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Document Number: MIC60050

Version No:

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Distribution:

Microbiology Quality Control Manual

Effective:

Date Reviewed:

Next Review:

Document Name: Water Testing Quality Control

Approved By:

Status: **DRAFT**

PURPOSE: To standardize the quality control procedures for water testing kits; Colilert-18 and SimPlate for HPC.

REAGENTS:

- Colilert-18 test kit
- SimPlate for HPC test kit

SUPPLIES:

- Sterile water
- Sterile water vessels
- Plastic Vitek test tubes and caps
- 0.45% sterile saline
- DensiCHEK Plus
- Sterile swabs
- 10 mL syringes
- QC organisms:
 - E.coli* ATCC 25922
 - K.pneumoniae* ATCC 700603
 - P.aeruginosa* ATCC 27853
 - Enterococcus faecalis* ATCC 29212

SPECIAL SAFETY PRECAUTIONS:

Containment Level 2 facilities, equipment, and operational practices for work involving infectious or potential infectious materials or cultures.

- Lab gown must be worn when performing activities with potential pathogens.
- Gloves must be worn when direct skin contact with infected materials is unavoidable.
- Eye protection must be used when there is a known or potential risk of exposure of splashes.
- All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC).
- The use of needles, syringes and other sharp objects should be strictly limited.

All patient specimens are assumed to be potentially infectious. Universal precautions must be followed. Since viable micro-organisms are used, all cultures must be handled with appropriate precautions. All equipment in contact with cultures should be decontaminated by appropriate methods.

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FILENAME: MIC60050-WaterTestingQualityControl

Print Date:

PROCEDURE INSTRUCTIONS:

Step	Action
Performing quality control on Colilert-18 kit	
1	Quality control is performed on the Colilert-18 kit when a new kit is received. An order will be auto-generated in TQC.
2	Label 3 sterile water vessels with the following QC organisms, using the labels in the “QC Stickers” binder: <ul style="list-style-type: none"> • <i>Escherichia coli</i> ATCC 25922 • <i>Klebsiella pneumoniae</i> ATCC 700603 • <i>Pseudomonas aeruginosa</i> ATCC 27853
3	Fill the water vessels with 100 mL of sterile water.
4	Label 3 Vitek test tubes with each of the above QC organisms. Dispense 3 mL of saline into each tube.
5	Prepare a 0.5 McFarland standard suspension of all required isolates.
6	Dip a 1 µL loop into the organism saline suspension and inoculate the corresponding water vessel.
7	Recap each water vessel and process as per MIC10310 – Water Testing - Colilert -18.
8	After testing is complete, enter results into TQC. Refer to MIC60110.

EXPECTED RESULTS:

<i>E.coli</i> ATCC 25922	Total coliform = Present E.coli = Present	Yellow/Fluorescence (P/P)
<i>K.pneumoniae</i> ATCC 700603	Total coliform = Present E.coli = Absent	Yellow/No fluorescence (P/A)
<i>P.aeruginosa</i> ATCC 27853	Total coliform = Absent E.coli = Absent	No colour change/No fluorescence (A/A)

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PROCEDURE INSTRUCTIONS:

Step	Action
Performing quality control on SimPlate for HPC kit	
1	Quality control is performed on the SimPlate for HPC kit when a new kit is received. An order will be auto-generated in TQC.
2	Label 2 single-test media tubes (green top) with the following: <ul style="list-style-type: none"> • <i>Enterococcus faecalis</i> ATCC 29212 • Sterile water
3	Label 2 SimPlates with the above QC organisms, using the labels in the "QC Stickers" binder.
4	Add 10 mL of sterile water to the single-test media tubes.
5	Label 2 Vitek test tubes with each of the above QC organisms. Dispense 3 mL of saline into each tube.
6	Prepare a 0.5 McFarland standard suspension of <i>E.faecalis</i> ATCC 29212 in the corresponding tube. Do not add anything to the sterile water tube.
7	Dip a 1 µL loop into the organism saline suspension and inoculate the corresponding single-test media tube.
8	Recap and mix each single-test media tube and process as per MIC10315 – Water Testing - SimPlate for HPC.
9	After testing is complete, enter results into TQC. Refer to MIC60110.

EXPECTED RESULTS:

<i>E.faecalis</i> ATCC 29212	>1 wells fluoresce
Sterile water	0 wells fluoresce

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REFERENCES:

- SimPlate for HPC Water Testing Product Information package insert, 2016
- IDEXX. (2011). Colilert-18 Test Kit package insert, 2017

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0		Initial Release	L. Steven

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