

# BIG TUNA



**UN**CHAINED  
LABS

## Cut loose from manual buffer exchange

Buffer exchange is the time consuming, hands-on chore you have to deal with before all the things you really want to do. Big Tuna automates the entire tedious process and puts all the control at your fingertips. Exchange one protein, 96 or anything in between. It handles big and small volumes with high precision, so you'll sail through exchanges without a hitch.

**1 – 96** formulations

**0.1 – 192** mL sample

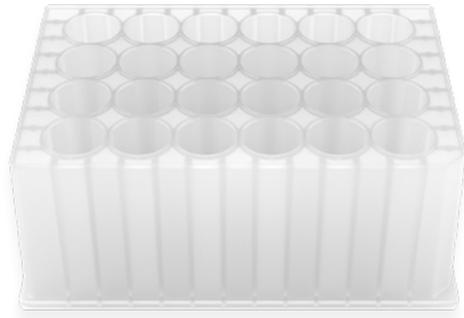
**30** min hands-on time

Up to **200** mg/mL protein



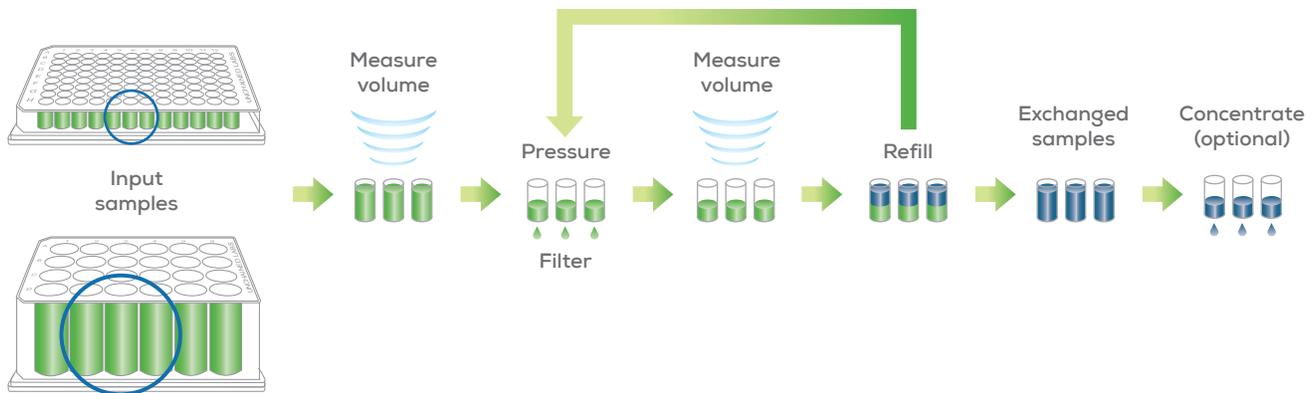
## Go big or keep it small

Big Tuna serves up two consumables to tackle any volume requirement. Use Unfilter 96 to exchange as little as 100  $\mu\text{L}$  on as many as 96 different samples at the same time. Unfilter 24 lets you go big and exchange as much as 8 mL on up to 24 samples. No matter how you roll, Big Tuna can handle it.



## Always come out even

Big Tuna keeps buffer exchange even across the plate with its unique pressure-based UF/DF 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.



## Be a control freak

Buffer exchange doesn't have to be a shot in the dark or keep you anchored to the bench. Big Tuna gives you full, hands-off control over how efficiently the process happens. Take it slow and easy with delicate proteins or fast-track the sturdy ones. Big Tuna nails the final protein concentration and gets you to next steps quicker.

The screenshot displays the 'Instrument Parameters' configuration screen in the UNCHAINED software. The interface is divided into several sections: 'Protein Volumes', 'Exchange', 'System', and 'Error Recovery'. The 'Exchange' section is highlighted with a green box, and a callout window provides a magnified view of its settings.

**Exchange Section Settings:**

- TARGET EXCHANGE %: 96.0 %
- EXCHANGE IS COMPLETE WHEN:
  - Average % exchanged for replicate wells  $\geq$  target
  - % exchanged for every well  $\geq$  target
- SAMPLE CONCENTRATION RANGE: Custom
- TARGET REMOVAL PER CYCLE: 33% Removed
- CYCLE DURATION ADJUSTMENT:
  - Based on Average
  - Based on Maximum

**System Section Settings:**

- MIXING SPEED: 700.0 RPM  Use Recommended Setting
- MIXING DUTY CYCLE: 100%
- TIP REUSE:  Allow tip reuse

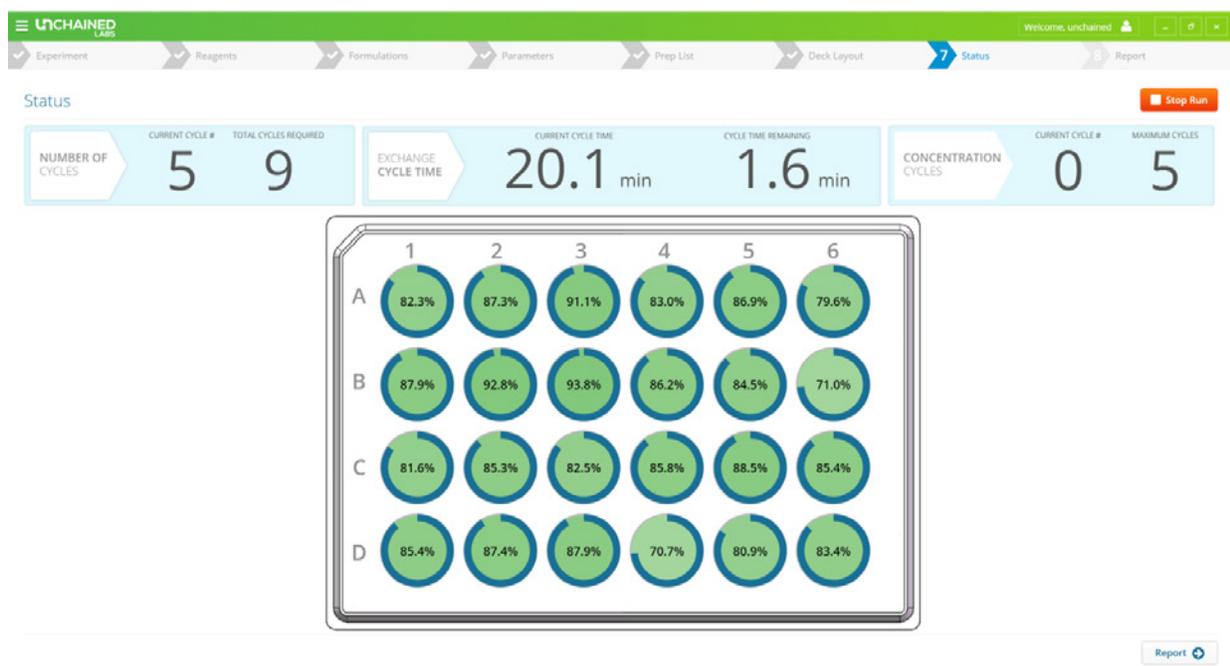
**Error Recovery Section Settings:**

- INITIAL VOLUME MEASUREMENT FAILURE:  Automatic,  Manual
- POST FILTRATION VOLUME MEASUREMENT FAILURE:  Automatic,  Manual

Navigation buttons at the bottom include 'Cancel', 'Previous', 'Save', and 'Next'.

## Know it all

You'll be a Big Tuna expert on the first try. Use the software wizard to drag and drop your proteins and buffers into place – Big Tuna handles the rest. It'll tell you exactly where to put everything else and how much buffer you'll need. After the run starts, check in on progress anytime and know exactly when your exchange is done.



## Specifications

Application	
Buffer exchange volume range	Unfilter 24: 0.45-8 mL Unfilter 96: 100-450 $\mu$ L
Formulations	Unfilter 24: Up to 24 formulations in parallel Unfilter 96: Up to 96 formulations in parallel
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	$\pm$ 10%*
Protein recovery	>96%*
System	
Volume measurement	Ultrasonic sensor
Exchange pressure	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 40 L/s (85 cfm) minimum
Consumables	
Unfilter 24	24-well plate, up to 8 mL per well, 10 kDa, regenerated cellulose
Unfilter 96	96-well plate, up to 450 $\mu$ L per well, 10 kDa, regenerated cellulose
Disposable tip	1000 $\mu$ L non-filtered, automatic re-use up to 12 times per exchange
Dispense precision	<300 $\mu$ L: $\leq$ 3 $\mu$ L 0.3-8 mL: $\leq$ 1%

\*Protein and formulation dependent.



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