ATS MEDIUM

INTENDED USE
Remel ATS Medium is a solid medium recommended for use in qualitative procedures for the isolation and cultivation of *Mycobacterium* spp.

SUMMARY AND EXPLANATION
Woodruff et al. developed ATS Medium based on the laboratory procedures of the American Trudeau Society (also referred to as the American Thoracic Society).[1] ATS Medium provides early detection of mycobacteria, especially *Mycobacterium tuberculosis*, from specimens that are less likely to be contaminated with other bacteria (e.g., cerebrospinal fluid, pleural fluid, and tissue biopsies).[2] Cummings and Medlar published evaluations of ATS Medium.[3,4]

PRINCIPLE
This egg-based medium, when heated, coagulates and provides a solid surface for isolation and cultivation of *Mycobacterium* spp. The albumin from the egg protects the tubercle bacilli from toxic agents. Potato flour and glycerol provide carbon and energy sources for mycobacteria, especially the human type tubercle bacillus. Malachite green is a selective agent which partially inhibits contaminating bacteria.

REAGENTS (CLASSICAL FORMULA)*
Potato Flour	20.0 g	Egg Yolk Emulsion	5000.0 ml
Malachite Green	0.2 g	Glycerol	10.0 ml
		Demineralized Water	490.0 ml

pH 6.75 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PROCEDURE
Note: Follow established laboratory guidelines and safety procedures when processing specimens for acid-fast cultures. Inoculate media according to test procedures recommended by the Centers for Disease Control and Prevention (CDC) or consult appropriate references.[5,6]

1. After inoculation, allow media to stand at room temperature for several hours or until the inoculum dries or is absorbed.
2. Protect tubes from light and incubate at 35-37°C in an atmosphere of 5-10% CO_2. It is advisable to incubate media in a slanted position for at least one week to allow even distribution and absorption of the inoculum into the media. Caps should be loosened for the first week to permit the circulation of CO_2 to initiate growth. Thereafter, tighten caps to prevent dehydration of media.
3. Examine cultures within 5-7 days after inoculation and once a week thereafter for a minimum of 8 weeks. Prolonged incubation up to 10-12 weeks or more may be necessary in selected cases or if the original smear was positive and the culture remains negative at 8 weeks.
4. Observe cultures for growth rate, pigment production, and colony morphology.
5. Perform an acid-fast stain from the colony to confirm acid-fastness of isolate.
6. Initiate identification tests according to established laboratory procedures. Consult appropriate references when necessary.[5,6]

QUALITY CONTROL
All lot numbers of ATS 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
Mycobacterium fortuitum ATCC® 6841	CO_2, up to 21 days @ 33-37°C	Growth
Mycobacterium intracellulare ATCC® 13950	CO_2, up to 21 days @ 33-37°C	Growth
Mycobacterium kansasii ATCC® 12478	CO_2, up to 21 days @ 33-37°C	Growth
Mycobacterium scrofulaceum ATCC® 19981	CO_2, up to 21 days @ 33-37°C	Growth
Mycobacterium tuberculosis ATCC® 25177	CO_2, up to 21 days @ 33-37°C	Growth

LIMITATIONS
1. ATS Medium is susceptible to proteolytic contaminating organisms and requires a decontaminated specimen.[2]
2. Malachite green is a photosensitive dye. Media prepared with malachite green must be stored and incubated in the dark.[2]

BIBLIOGRAPHY

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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.

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