Mini Extruder Pro
Extrusion technique guide

Avanti Research
A CRODA BRAND

A quick-reference workflow for preparing liposomal suspensions with confidence.

Membrane selection matters

Extrusion of multilamellar liposomal suspensions using membranes with a pore size >0.2µm does not produce unilamellar liposomes. Liposomes produced with larger pore membranes will yield a polydispersed suspension of multilamellar liposomes. Unilamellar liposomal suspensions with a low polydispersity can only be prepared with membranes having a pore size of ≤0.2µm.

Pre-wet first

Pass a syringe full of buffer through the extruder, then discard the buffer

Single use

Polycarbonate membranes and filter supports are for one liposome preparation only.

80°C max

Do not exceed 80°C; higher temperatures can damage the extruder and syringe components.

Setup workflow

1 Prepare dry lipid mixture

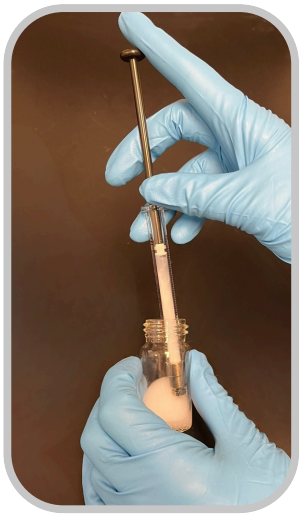
Prepare by lyophilization or evaporation

2 Heat the base

Place base on hot plate and allow block to reach temperature (~15 min).

3 Hydrate sample

Hydrate at least 30 mins above phase transition temperature.



4 Load and dock syringes

Once hydrated, load sample into one gas-tight syringe and dock into one side of the Mini Extruder Pro.
Set the empty syringe plunger to zero and dock it on the opposite side.

Do not twist syringes

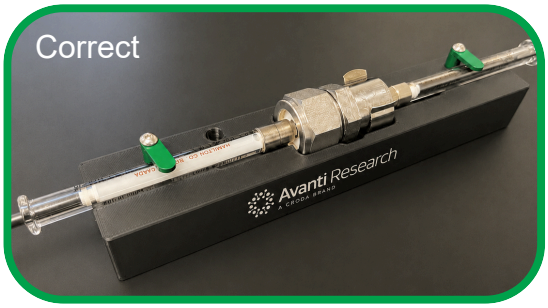
Slide into body until firmly seated. Twisting can loosen needles and create leaks.

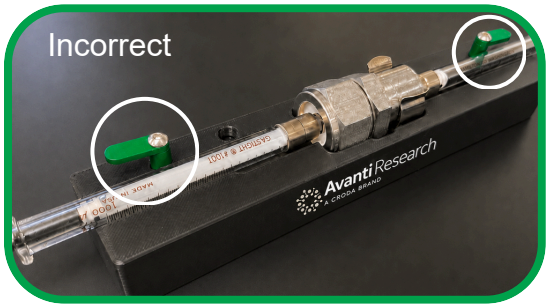
Run the extrusion

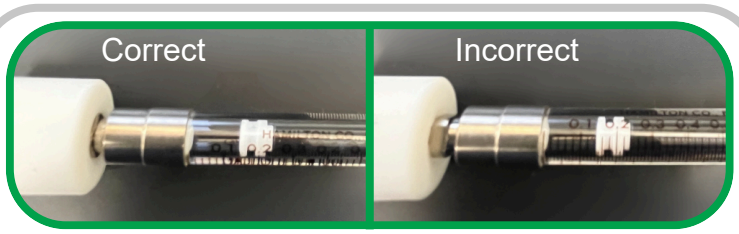
Use gentle, controlled transfers and keep the system seated correctly throughout the workflow.

1. Setup + thermal contact

Seat the extruder apparatus into the base and then insert the syringes.
Use the swing arm clips to keep the syringes aligned and in good thermal contact.





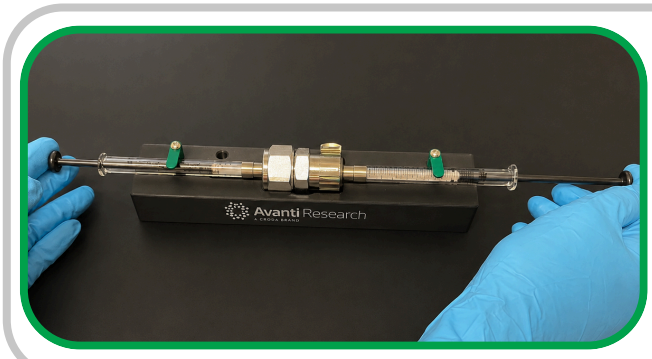


2. Seat syringes correctly

Do not twist; syringes should fit tight into the extruder.

3. Equilibrate temperature

Allow suspension to equilibrate for approximately 5-10 minutes.



4. Transfer back and forth

Gently push the filled syringe to transfer the lipid solution to the alternate syringe, then transfer it back.

Minimum 11 passes
More passes improve homogeneity.

5. Collect from the alternate syringe

Collect final extrusion from the alternate syringe. Remove the unit from the heating block, then pull syringes straight out by sliding on the base. Use care: solution and syringe may be hot.

Scan here for full technique guide:

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