UNCHAINED LABS

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BIG TUNA

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Cut loose from manual buffer exchange

Buffer exchange and sample concentrationare the time consuming, hands-on chores you have to deal with before all the things you really want to do. Big Tuna is a fully automated, high-throughput buffer exchange platform used to formulate, concentrate and clean up proteins or gene therapy vectors like AAVs, LNPs, and VLPs – with less than 15 mins of setup time. Skip the slow and manual ways of prepping samples to free yourself up for other critical work.

AAV

LNP

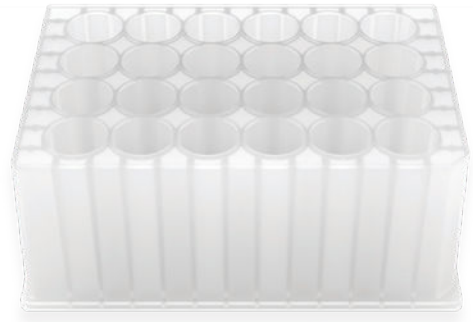
VLP

mRNA & DNA

Protein

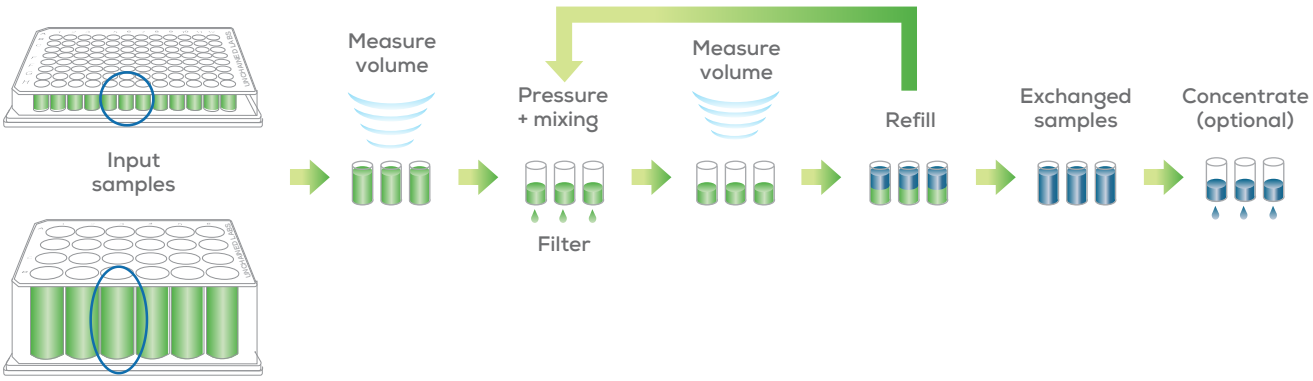
Go big or keep it small

Big Tuna serves up two different plate-based formats that let you exchange and concentrate 24 or 96 samples in parallel. Use Unfilter 96 to exchange as little as 100 µL for up to 96 different samples in a run. Unfilter 24 lets you go big and exchange as much as 8 mL on up to 24 samples. With different molecular weight cutoff options, you always have the right Unfilter for the job.



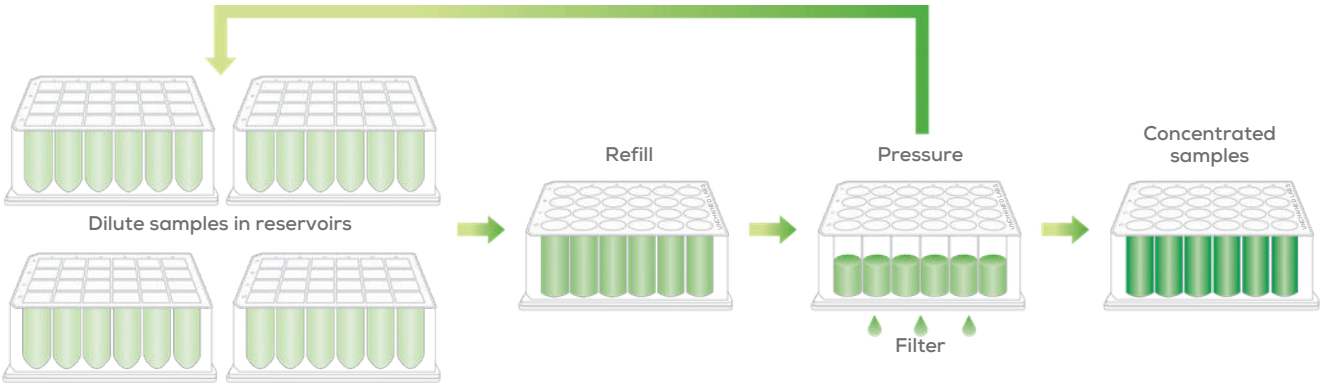
Hand it off

Big Tunakeeps buffer exchange even across the plate with its unique pressure-based UF/DF process and gentle mixing. Its acoustic sensor measures the volume in every well before and after each cycle to track every sample's exchange rate. Then Big Tuna figures out on the fly how much buffer to add to even things out.



Get concentrated

Dilute samples are a giant pain and hard to handle. Big Tuna can concentrate up to 24 samples from 48 mL down to 8 mL – freeing you from all the fuss. Follow up with buffer exchange to easily get your AAVs and other low-concentration, high-volume samples right where you need them to be.

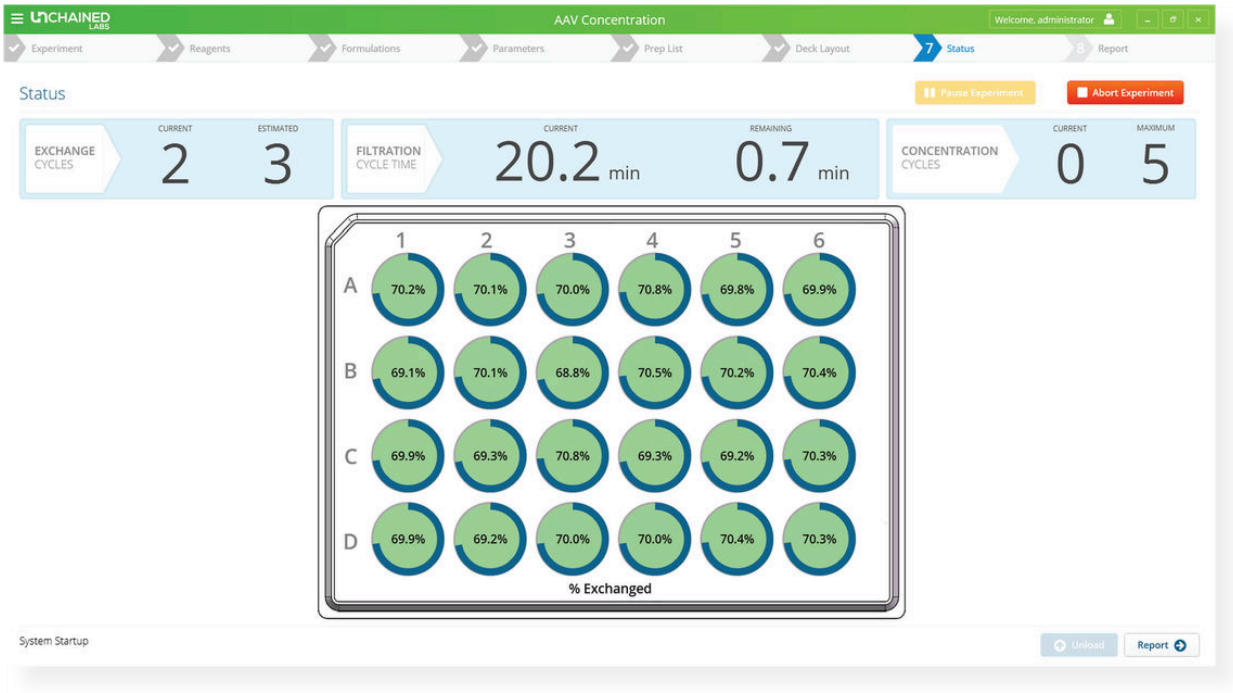


Be a control freak

Buffer exchange doesn't have to be a shot in the dark or keep you anchored to the bench. Use the software wizard to drag and drop your samples and buffers into place, then let Big Tuna guide you through all the ways you can customize the run so it's just right for any sample type. The easy setup means you'll have more control over your experiment with way less hands-on time.

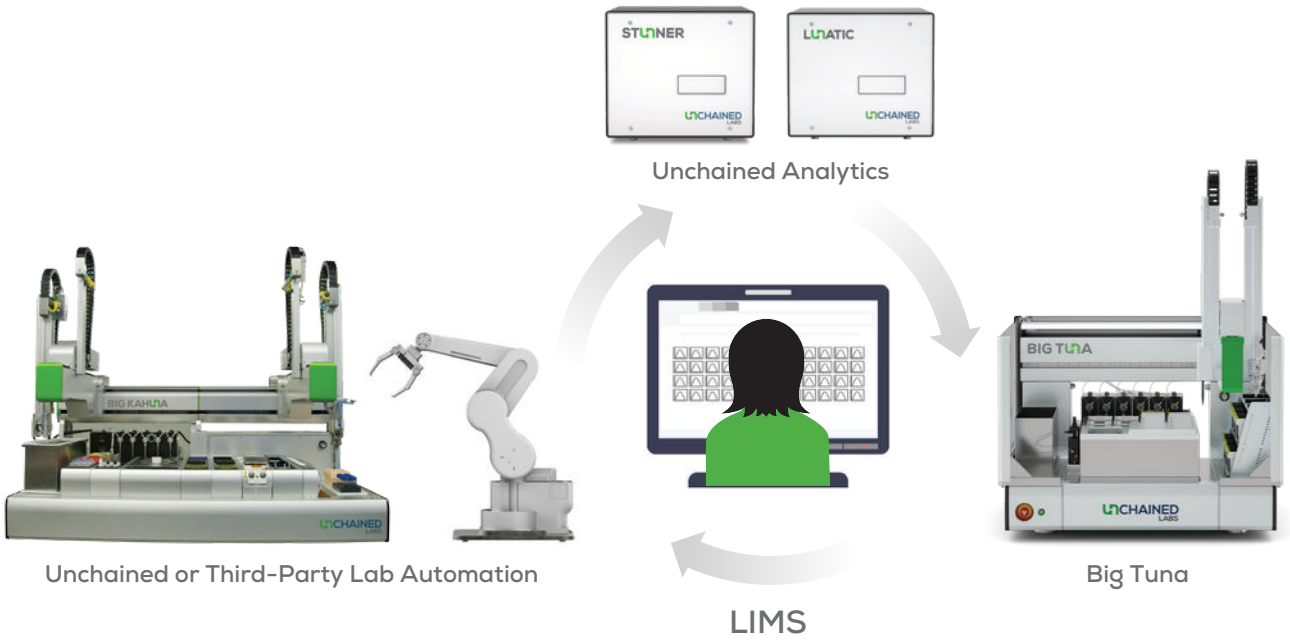
Know it all

Load up yoursamples knowing they're in good hands. Big Tuna will tell you where to put everything and how much buffer you'll need. You can check in on progress at any time and know exactly when your exchange and concentration runs will be done. Ditch babysitting your buffer exchange and go do what you really want with your time.



Hook up with other fish in the sea

Big Tuna's SILA-2API, data import capabilities and open deck make integrating with your up and downstream automation smooth sailing. Easily integrate with your other Unchained Labs tools or link it up to existing third-party systems – Big Tuna always plays nice. Now you can have high-throughput buffer exchange that swims along with the rest of your school.



Specifications

Application	
Buffer exchange volume range	Unfilter 24: 0.45–8 mL Unfilter 96: 100–450 µL
Formulations	Unfilter 24: Up to 24 formulations in parallel Unfilter 96: Up to 96 formulations in parallel
Sample types	Antibodies and other proteins, nucleic acids, lipid nanoparticles (LNPs), adeno-associated viruses (AAVs), virus-like particles (VLPs)
Exchange time at full volume (96%, at 10 mg/mL IgG)	Unfilter 24: 4.5 hours* Unfilter 96: 3 hours*
Protein concentration (range)	Up to 200 mg/mL*
Target concentration accuracy	± 10%*
Sample recovery	≥96%*
System	
Volume measurement	Ultrasonic sensor
Exchange pressures	15, 30 or 60 psi
Operating temperature	Room temperature
Buffer exchange orbital mixing	Unfilter 24: Optimized at 700 rpm Unfilter 96: Optimized at 875 rpm Duty cycle programmable
Physical	96 cm L x 81.2 cm D x 130 cm H, 220 kg (instrument) 160 cm L x 100 cm D x 198 cm H, 270 kg (instrument and table)
Electrical	Voltage 100–260 VAC, 50–60 Hz
Nitrogen or CDA requirement	Pressure 0.55–0.9 MPa (80–130 psi) Flow rate 0.25 L/s (0.5 cfm) minimum
Consumables	
Unfilter 24	24-well plate, up to 8 mL per well 10, 30, 100 kDa, regenerated cellulose
Unfilter 96	96-well plate, up to 450 µL per well 3, 10, 30, 100 kDa, regenerated cellulose
Disposable tips	1000 µL non-filtered, automatic re-use up to 12 times per exchange
Dispense precision	<300 µL: ≤3 µL 0.3–8 mL: ≤1%

*Sample, formulation, and setting dependent.

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