



Cornell University
Cornell Center for Animal Resources and Education

CARE544.01 Sanitation Validation in Non-Agricultural
Biomedical Laboratory Animal Facilities

The intent of this standard operating procedure (SOP) is to describe the methods for routine monitoring for potential microbial pathogens in laboratory animal facilities. This SOP is intended for use by facility managers and the Cornell Center for Animal Resources and Education (CARE) personnel. This procedure is approved by the Cornell Institutional Animal Care and Use Committee (IACUC) and CARE. Any exemption must be approved by the IACUC prior to its application.

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1. Introduction

This SOP describes methods used to ensure that sanitization procedures result in a significant decrease in bacterial surface contamination. Autoclaved items must be free of all vegetative and spore forming bacteria. Water in automatic water systems must meet the specifications of the Public Drinking Water of New York State Sanitary Code for the Membrane Filter (MF) Total Coliform Test.

2. Materials

Note: The following supplies will be provided to facility personnel by CARE

- Rodac[®] Plates
- CultureSwab
- Water collection bottles from CARE
- Temperature stripes
- Biological Steam Test Pack
- Forms

3. Procedures

A. Sample Collection

i. General

- a. Facility personnel will collect all samples based on a list provided by CARE

- b. Sample items immediately after they are sanitized and dried; Items must air dry - **do not** wipe dry
- c. Collect microbiological monitoring samples on Monday, Tuesday, or Wednesday *only*; Submit to CARE by 2 pm

ii. Rodac Samples

- a. Store Rodac plates upside down in a refrigerator until shortly before they are used
- b. Discard the plates if they are discolored, appear cracked or dry, or have exceeded the expiration date
- c. Warm plates to room temperature just before they are inoculated
- d. Remove the lid and apply the plate's agar surface directly to the surface being tested and exert moderate pressure. Replace the cover and tape the plate closed.
 - (1) **Important:** Avoid rubbing the plate on the sampling site to avoid damage to the agar bed, which may affect the quality of the sample
 - (2) Discard the plate if the agar surface of the plate or inside of the lid accidentally touches anything other than the intended sample
- e. Label the bottom of each plate with the location of the sample using a permanent marker
- f. Return the plate to the refrigerator after the samples have been collected and contact CARE for pick up; plates should be stored upside-down to prevent condensation from dripping onto agar

iii. Swab Samples

- a. Use CultureSwab to sample only those items that are too small to sample or hard to reach with a Rodac plate
 - Note:** Results from swabs yield only the type of bacteria; not the actual number of bacteria present, which is less informative
- b. Store swabs at room temperature prior to use
- c. Sampling technique:
 - (1) Open the swab wrapper enough to grasp the plastic top
 - (2) Withdraw the swab from the wrapper and rub the tip of the swab against the item to be sampled
 - Important:** Avoid touching the cotton tip or the shaft of the swab to anything other than the item you wish to sample
 - (3) Remove the top from the culture tube and push the swab into the culture tube until the handle of the swab seats in the top of the culture tube (The culture tube top may be discarded)
- d. Label the sample with a description of the item sampled, date and time sampled
- e. Refrigerate sample and call CARE for pick up

iv. Automatic Cage Washers

- a. Monitor water temperature of automatic cage washers at least once a week using "Temp-A-Sure" temperature stripes from Steris, or similar product; If the cage washer is used less than once a week, use a "Temp-A-Sure" strip for each run. Rinse water temperature should reach 180° F. Record results and keep on file in the facility.
- b. Record all service and routine maintenance and maintain records at the facility

- c. Monitor efficacy of cagewasher sanitation on a quarterly basis - sample items as described above immediately after they are washed and (dripped) dry
- v. **Autoclaves**
 - a. Monitor autoclaves quarterly using “Verify Biological Steam Test Pack” from Steris
 - b. Include the Test Pack in a regular autoclave load
 - c. Return to CARE for 48 hours of incubation
 - d. Record results and keep on file in the facility
- vi. **Automatic Water Systems**
 - a. Only use water collection bottles provided by CARE
 - b. Do NOT open or rinse bottle prior to sample collection
 - c. Remove the filter screen from the faucet and disinfect the faucet surface; let the water run for at least two minutes
 - d. Open and fill the bottle to the indicator line and replace the cap; bottles will not be accepted in the water level is below the indicator line or if the bottle is full.
 - e. Write your name, date, and the time and place of collection on the bottle’s label; be sure to specify “AM” or “PM”
 - f. Return bottle to CARE; samples must be submitted within 24 hours of collection

B. Sample Submission – performed by CARE Technician

i. Rodac and Swab Samples

- a. Fill out Animal Health Diagnostic Center General Submission Form
 - Enter Microbiological Monitoring account number
 - Enter “Quarterly Microbiological Monitoring” in History Section
 - Number each Rodac plate and swab and enter info from plates/swabs into the Animal Identification, Specimen Submitted and Date Taken Section
 - Enter “CARE Environmental Gram Stain” in Test Required section
- b. Submit sample with paperwork to Diagnostic Lab on **Monday – Wednesday before 2pm**
- c. Record information on clipboard on table in Diagnostic Lab hall
- d. Results will be faxed when complete

ii. Water Samples

- a. Fill out Animal Health Diagnostic Center Bacteriological Test Request for Potable Water form
 - Enter Microbiological Monitoring account number
 - Check “Combined Total Coliform/E.Coli-Present or Absent/100ml”
- b. Submit samples to the Medical Records Section of the Animal Health Diagnostic Lab, Room D1-006, within 24 hours of collection
- c. Pick up test results from the CARE box (to the right of the Medical Records Section door) in 1-3 business days after submission

C. Interpretation and Documentation of Results

i. Care Technician

- a. Fill out CARE Animal Health/Diagnostic Report and give to facility CARE Veterinarian with test results for interpretation
- b. Send copy of all forms/results to facility manager once CARE Veterinarian has signed off on them
- c. Keep copies of all results for CARE files for 3 years

ii. CARE Veterinarian

- **Rodac plate**

Colonies per Rodac® plate			
0 = excellent	0–25 = good	26–50 = fair	50 and over = poor

- **CultureSwab**

Gram Stain Results	
Excellent Sanitation	No growth
Good Sanitation	Free of gram negative rods and gram positive cocci
Fair Sanitation	Free of gram negative rods but containing some gram positive cocci
Poor Sanitation	Gram negative rods present

4. References

- Cayuga Medical Center at Ithaca, Policy and Procedure SOP
- Cornell University Animal Health Diagnostic Center Water Test Instructions
- Larson, E., Hygiene of the Skin: When is Clean Too Clean?; Emerging Infectious Diseases 2001 Mar-Apr;7(2)
- Ryan, L., Effectiveness of Hand Cleaning in Sanitizing Rabbit Cages; Contemporary Topics 1993 Nov; 32(6):21-22.
- Douglas, E., Comparison of Two Sanitation Monitoring Methods in an Animal Research Facility; Contemporary Topics 1998 Nov; 37(9)71-74.

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