MUELLER HINTON BROTH w/ and w/o CATIONS

INTENDED USE
Remel Mueller Hinton Broth is a liquid medium recommended for use in qualitative procedures for the cultivation of a wide variety of microorganisms.

SUMMARY AND EXPLANATION
This medium was originally formulated by Mueller and Hinton as a protein-free medium for the purpose of isolating pathogenic *Neisseria*.[1] It was later used to test gonococci and other organisms for susceptibility to sulfonamides.[2,3]

PRINCIPLE
Mueller Hinton Broth is prepared with beef extract and acid digest of casein which supply amino acids, nitrogenous substances, and other nutrients necessary for bacterial growth. Starch serves as a growth factor and a protective colloid which neutralizes toxic products that may form during the growth of bacteria. Calcium and magnesium are divalent cations which enrich the medium and help to support the growth of fastidious microorganisms.

REAGENTS (CLASSICAL FORMULA)*
Acid Digest of Casein	17.5 g	Soluble Starch	1.5 g
Beef Extract	2.0 g	Demineralized Water	1000.0 ml

pH 7.3 ± 0.1 @ 25°C

The following optional ingredients are available per liter of medium:

Calcium	20.0-25.0 mg	Magnesium	10.0-12.5 mg

*Adjusted as required to meet performance standards.

PROCEDURE
1. Inoculate the medium as soon as possible after the specimen is received in the laboratory. Swab specimens may be inserted into the broth after inoculation of plated medium.
2. For liquid specimens, aseptically transfer a loopful of the specimen to the broth medium.
3. Incubate the tube in appropriate atmospheric conditions at 33-37°C.
4. Examine for growth after 18-24 hours or longer, as required.

QUALITY CONTROL
All lot numbers of Mueller Hinton Broth w/ and w/o Cations 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
Escherichia coli ATCC® 25922	Ambient, 18-24 h @ 33-37°C	Growth
Pseudomonas aeruginosa ATCC® 27853	Ambient, 18-24 h @ 33-37°C	Growth
Staphylococcus aureus ATCC® 25923	Ambient, 18-24 h @ 33-37°C	Growth

BIBLIOGRAPHY

1. Mueller, J.H. and J. Hinton. 1941. Proc. Soc. Exp. Biol. Med. 48:330-333.
2. Washington, J.A. 1985. Laboratory Procedures in Clinical Microbiology. 2nd ed. Springer-Verdag, New York, NY.
3. MacFaddin, J.F. 1985. Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria. Vol.1. Williams & Wilkins, Baltimore, MD.

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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