
IACUC Policy - ATP Testing of Hand-washed Equipment

Purpose: To validate the cleaning requirements of equipment involved in animal use and monitor the effectiveness of a cleaning program to ensure cleaning and disinfection of surfaces in close proximity to research animals.

Background: Equipment that comes in contact with research animals should be sanitized on a regular basis. According to the Guide, “Whether the sanitation process is automated or manual, regular evaluation of sanitation effectiveness is recommended. This can be performed by evaluating processed materials by microbiologic culture or the use of organic material detection systems (e.g., adenosine triphosphate [ATP] bioluminescence) and/or by confirming the removal of artificial soil applied to equipment surfaces before washing.”

While Purdue animal facility cage wash areas have regular monitoring of sanitization in place, equipment in non-centralized areas, laboratories, and procedure spaces (caging, behavior, imaging, stereotax) are typically hand-washed; therefore, a system is needed to ensure proper sanitization of these items.

ATP testing works when ATP is brought into contact with the Hygenia liquid (the stable reagent) in the test device. Light is emitted in direct proportion to the amount of ATP present in the sample, providing information on the level of contamination in seconds.

Policy:

Frequency: All equipment (caging, behavior, imaging, stereotax, etc.) coming in contact with animals must be sanitized with each use. On a monthly basis, these items must be tested for ATP to ensure adequate sanitization. Records of testing must be maintained for this testing.

For those labs that can provide LAP with one year of data showing that their sanitation methods are effective, frequency of testing may be reduced to semiannual testing (every 6 months). A minimum of 12 months of records must be provided to LAP for evaluation and approval to be exempt from monthly testing (lapvet@groups.purdue.edu).

Procedure:

Ensure equipment is dry. Wet equipment will throw off results.

Remove ATP swabs needed from the refrigerator and allow to sit at room temperature for 10 minutes.

When collecting a sample, use aseptic technique: Wear gloves. Do not touch the swab or the inside of the Luminometer. Label each ATP tube with the type of equipment being tested.

Hold the swab tube, twist, and pull the top of the swab out of the tube.

Thoroughly swab the equipment, rotating the swab on the equipment surface to increase sample size. Area to be sampled: 4"x4".

Place swab back in the tube.

Approved by the IACUC 6/15/2022

Re-approved 11/15/2023

To activate the liquid, hold the swab tube firmly and break the snap valve by bending the bulb forward and backward.

Squeeze the bulb twice, expelling all liquid down the swab.

Once bulb is drained, sample must be tested in 60 seconds.

Gently shake for 5-10 seconds.

Hold the Luminometer in the upright position with the lid closed.

To start the Luminometer:

Press the red circle located in the upper left corner

It will begin to countdown from 60 seconds

Once it reaches 0, it will beep, indicating that it is ready for the first sample ATP swab

Flip open the lid and place the ATP tube in the circular opening.

Click the lid shut and press the "OK" button.

It will take 15 seconds before the reading is given.

Record the result in the log with the following information:

Date

Time ATP swab was removed from the refrigerator

Time ATP swab was used

Description of equipment assessed and results

Tester's initials and comments

Open the lid and remove the tube.

Continue to test all ATP samples in this manner.

After all samples have been tested, press the red circle button to turn off the Luminometer.

Discard the ATP tubes in the trash receptacle after recording the results.

Results are:

0 – 10: acceptable

>10: unacceptable, the entire wash load or piece of equipment will need to be re-washed

Note: For some areas, specifically agricultural or aquatic housing, 0-10 may be unachievable. In these areas, food surfaces (calf nursing bottles, nonporous food dishes) should be less than or equal to 100 RLU's. For housing equipment, a reduction of at least 25% is required. Please contact the Laboratory Animal Program if you have any questions.

Luminometers are available to check out from the LAP Drug Distribution Center, located in LILY 2-110. Please email Elisa Strange at the Drug Distribution Center DDCLAP@purdue.edu to schedule use. Swabs may also be purchased from the Drug Distribution Center by filling out the ATP Swab Requisition form, found on the DDC Sharepoint drive or by emailing a request for the form to the DDCLAP@purdue.edu email. Training will be required for first time users of the LAP device.

Hold the Luminometer upright when taking readings. Tilting the unit can change results.

ATP swabs must be refrigerated (35-46°F).

Check expiration date on the ATP swabs.