

**Read all instructions carefully as improper use can damage the instrument and cause serious injury.**

PBCF Colleagues: only 1 user from the same group can reserve 1 ultracentrifuge unit at a time during PBCF operation hours (Mon-Fri, 09:00 – 17:00). This rule is exempt outside these hours. Reservations can be made on Idea ELAN.

#### Before Sample Preparation:

1. **Ultracentrifuge Conditions:** Assure rotor meets necessary conditions for your experiment. If working with less than 48,000 x *g*, please use a superspeed centrifuge instead.
2. **Supplies and Consumables:** Assure adequate supplies such as tubes, adaptors, etc. It is required that **only genuine Beckman Coulter products** be used with Beckman Coulter ultracentrifuges. To order supplies, visit <https://www.beckman.com/shop/centrifugation/rotors>, navigate to the desired rotor, then click the “Tubes and Bottles” tab.
3. **Special Considerations:** Examples include: the containment of pathogens and biological materials, toxic compounds such as ethidium bromide, precipitates at low temperature such as cesium chloride can unbalance the rotor while the ultracentrifuge is running causing catastrophic failure.
4. PBCF prohibits organic solvents used in our ultracentrifuges, with the exception of PEG for gradient centrifugation.

#### Sample/Rotor Preparation:

1. **Balance sample tubes weight within 0.01 – 0.02 g (10 – 20 mg) of the target weight.** Sample tubes must be prepared according to the *Filling and Capping Requirements*<sup>[1]</sup> table. **If samples are not prepared correctly, tubes can break, ruining samples, and permanently damaging the instrument.**
2. Attain rotor/buckets from cold room B, inspect for signs of damage/wear and assure o-rings are in place. Inspect all rotor and bucket cap o-rings to assure they are well lubricated and seal smoothly.
3. Attach samples to rotor. When using a swing bucket rotor, **all swing buckets must be placed on the rotor even if they contain no sample.** All swing buckets should hook firmly on the rotor and move freely at the hinge.

#### Starting the Ultracentrifuge

1. Flip the switch to turn on the Beckman Coulter XPN-100 Ultracentrifuge, the monitor will turn on.
2. Gently slide the lid to open the ultracentrifuge chamber.
3. Carefully seat the rotor with attached samples on the spindle. Close lid.
4. Press “vacuum” on the monitor to evacuate the chamber.
5. On the monitor, set ultracentrifuge parameters: rotor speed, select correct rotor, acceleration and deceleration profiles, run time, and temperature.

#### Finishing the Ultracentrifuge

1. When the run finishes, the rotor will come to a complete stop. Press “vacuum” to release vacuum in the chamber, wait until finished.
2. Gently open the lid, inspect for spills/leaks.
3. Carefully lift and remove the rotor, remove samples from the rotor.
4. Wipe chamber walls with 70% ethanol. If spill/leaks are present, wipe with 70% ethanol. Close lid.
5. To clean the rotor, use **non-metallic brushes** and rotor detergent.
6. Return rotor and buckets to cold room B, seat rotor upright or in designated rotor holder.
7. Turn off ultracentrifuge by flipping switch, monitor will turn off.

<sup>[1]</sup> Refer to the *Beckman Coulter Filling and Capping Requirements Table* specifications depending on tube/bottle being used.

