



MIC Test Strip Technical Sheet Synergy Testing

Specimen

Cystic fibrosis, multiple drug-resistant organisms, extreme drug resistant organisms, critical specimens, critical infections, critical patients, limited therapy options.

Procedure

Medium: See specific organism for appropriate agar media (e.g. MHA/aerobes, RPMI/fungi)

Inoculum: Suspension in saline (or broth) to 0.5 McFarland (ref.80400) or 1 McF (ref.80401) depending on bacteria. Inoculate normally by sterile swab.

Incubation: 35 ± 2 °C (or other) / ambient (or other) / 24-48 hours (or other) depending on the specific organism.

Interpretation of results: Bactericidal drugs: interpret the M.I.C. at complete inhibition of growth including microcolonies, hazes and isolated colonies. For bacteriostatic drugs, read at 80% inhibition when trailing is seen. When bactericidal is combined with bacteriostatic, read each agent according to their specific category.

Literature

MTS Pack insert, product labels, MTS Application Guide, MTS Interpretative Criteria and Quality Control , MTS Technical Sheets.

Definitions

MIC_A MIC of drug A alone

MIC_B MIC of drug B alone

MIC_{AB} MIC of drug A in combination with B

MIC_{BA} MIC of drug B in combination with A

Interpretation

Fractional Inhibitory Concentration Index (FIC Index) calculations:

FIC Index (Fractional Inhibitory Concentration Index) calculations:

$$\text{FIC Index} = \text{MIC}_{AB} / \text{MIC}_A + \text{MIC}_{BA} / \text{MIC}_B$$

MIC_{AB} = MIC of A in the presence of B; MIC_{BA} = MIC of B in the presence of A.

Interpretation	FIC
Synergy	≤ 0.5
Additive	$> 0.5 \text{ and } \leq 1.0$
Indifference	$> 1 \text{ and } \leq 4.0$
Antagonism	> 4.0

Results

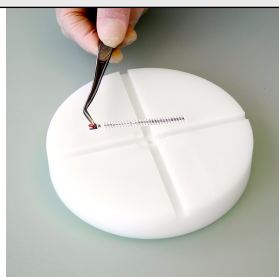
	Single drug		Combination		FIC index	Interpretation
	MIC _A	MIC _B	MIC _{AB}	MIC _{BA}		
Strain 1						
Strain 2						

MTS-SAS™

MIC Test Strip Synergy Applicator System

Product	REF	Σ
MTS Synergy Applicator Platform	96860	1
MTS Synergy Delivery Tool	96870	10 Tests

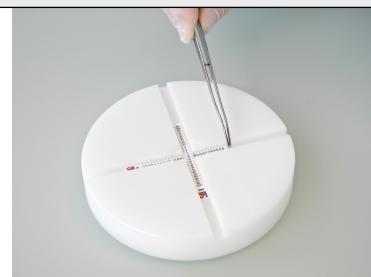
Method



1. Perform standard M.I.C. of drugs A and B prior to synergy set-up.
2. Use the "MTS Synergy Applicator System"* for the synergy testing.
3. Take a MTS (MIC Test Strip) of the first antibiotic (A) with the tweezers and place it on the MTS Synergy Applicator Platform according to position 1.
4. Adjust the MTS (antibiotic A) such that the MIC value of the first antibiotic (MIC_A) is positioned at the base intersection.



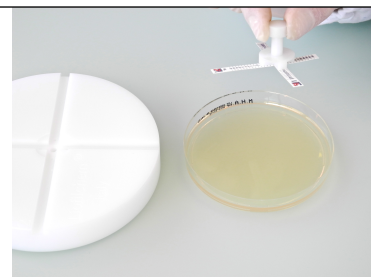
5. Take a MTS of the second antibiotic (B) with tweezers and place it on the base according to position 2.



6. Adjust the second MTS (antibiotic B) such that the MIC value of the second antibiotic (MIC_B) is positioned at the base intersection and intersects MTS-antibiotic A at its MIC value.



7. Use the MTS Synergy Delivery Tool, press hard onto the two carefully positioned MTS (A and B) and move them to the agar plate.



8. Carefully place the MTS Synergy Delivery Tool (with MTS_A and MTS_B) on the agar.
9. Wait until the strips are completely moistened by surface of the agar.



10. Remove the MTS Synergy Delivery Tool from the agar plate leaving MTS_A and MTS_B positioned at 90°. If necessary, use the tweezers to push the strips onto the agar surface.
11. Finally incubate according to the standard MTS procedure for the specific microorganism.

References

- CLSI. Performance Standards for Antimicrobial Susceptibility Testing; latest edition. CLSI Supplement M100. Wayne, PA: Clinical and Laboratory Standards Institute.
- CLSI. Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria that Grow Aerobically; latest edition. CLSI standard M07. Wayne, PA: Clinical and Laboratory Standards Institute.
- The European Committee on Antimicrobial Susceptibility Testing. Breakpoint Tables for Interpretation of MICs and Zone Diameters; latest version. <http://www.eucast.org>

* MIC Test Strip Synergy Applicator System: A device for standardising the *in-vitro* synergy testing of two antibiotics through the method of crossing the gradient strips (US patent US9365886B2).

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