

Minimum Inhibitory Concentration - Supplied Data

Experiment 10 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Aim

To identify an MIC from a supplied concentration-response table.

Principle

The MIC is the lowest tested concentration meeting the defined inhibition endpoint in a valid test. It is method dependent and differs from a killing endpoint.

Requirements

- Instructor-prepared fixed slides, labelled images, demonstration records or coded teaching data for this practical.
- Activity form, microscope for prepared slides where applicable and calculator.

Procedure

1. Identify the teaching material

Record the slide, image or data code, method name and the assigned comparison. Use prepared material and supplied results for this exercise.

2. Check the data table

Read the concentration units, response definition and growth/control outcomes supplied.

3. Identify the first inhibitory level

Find the lowest listed concentration that meets the specified absence-of-visible-growth endpoint.

4. Handle bounds

If all or none of the levels meet the endpoint, state the appropriate upper or lower bound rather than inventing a value.

5. Interpret separately

Use only the assigned current interpretive criteria to discuss a reported category; do not infer clinical dosing from the MIC.

6. Assess controls and limitations

Confirm the meaning of the positive, negative, blank or process controls supplied. State which conclusions the results support and which require additional evidence.

7. Complete the record

Enter observations separately from interpretations. Record units, method conditions given with the data and the instructor-reviewed conclusion.

Pharmaceutical Microbiology

Observations and Record

Record component	Entry
Data code / concentration units	_____
Control status	_____
Lowest qualifying level	_____
MIC or bounded result	_____
Assigned category / limitation	_____

Worked Example

The numbers below are illustrative; enter your own observations in the record.

- Illustration: supplied readings show growth at 1 and 2 units/mL and no growth at 4 and 8 units/mL. The MIC in that teaching table is 4 units/mL, if the controls are valid.

Result

Material / data code: _____. Observed result: _____. Control assessment: _____. Interpretation and limitation: _____.

Precautions

- This activity uses prepared material and data interpretation; it is not a live microbial culture or pathogen-handling procedure.
- Keep morphological, quantitative and clinical interpretations separate.
- Use the method-specific assigned quality controls and current interpretive criteria where relevant.

Viva Questions and Answers**1. Is the MIC a bactericidal concentration?**

No. Inhibition and killing are different endpoints.

2. Why can an MIC be reported as a bound?

The endpoint can fall outside the range that was tested.

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