SOP: Sorvall Legend XTR Centrifuge

Purpose: Collecting solution at the bottom of the tube and/or separating cell pellets from the solution

Location: BHE B8A (cell culture room in BME Cellular/Molecular Teaching Lab)

Required PPE: Fluid-resistant lab coat; nitrile gloves; safety goggles; long pants; closed toe shoes

Protocol for Use:

1. The benchtop centrifuge will display the current time (00:00 if not spinning) and current internal temperature on the top row. The bottom row (from left to right) will display acceleration index, deceleration index, centrifugal speed, spin time, and set temperature (**Figure 1**).
    a. The centrifuge should always be turned on. If it's off, then turn on the power switch on the back left-hand side.

Figure 1. *Left*: Overview of the Sorvall Legend XTR centrifuge. *Right:* The registered parameters displayed on the screen. Top row corresponds to the real-time units and bottom row are the set values.

2. Click the "Open" button once on the right-hand side to open the centrifuge lid. There will be a clicking sound and then the lid can be manually opened by lifting it. Place your tube in the appropriate holder (brown: 15mL conical tube, green: 50mL conical tube) (**Figure 2**).
    a. Weight balance is extremely important for a centrifuge to operate successfully. If there is one 15mL tube with 10mL solution that needs spinning, then place a 15mL conical tube with 10mL of water as counterweight directly on the opposite side (symmetric about the center). If there are two identical tubes that need spinning, then simply place one on each side.

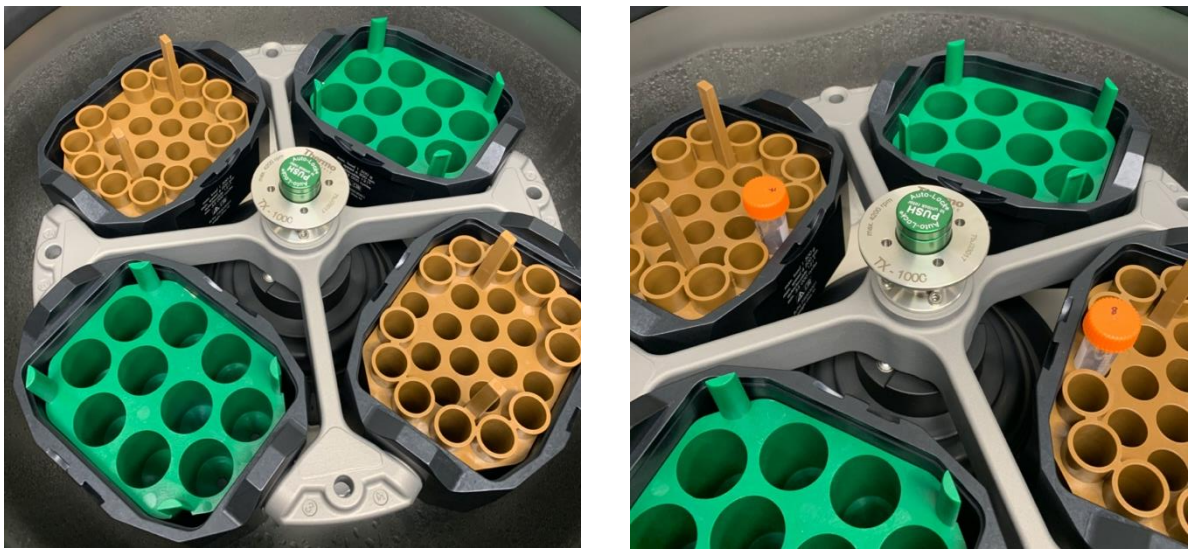

Figure 2. *Left*: The placement of the 15mL and 50mL holders inside the centrifuge. *Right*: Symmetric placement of two 15mL conical tubes about the center for balance.

3. Once the samples are loaded, manually close the lid until a clicking sound can be heard. Then the following parameters can be specified:
    a. First, press icon under “Acc/Dec” to specify the acceleration and deceleration indexes. Please keep both of those set to “9” for the purposes of the teaching lab.

    b. Second, the centrifugal speed can be specified by clicking the “Speed” icon. The numerical keypad on the right side can be used to input the value. The up-down button can be used to toggle between xg and rpm, depending on which unit is preferred. Ensure that the appropriate unit is selected before inputting the value.

    c. Third, the spin time can be specified by clicking the “Time” icon. The units will always be “hh:mm”, so if 5min is desired, then ensure the time set is 00:05. Please ensure that “at speed” is set for the purposes of the teaching lab.

    d. Finally, the centrifuge temperature can be specified by clicking the “Temp” icon. The units will always be in ^{o}C. Ensure that “air” is set for the purposes of the teaching lab.

4. After all the parameters are set, click “Start” and the centrifuge process will proceed. The top row will show the speed, time elapsed, and current temperature in real-time. Once the spin is complete, there will be a message that shows “End of Run”. The lid can now be safely opened, and the samples can be removed (**Figure 8**).
    a. If there is an imbalance, an error message will be displayed, and the run will be halted.

5. After all the runs have been made, please keep the lid open so that the air compressor does not keep running. Place all counterweights outside of the centrifuge and the TA or lab manager will put them away.

Maintenance Schedule:
With each use: clean any spilled water and chemicals with both a Kimwipe and 70% ethanol.

Contact Information:
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