



Cryo-EM Merit Badge Independence Checklist

A Collaboration Among the NIH-Funded Cryo-EM National Centers

Leica EM GP2 Independence Test Evaluator Checklist – CryoEM Merit Badges

Trainee: _____

Preparing the LeicaEM GP2

- ☐ ☐ Turn on the Leica EM GP2.
- ☐ ☐ Fill humidifier with ____ mL water (until prompt turns off).
- ☐ ☐ Close the valve on the humidifier hose and store on clip.
- ☐ ☐ Empty the drip/drain tray.
- ☐ ☐ Place the cryogen cups in the freezing station.
- ☐ ☐ Add LN2 to the freezing station until the temperature reaches -175°C.
- ☐ ☐ Fill the ethane cup using the ethane fill lid.
- ☐ ☐ Place new filter paper on the blotting pad.
- ☐ ☐ Set humidity, temperature, and blot process parameters:
- ☐ ☐ Test blot parameters with blank grid

Freezing Cycle

- ☐ ☐ Add more LN2 to cooling chamber when needed.
- ☐ ☐ Check that temperature and humidity have reached target.
- ☐ ☐ Check that lids are removed from cryogen cups before plunging.
- ☐ ☐ Place new grid-box under LN2, in holder.
- ☐ ☐ Pick up glow-discharged grid with the EM GP2 tweezers.
- ☐ ☐ Press “Load Forceps” and attach tweezers in the correct orientation to the plunge-rod.
- ☐ ☐ Press “Load specimen” to lower the chamber to the blotting position.
- ☐ ☐ Apply sample to the grid by placing pipette through loading port on the side of freezing chamber.
- ☐ ☐ Press “Blot” to start the automated blotting process.
- ☐ ☐ If you did not enable automated plunging, press “Plunge” to plunge the grid.
- ☐ ☐ After the environmental chamber lifts, remove the tweezers from the plunge rod and transfer the grid to the LN2 cup and into your grid box.
- ☐ ☐ Repeat for all grids.

Cleaning Up

- ☐ ☐ Ensure the Leica EM GP2 tweezers are clean, dry and stored with the tip protector attached.
- ☐ ☐ Empty the humidifier by aspirating with an empty syringe through the fill tubing.
- ☐ ☐ Empty the drip tray.
- ☐ ☐ Remove and dispose of the used filter papers and store the magnetic ring.
- ☐ ☐ Remove and store the cryogen containers in the appropriate location.
- ☐ ☐ Start the bake out.
- ☐ ☐ After bake out is complete, power down the instrument (or ask staff to do this for you).

Supervising Staff 1: _____

Date: _____

Supervising Staff 2: _____

Date: _____