

# MICROBIAL SUITABILITY TEST FOR LABORATORY PURE WATER (Annually)

***Enterobacter aerogenes* Inoculum Count Verification (Optional):**

Analyst: \_\_\_\_\_

Date: \_\_\_\_\_

|                 |  |  |  |  |  |
|-----------------|--|--|--|--|--|
| Dilution Plated |  |  |  |  |  |
| Count           |  |  |  |  |  |

Dilution Selected for Inoculation (yields 30 - 80 colonies): \_\_\_\_\_

**Initial Count (Pre-Incubation):**

Analyst: \_\_\_\_\_

Date: \_\_\_\_\_

|         | Count<br>(in triplicate) |  |  | Mean<br>Count/mL |
|---------|--------------------------|--|--|------------------|
| Flask A |                          |  |  |                  |
| Flask B |                          |  |  |                  |
| Flask C |                          |  |  |                  |
| Flask D |                          |  |  |                  |
| Flask E |                          |  |  |                  |

Plating Controls  
Air: \_\_\_\_\_  
Dilution Water: \_\_\_\_\_  
Medium: \_\_\_\_\_  
Pipet: \_\_\_\_\_

**Final Count (Post-Incubation):**

Analyst: \_\_\_\_\_

Date: \_\_\_\_\_

|           | Count   |         |         |         |         |
|-----------|---------|---------|---------|---------|---------|
|           | Flask A | Flask B | Flask C | Flask D | Flask E |
| $10^0$    |         |         |         |         |         |
| $10^{-1}$ |         |         |         |         |         |
| $10^{-2}$ |         |         |         |         |         |
| $10^{-3}$ |         |         |         |         |         |
| $10^{-4}$ |         |         |         |         |         |
| $10^{-5}$ |         |         |         |         |         |
| $10^{-6}$ |         |         |         |         |         |
| Count/ml  |         |         |         |         |         |

Plating Controls  
Air: \_\_\_\_\_  
Dilution Water: \_\_\_\_\_  
Medium: \_\_\_\_\_  
Pipet: \_\_\_\_\_

Acceptance Criteria:

Air: < 15 cfu

Dilution Water, Medium, & Pipet: 0 cfu

**Calculations:**

For growth inhibiting substances:

Ratio = \_\_\_\_\_

$$\text{Ratio} = \frac{\text{count/ml B}}{\text{count/ml A}}$$

For nitrogen & carbon sources that promote growth :

Ratio = \_\_\_\_\_

$$\text{Ratio} = \frac{\text{count/ml C}}{\text{count/ml A}}$$

For nitrogen sources that promote growth:

Ratio = \_\_\_\_\_

$$\text{Ratio} = \frac{\text{count/ml D}}{\text{count/ml A}}$$

For carbon sources that promote growth:

Ratio = \_\_\_\_\_

$$\text{Ratio} = \frac{\text{count/ml E}}{\text{count/ml A}}$$

A ratio of less than 0.8 shows growth-inhibiting substances in the water sample. Do not calculate the last three ratios when the first ratio indicates a toxic reaction.

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**Interpretation:**

The acceptable ratio is 0.8 to 3.0. If the ratio is less than 0.8, growth inhibiting substances are present. If the ratio is above 3.0, excessive growth-promoting substances are present.

The ratio of \_\_\_\_\_ is \_\_\_\_\_ (*acceptable, unacceptable*).

Analyst: \_\_\_\_\_

Date: \_\_\_\_\_

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**Corrective action taken if not acceptable :**

\_\_\_\_\_  
\_\_\_\_\_

Analyst: \_\_\_\_\_

Date: \_\_\_\_\_