

Bauer Center for Genomics Research
Standard protocol

Title: Sonicator Protocol		
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1. Purpose

This protocol describes how to use the Fisher (Misonix) sonicator to fragment DNA or disrupt cell samples. The protocol is designed as a reference and is not a substitute for training. Users must complete a training session before using any of the Bauer Center's instrumentation.

2. Materials

2.1. Sample(s) to be sonicated in round-bottomed tube(s).

3. Instrumentation

Fisher (Misonix) Model 550 (XL2020) sonicator with microtip.

Ear protection

4. Reagent preparation

none

5. Procedure

5.1 With power off, turn the large Amplitude Control Knob to 0.

5.2. Clean the probe with EtOH and water and dry with a kimwipe.

5.3 Turn the power on and wait for diagnostics to complete.

5.4 Tuning - must be performed every time the instrument is used.

Instructions below are for the microtip probe. Refer to the manual for other probe sizes.

5.4.1. Wear ear protection during this procedure.

5.4.2. Perform the tuning procedure quickly to avoid sonicating dry for a long time.

5.4.3. Press the "Tune" key.

5.4.4. Turn the Amplitude Control Knob slowly to 1.

5.4.4.1. Watch the bar graph on the LCD display and turn the Amplitude Control Knob back down if the reading exceeds 70%.

5.4.4.2. Adjust the small Tuning Knob so the bar graph reads as low as possible.

5.4.5. Turn the Amplitude Control Knob slowly to 3.

- 5.4.5.1. Watch the bar graph on the LCD display and turn the Amplitude Control Knob back down if the reading exceeds 70%.
- 5.4.5.2. Adjust the small Tuning Knob so the bar graph reads as low as possible.
- 5.4.6. Turn the Amplitude Control Knob slowly to 5.
 - 5.4.6.1. Watch the bar graph on the LCD display and turn the Amplitude Control Knob back down if the reading exceeds 70%.
 - 5.4.6.2. Adjust the small Tuning Knob so the bar graph reads as low as possible.
- 5.4.7. Turn the Amplitude Control Knob back to 0.
- 5.4.8. Press the "Tune" key to end the tuning cycle.
- 5.5. Sonicate Sample
 - 5.5.1. Wear ear protection during this procedure.
 - 5.5.2. Immerse probe tip into the sample liquid.
 - 5.5.2.1. Don't touch the probe tip to the sides or bottom of the tube.
 - 5.5.3. Press the "Start" key to begin continuous sonication (timer will count seconds).
 - 5.5.4. Turn the Amplitude Control Knob to the desired level.
 - 5.5.5. Press the "Pause" key to temporarily stop sonication.
 - 5.5.5.1. Press the "Pause" key to resume sonication (timer will resume).
 - 5.5.6. Sonicating generates heat. If your sample is heat labile, periodically pause sonication and put your sample on ice to cool.
 - 5.5.7. Press the "Stop" key to end.
- 5.6. Clean up
 - 5.6.1. Turn the Amplitude Control Knob to 0.
 - 5.6.2. Turn off the power.
 - 5.6.3. Clean the probe with EtOH and water and dry with a kimwipe.