lil' tuna

UNCHAINED LABS

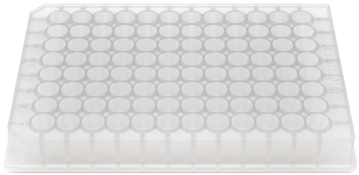
Get hooked on automated buffer exchange

Buffer exchange and sample concentration stand between you and everything else you need to get done – but traditional methods are slow, manual, and impossible to fit into an automated workflow. Lil' Tuna is the first fully automated, plate-based benchtop buffer exchange system that handles proteins, nucleic acids and gene therapy vectors at any scale. Run 96- or 24-well Unfilter plates to maximize throughput or up to six individual samples in Unas. Either way, Lil' Tuna runs itself so you don't have to be there.

- Proteins
- Nucleic acids
- Viral vectors

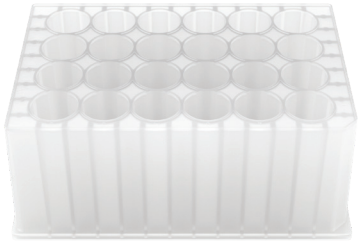
Whatever floats your throughput boat

Whether you're running a handful of samples or a massive formulation screen – Lil' Tuna swims in your lane. Go big with Unfilter 96 or 24 plates for boatloads of samples or keep it light and run 1 to 6 Unas. You get your choice of membrane chemistries and molecular weight cutoffs to suit your sample – with recoveries ≥96%.



Unfilter 96

- 100–450 µL
- 3, 10, 30, 100 kDa MWCO regenerated cellulose



Unfilter 24

- 0.45–8 mL
- 10, 30, 100 kDa MWCO regenerated cellulose

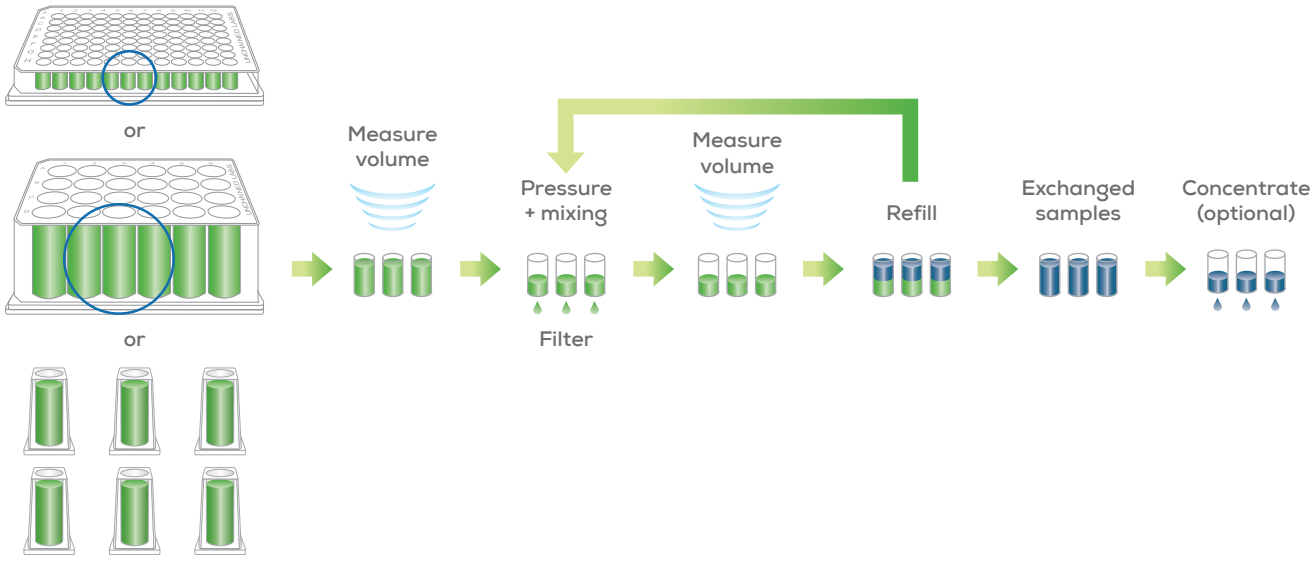
Una

- 0.45–8 mL
- 10*, 30, 100 kDa MWCO regenerated cellulose, polyethersulfone

*Only regenerated cellulose

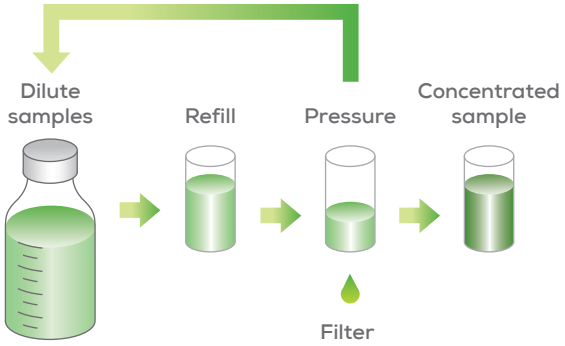
Just flow with it

Lil' Tuna uses our tried-and-tested pressure-based UF/DF approach for buffer exchange. Each run starts with a check of the initial sample volume in each well using an ultrasonic volume sensor. Then samples are pressurized to send the filtrate through the membrane while gentle mixing keeps things evenly distributed and flowing smoothly. The volume gets checked again and Lil' Tuna refills each well with your exchange buffer. This cycle repeats until your samples reach your target exchange percent and volume.



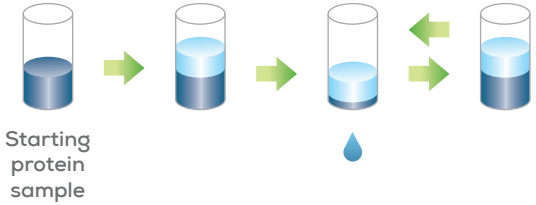
Dive deep on concentration

Sometimes samples need to be concentrated before they're ready for downstream assays. Lil' Tuna can take a liter of dilute sample and bring it down to 192 mL – or even lower with a subsequent concentration step.



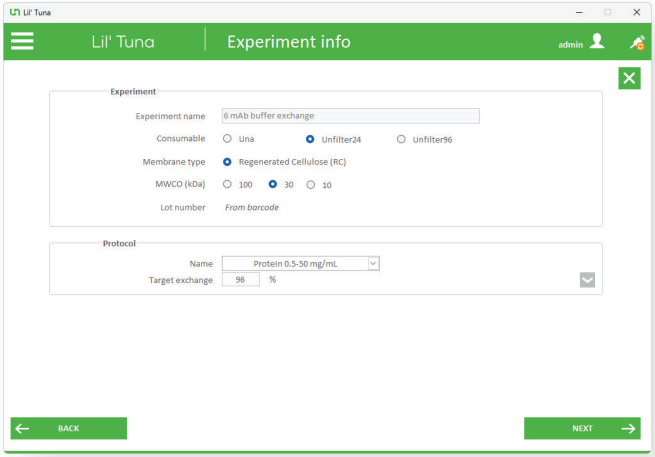
Tackle thick exchanges

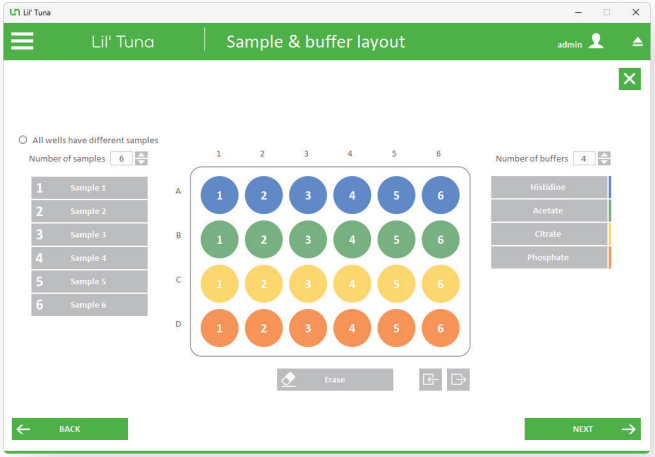
High viscosity means longer buffer exchange times – but Lil' Tuna has a fix for that. By adding exchange buffer before the first pressurization step, samples flow efficiently and viscosity stays in check throughout the run.



Swim through setup

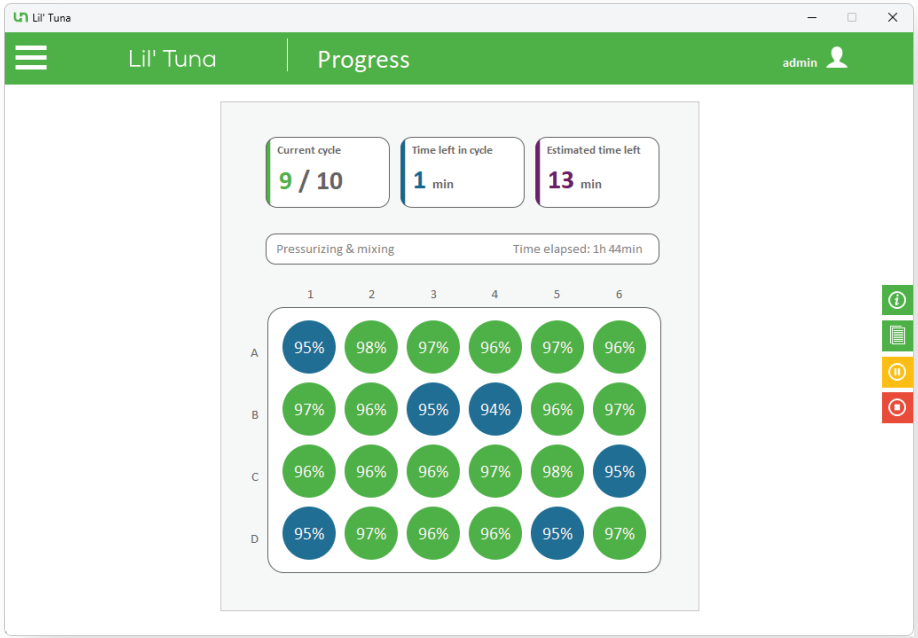
Setting up a run on Lil' Tuna is super simple. Quickly design your exchange in the software – set your target exchange percentage and volume, then click and drag samples and buffers into each well. The pipette guide shows you what to load where so there's no guess work when handling multiple samples. Set your loaded plates or Unas on the stage, fill your buffer bottles, hit start, and Lil' Tuna sets sail.





Check your line

Check back whenever you want – Lil' Tuna tracks exchange cycles completed, current filtration status, percent exchanged per sample, and estimated time remaining. If some samples finish early, pause the run to pull them out while the rest keep going. Either way, Lil' Tuna tells you when it's a wrap.



Sync up the whole school

Lil' Tuna seamlessly integrates into your automated lab with API software, a sample stage designed for easy access and simple template import functions. Link up Lil' Tuna to analytical tools and workflows solutions – Lil' Tuna swims in perfect unison with any automation setup.

Specifications

Application	
Buffer exchange volume range	Una: 0.45-8 mL Unfilter 24: 0.45-8 mL Unfilter 96: 100-450 µL
Formulations	Up to 6 formulations in parallel
Samples	Una: up to 6 samples in parallel Unfilter 24: up to 24 samples in parallel Unfilter 96: up to 96 samples in parallel
Sample types	Antibodies and other proteins, nucleic acids, viral vectors
Exchange time at full volume (96%, at 10 mg/mL IgG)	Una: 4.5 hours* Unfilter 24: 4.5 hours* Unfilter 96: 3 hours*
Protein concentration (range)	Up to 200 mg/mL*
Dispense precision	<300 µL: ≤3 µL 0.3–8 mL: ≤1%
Target concentration accuracy	± 10%*
Sample recovery	≥96%*
System	
Volume measurement	Ultrasonic sensor
Exchange pressures	15–60 psi
Operating temperature	Room temperature
Buffer exchange orbital mixing	Unfilter 24 and Una: optimized at 700 rpm Unfilter 96: optimized at 875 rpm Duty cycle programmable
Physical	36.8 cm W x 57.8 cm D x 37.2 cm H, 38.4 kg (instrument)
Electrical	Voltage 100-260 VAC, 50-60 Hz
Nitrogen or CDA requirement	Pressure 0.55–0.9 MPa (80–130 psi)
Consumable	
Una	10, 30, and 100 kDa, regenerated cellulose 30 and 100 kDa polyethersulfone
Unfilter 24	10, 30, and 100 kDa, regenerated cellulose
Unfilter 96	3, 10, 30, and 100 kDa, regenerated cellulose

* Sample and formulation dependent

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Rev A