Bauer Core Standard Protocol		
Title: Using the Covaris S220		
Pages: 2	Revision: 1.1	Date: 1/26/2017
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Contact: claire@cgr.harvard.edu	Comment: General protocol. See specific protocol for DNA shearing instructions.	

1. Purpose
To use the Covaris S220 shearing instrument. Users must complete a training session before using any Bauer Core instrumentation.

2. Materials
2.1. Sample(s) to be sheared
2.2. Tube for desired protocol
- 2.2.1. MicroTube: 150 - 1500 bp, 130µl or 50µl - part #520045 (provided by core)
- 2.2.2. MiniTube Clear: 2000 bp, 200ul - part # 520064 (provided by core)
- 2.2.3. MiniTube Blue: 3000 bp, 200ul - part # 520065 (provided by core)
- 2.2.4. MiniTube Red: 5000 bp, 200ul - part # 520066 (provided by core)
- 2.2.5. MilliTube: 1 ml - part # 520135 (NOT provided by core)
- 2.2.6. MicroTube-15: 150 - 1500bp, 15ul - part # 520145 (NOT provided by core)

3. Instrumentation
3.1. Covaris S220
3.2. Tube holder (tube holders available in core are listed below)
- 3.2.1. Microtube holder part # 500114
- 3.2.2. MiniTube holder part # 500206
- 3.2.3. MilliTube holder part # 500371
- 3.2.4. MicroTube-15 holder part # 500427

3.3. Microcentrifuge (minifuge may be used for MicroTubes, but NOT MicroTube-15)
- 3.3.1. Microcentrifuge adapter #500406

4. Reagent preparation None.

5. Procedure

5.1. Start Up: Allow 30 minutes for start up procedure.
- 5.1.1. Turn on the chiller beneath the bench (power switch on back).
  - 5.1.1.1. Set chiller to desired temp. (2.5 ºC gives ~7ºC in Covaris tank).
  - 5.1.1.2. To adjust, push the knob, turn to desired temp, and push again.
- 5.1.2. Fill the Covaris tank to the level desired with DI H_2O.
- 5.1.3. Turn on the Covaris instrument (power switch on front)..

5.1.4. Open the SonoLab software.

5.1.4. Allow the water bath to degas and come to temperature.

5.2. Create a method with desired parameters

5.2.1. Standard DNA shearing methods are in the “Bauer Core” folder.

5.3. Preparing the Sample Tube

5.3.1. Pipette the sample into the tube (many tubes have septa for easy loading).

5.3.2. Check for air pockets and spin down if present.

5.3.3. Place the tube into the holder so that it sits straight.

5.3.4. Load the holder into the instrument (any direction).

5.4. Running a Saved Method

5.4.1. Select a method (standard DNA shearing methods are in the “Bauer Core” folder).

5.4.2. Wait for the instrument status to be ready and then hit Run.Wait for the instrument status to be ready and then hit Run.

5.5. Cleanup

5.5.1. Remove the sample tube.

5.5.1.1. Spin tube briefly to collect sample.

5.5.1.2. Remove cap to pipette out sample.

5.5.2. Turn off the degas pump

5.5.3. Empty the water tank.

5.5.4. Run the degas pump to purge residual water from the lines.

The pump will automatically stop after 10 seconds.

5.5.5. Empty residual water from the tank and allow to air dry.