

Mueller Hinton Broth

Mueller Hinton Broth is recommended to determine the susceptibility of bacteria to sulphonamides by the tube dilution method. Also used for primary isolation of gonococci and meningococci.

REF: BS.1/MB01.100.0100	100 Gram	REF: BS.1/MB01.250.0250	250 Gram
REF: BS.1/MB01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

The Mueller Hinton formulation was originally developed as a simple, transparent agar medium for the cultivation of pathogenic *Neisseria* species (2). 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. Mueller Hinton Broth is recommended for dilution antimicrobial susceptibility testing of all species of most commonly encountered aerobic and facultatively anaerobic bacteria (3, 1).

METHOD PRINCIPLE

Beef infusion and casein acid hydrolysate provide nitrogenous compounds, carbon, sulphur and other essential nutrients. Starch acts as a protective colloid against toxic substances present in the medium. 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* (3).

MEDIA COMPOSITION

Item	Formula per liter of medium
- Beef infusion	2
- Casein hydrolysate	17.5
- Starch	1.5

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environmental Contamination.

S61: avoid release in environment.

For further information, refer to the Mueller Hinton Broth material safety data sheet.

STORAGE AND STABILITY

BioScien Mueller Hinton Broth dehydrated media are stable until expiration date stated on label when properly stored 10-30°C. The prepared medium should be stored at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Final pH 7.3 ± 0.2 at 25°C

MEDIA PREPARATION

Suspend 21 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Mix well and dispense into tubes as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Note: It is suggested to boil the medium before autoclaving to avoid settling of starch at the bottom

Deterioration

The color of **BioScien** Mueller Hinton Broth is Cream to yellow homogeneous free flowing powder. If there are any physical changes, discard the medium.

The hydrated medium is Light amber coloured clear solution in tubes, media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

SPECIMEN COLLECTION AND PRESERVATION

Clinical samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile tubes
- Sterile loops
- Incubator

PERFORMANCE CHARACTERISTICS

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature

Cultural characteristics observed after an incubation at 30°C for 40-48 hours.

Test Organisms	Growth
<i>Escherichia coli</i> ATCC 25922	Good - Luxuriant
<i>Haemophilus influenzae</i> ATCC 49247	Good - Luxuriant
<i>Neisseria gonorrhoeae</i> ATCC 49226	Good - Luxuriant
<i>Pseudomonas aeruginosa</i> ATCC 27853	Good - Luxuriant
<i>Staphylococcus aureus</i> ATCC 25923	Good - Luxuriant
<i>Enterococcus faecalis</i> ATCC 19433	Good - Luxuriant
<i>Streptococcus pneumoniae</i> ATCC 6305	Good - Luxuriant

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact **BioScien** technical support.

REFERENCES

1. Green, S.R. and Gray, P.P. 1950, Wallerstein Lab. Communication 13,357.

SYMBOLS IN PRODUCT LABELLING	
IVD For in-vitro diagnostic use	 Number of <n> test in the pack
LOT Batch Code/Lot number	 Caution
REF Catalogue Number	 Do not use if package is damaged
 Temperature Limitation	 Consult Instruction for use
 Expiration Date	
 Manufactured by	