use in the primary isolation of *Moraxella catarrhalis* from clinical specimens containing mixed flora.

SUMMARY AND EXPLANATION
Moraxella catarrhalis is now recognized as a significant pathogen associated with upper and lower respiratory tract infection.[1,2] Timely isolation and identification of this organism is important because most strains produce beta-lactamase and are resistant to penicillin and ampicillin. Isolation of *M. catarrhalis* from respiratory specimens is complicated due to the high numbers of normal flora. Several selective and differential media formulations for *M. catarrhalis* have been proposed.[3] These formulations allowed for growth of *Neisseria* spp. which made recognition and differentiation of *M. catarrhalis* difficult. In 1988, Vaneechoutte et al. developed a highly selective medium which significantly increased the isolation of *M. catarrhalis* by decreasing the recovery of normal respiratory flora, especially *Neisseria* spp.[4]

PRINCIPLE
Casein and soy peptones are a source of nitrogen, amino acids, and peptides. Sheep blood supplies essential growth factors. Amphotericin B, trimethoprim, vancomycin, and sodium acetazolamide suppress the growth of normal respiratory flora. Amphotericin B is active against yeast and filamentous fungi. Vancomycin is active primarily against gram-positive bacteria, while trimethoprim inhibits gram-negative organisms. Sodium acetazolamide (a synthetic sulfonamide) is a potent inhibitor of carbonic anhydrase, a rare bacterial enzyme commonly produced by *Neisseria* spp.

REAGENTS (CLASSICAL FORMULA)*

Casein Peptone	15.0 g	Trimethoprim	5.0 mg
Soy Peptone	5.0 g	Amphotericin B	2.0 mg
Sodium Chloride	5.0 g	Sheep Blood	5 %
Sodium Acetazolamide	10.0 mg	Agar	15.0 g
Vancomycin	10.0 mg	Demineralized Water	1000.0 ml

pH 7.3 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PROCEDURE
1. Inoculate and streak the specimen as soon as possible after it is received in the laboratory.
2. If a swab specimen is received, roll the swab over a small area of the agar surface and streak for isolation.
3. Incubate plate aerobically (not in CO_2) at 33-37°C for 24-48 hours.
4. Examine plate for typical colony morphology. *M. catarrhalis* forms a “hockey puck”-like colony which may be nudged across the plate intact with a bacteriological loop.[2]

QUALITY CONTROL
All lot numbers of Catarrhalis Selective Medium have been tested using the following quality control organisms and have been found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, patient results should not be reported.

CONTROL	INCUBATION	RESULTS
Moraxella catarrhalis ATCC®25238	Aerobic, up to 48 h @ 33-37°C	Good growth
Candida albicans ATCC®10231	Aerobic, up to 48 h @ 33-37°C	Inhibition (marked to complete)
Neisseria sicca ATCC®9913	Aerobic, up to 48 h @ 33-37°C	Inhibition (marked to complete)
Proteus mirabilis ATCC®12453	Aerobic, up to 48 h @ 33-37°C	Inhibition (marked to complete)
Staphylococcus aureus ATCC®25923	Aerobic, up to 48 h @ 33-37°C	Inhibition (marked to complete)

PERFORMANCE CHARACTERISTICS
In a collaborative study, 792 sputum specimens were plated on routine primary isolation media and Catarrhalis Selective Medium. *M. catarrhalis* was isolated from 107 (14%) sputum specimens; of these, 34% were recovered only on Catarrhalis Selective Medium.[5]

LIMITATIONS
1. Other miscellaneous organisms, including pseudomonads, may grow on this medium. It is important to accurately identify colonies morphologically typical of *M. catarrhalis* with a Gram stain, oxidase, and traditional carbohydrate or enzyme tests.
2. This product is only part of the overall scheme for isolation and identification of *M. catarrhalis*. Further biochemical testing is required for identification of the test isolate. Consult appropriate references.[2,6]
3. The inhibitory activity of sodium acetazolamide against carbonic anhydrase can be overcome by a carbon dioxide atmosphere.[4]

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Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, specimen collection, storage and transportation, materials required, quality control, and limitations.

IFU 1575, Revised September 20, 2007 Printed in U.S.A.

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