Micropro® - BMD Kit
Broth Microdilution Method

INTENDED USE
Micropro® - BMD Kit is intended for Antimicrobial Susceptibility Testing of pathogens using Broth Microdilution method and determination of the Minimum Inhibitory Concentration (MIC) for the chosen antibiotic.

PRINCIPLE
The Broth Microdilution method is used to measure the in vitro activity of an antimicrobial agent against a bacterial isolate. A sterile **Micropro®-BMD Strip** contains pre-coated two-fold dilution series of antimicrobial agents which is inoculated with Inoculum Broth containing standard number of test bacteria. After overnight incubation at 35°C, the MIC is determined by observing the lowest concentration of an antimicrobial agent which will inhibit visible growth of the bacterium. MICs obtained are interpreted as susceptible, intermediate, or resistant, based on the criteria listed in the CLSI standard.

WORKING PRINCIPLE
The working of **Micropro® - BMD Kit** is based on three basic steps:
a) Inoculum preparation (~ McFarland Standard 0.5 and Inoculum broth).
b) Select the required Micropro® - BMD strips and load the inoculum Broth.
c) Detection of MIC value based on growth in the wells.

STORAGE AND STABILITY
a) Store the **Micropro® - BMD Kit** as mentioned on respective carton / bottle packaging.
b) Avoid exposure to light.
c) The shelf life **Micropro® - BMD Kit** is as per expiry date mentioned on respective carton / bottle packaging.

MATERIAL REQUIRED BUT NOT PROVIDED WITH THE KIT
Sterile loops (Cat. No. 208191310100), sterile Normal Saline (Cat. No. 209140340001), Micropipette (200 µL), Microxpress® McFarland Reader (Cat no. 209131270001), Bacteriological Incubator at 35°C - 37°C, Marker Pens, Tissue Paper, 70% IPA, Bactericidal Handrub, Gloves and Masks.

Antibiotics list in Micropro® - BMD Susceptibility test Panel Kits:
1. Colistin
2. Colistin/ polymyxin B
3. Chloramphenicol
4. Ceftriaxone
5. Ceftazidime/Avibactam
6. Fosfomycin
7. Imipenem
8. Meropenem
9. Teicoplanin
10. Tigecycline
11. Vancomycin
12. Penicillin
13. Erythromycin
14. Ceftriaxone/Sulbactam/EDTA

PRECAUTIONS
a) For laboratory use only.
b) Bring all reagents and specimens to room temperature (20°C - 30°C) before use.
c) Do not use the kits beyond expiry date.

d) Carefully read the package inserts before use.
e) Take Universal Precautions. All human body fluids should be treated as potentially infectious.
f) Always be prepared for any accidental spillage. In case of accidental spillage clean the area thoroughly and wipe with 70% IPA at least three times.
g) It is recommended that basic Personal Protective Equipment like gloves and masks are always used.
h) Use a Bactericidal Handrub before and after test procedure.
i) Visually examine the Broth, reagents and other components to ensure there is no physical damage, microbial contamination, discoloration, precipitation, evaporation or other signs of deterioration. If any of these is observed, do not use these reagents and contact Service provider immediately.

Contents

Components	Pack Size	Cat. No.
A. Micropro® - BMD Kit		**On Request**
1. Micropro® - BMD Strip	25 nos.	
2. Gamma Sterile Microtips (200µL)	50 nos.	
3. Susceptibility Test Panel Tray with Tray Cover	1 No.	
B. Micropro® - BMD- Inoculum Broth	25 Nos.	
Ready to use broth for culture growth		

CLEANING AND DECONTAMINATION

a) Spills of potentially infectious material should be cleaned up immediately with absorbent tissue paper and the contaminated area should be decontaminated with disinfectants such as 0.5% freshly prepared sodium hypochlorite (10 times dilution of 5% sodium hypochlorite i.e. household bleach) before continuing work.
b) Sodium hypochlorite should not be used on an acid-containing spill unless the spill area is wiped dry first. Materials used to clean spills, including gloves, should be disposed of as potentially biohazardous waste e.g. in a biohazard waste container.
c) Use 70% IPA (Isopropyl alcohol) to decontaminate and clean test Panel Tray and Tray cover before and after every test.

TEST PROCEDURE

Culture Selection and Preparation

1. Use well isolated colonies from nutrient agar plate or blood agar plate. Use of a MacConkey Agar plate is also acceptable. The test isolate must be a pure culture and not more than 24 hours old.

Inoculum Preparation

1. From the Inoculum preparation Kit, retrieve the required number of Inoculum Broth vials and Tips corresponding to the number of samples to be tested and place them on a flat clean tabletop.
2. Write Patient IDs / Names in the space indicated on the respective vials for all the samples.
3. For a plate culture, open the Inoculum Broth vial and place it on the flat clean tabletop. Look for a well isolated colony in the culture plate, using a sterile loop, pick it and transfer it to the normal saline. Dissolve the inoculum thoroughly to avoid clumping of the cells and adjust the turbidity to 0.5 McFarland Standard. Transfer 50uL from saline to Inoculum Broth vial with the help of sterile tip provided and mix the inoculum thoroughly into the broth. Do the same for rest of the samples.

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Loading the Inoculum in Micropro® - BMD Strips

1. Retrieve the required number of Micropro® - BMD Strips and place them in the Test Panel Tray. Please Note that the handle of the strip should be on the right-hand side.
2. Note down the Patient IDs / Names / other details in the register and on the panels.
3. Mix the inoculum broth well.
4. Load 200µl of the Inoculum Broth in each well with the help of sterile tip provided using a 200uL pipette.

Incubation of Micropro® - BMD Strips

1. Put the tray covers on Test Panel Tray and place them in a Bacteriological Incubator at 35 °C - 37 °C.
2. Recommended incubation time is at least 16-20 hours for both Gram-negative and Gram-positive cultures. However, for Gram-positive cultures 24 hours of incubation is required for certain antibiotics to show results.

Read Results

1. MIC is determined by observing the lowest concentration of an antimicrobial agent which inhibits visible growth of the bacterium.
2. MICs obtained are interpreted as susceptible, intermediate, or resistant, based on the criteria listed in the CLSI MIC standard.

References:

1. M100, Performance Standards for Antimicrobial Susceptibility Testing, 35th Edition, CLSI 2025.
2. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.