



PRODUCT SPECIFICATION SHEET

Mueller Hinton Broth (DM173)

Intended Use

Mueller Hinton Broth (DM173) is recommended to determine the susceptibility of bacteria to Sulphonamides by the tube dilution method.

Product Summary and Explanation

The Mueller Hinton formulation was originally developed as a simple, transparent agar medium for the cultivation of pathogenic *Neisseria* species.⁽¹⁾ Mueller Hinton Broth is used along with Mueller Hinton Agar for determining minimal inhibitory concentrations (MICs) and to carry out the sensitivity testing of a great number of antibiotics. Mueller Hinton medium is recommended by FDA, World Health Organization and NCCLS for testing most commonly encountered aerobic and facultative anaerobic bacteria in food and clinical material.^(2, 3) The medium shows good batch-to-batch reproducibility, it is low in sulfonamide, trimethoprim, and tetracycline inhibitors and yields satisfactory growth of most non-fastidious pathogens. Other media were subsequently developed that replaced the use of Mueller Hinton Agar for the cultivation of pathogenic *Neisseria* species, but it became widely used in the determination of sulfonamide resistance of gonococci and other organisms.

Principles of the Procedure

Mueller Hinton Broth contains beef infusion and casein acid hydrolysate which provide nitrogenous compounds, vitamins, carbon, sulphur and amino acids essential for growth of organisms. Starch acts as a protective colloid to absorb any toxic metabolites produced. For testing streptococci, it is recommended to supplement the medium with 5% defibrinated sheep or horse blood is recommended. Starch hydrolysis yields dextrose, which serves as a source of energy. These ingredients are selected for low thymine and thymidine content as determined by MIC values for *Enterococcus faecalis* with sulfamethoxazoletrimethoprim (SXT). Calcium and magnesium ion concentrations are adjusted to provide the amounts recommended by CLSI to give the correct MIC values with aminoglycosides and *Pseudomonas aeruginosa*.

Formula / Liter

Ingredients	Gms / Liter
Beef, infusion from	300.00
Casein acid hydrolysate	17.50
Starch	1.50
Final pH: 7.4 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 21 grams of the medium in one liter of distilled water.
2. Heat if necessary, to dissolve the medium completely.
3. Mix well and dispense into test tubes.
4. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.

Quality Control Specifications





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Dehydrated Appearance	Cream to yellow homogeneous free flowing powder
Prepared Medium	Light amber coloured clear solution in tubes
Reaction of 2.1% Solution	pH : 7.4 ± 0.2 at 25°C
Gel Strength	Not Applicable

Expected Cultural Response: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Sr. No.	Organisms	Results to be achieved	
		Inoculum (CFU)	Growth
1.	<i>Escherichia coli ATCC 25922</i>	50 - 100	good-luxuriant
2.	<i>Haemophilus influenza ATCC 49247</i>	50 - 100	good-luxuriant (in Mueller Hinton Chocolate Broth)
3.	<i>Neisseria gonorrhoeae ATCC 49226</i>	50 - 100	good-luxuriant
4.	<i>Pseudomonas aeruginosa ATCC 27853</i>	50 - 100	good-luxuriant
5.	<i>Staphylococcus aureus ATCC 25923</i>	50 - 100	good-luxuriant
6.	<i>Enterococcus faecalis ATCC 19433</i>	50 - 100	good-luxuriant
7.	<i>Streptococcus pneumonia ATCC 6305</i>	50 - 100	good-luxuriant (in Mueller Hinton Chocolate Broth)

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer appropriate references for standard test procedures.

Results

Refer appropriate references and procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : Mueller Hinton Broth

Product Code : DM173

Available Pack sizes : 100gm/ 500gm

References

1. Mueller J. H. and Hinton J., 1941, Proc. Soc. Exp. Biol. Med., 48:330.





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2. National Committee for Clinical Laboratory Standards, 2000, Approved Standard: M7-A5. Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria that grow aerobically, 5th Ed., NCCLS, Wayne, Pa.
3. Murray P. R., Baron J. H., Pfaller M. A., Tenover J. C. and Tenover J. C., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C.

Further Information

For further information please contact your local MICROMASTER Representative.



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