

ACOUPTRAP

PRODUCT SHEET

Automated handling of cells and extracellular vesicles

The AcouTrap is a benchtop research instrument for sample preparation of cells, extracellular vesicles, bacteria and viruses from a range of different media.

The bioparticles are captured in an acoustic trap using gentle sound waves, maintaining particle integrity. The system is excellent for enrichment and purification as well as performing rapid reactions such as staining and antibody labeling. Mixing is enhanced by the acoustic streaming in the AcouTrap, thereby shortening incubation times.

The AcouTrap platform operates on standard 96-well microplates or microcentrifuge tubes. The system is automated and rapid, generating output samples with high quality, high throughput and high cell viability.

The trapping unit is available in two different designs, optimized for handling small and medium number of cells or extracellular vesicles.

FEATURES

- Automated sample processing
- Cell recovery > 90% with maintained viability
- Live viewing for process monitoring
- Compact benchtop design
- Automated cleaning and priming cycles

Trapping unit	Small	Medium
Max. cell capacity*	100,000	500,000
Flow rate (μL/min)	15 – 100	50 – 300
Cell viability (%)**	99.3	98.9

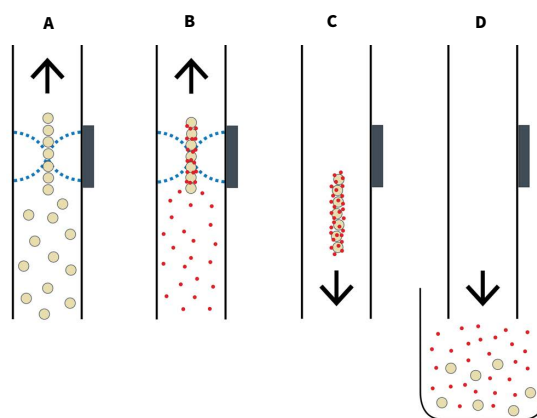
* Measured with cultured Jurkat cells.

** Compared to the input sample.





The central part of the system is an acoustic trapping unit where standing waves are used to trap and hold particles, cells or vesicles against a fluid flow. The acoustic forces can hold cells or polymer microbeads at sizes down to a few micrometers. For smaller particles, e.g. bacteria, extracellular vesicles or nanoparticles, larger polymer seed particles are initially trapped (A) and smaller objects are drawn to these particles by secondary acoustic forces (B). When the ultrasound is turned off (C) and the sample is ejected, the particles dissociate (D).



TECHNICAL SPECIFICATIONS

Dimensions

51 x 38 x 37 cm³ (width x depth x height)

Weight

22 kg

Power requirement

24 V DC, 5 A

Fluid control

High precision syringe pump with 1 mL syringe

External reservoirs for buffers, waste and cleaning agents

Five 125 mL bottles

Microplate and microcentrifuge tube compatibility

Designed for use with standard microplates (96-well and other common formats) as well as 1.5 mL or 0.6 mL microcentrifuge tubes

Reagents

The AcouTrap system runs on standard PBS solutions and common cleaning agents.

ABOUT ACOUSORT

AcouSort

AcouSort is an innovative medical technology company developing critical components for instrumentation used in the diagnostics, analytics, and cell therapy processing markets. Our acoustofluidic-based products allow for gentle and automated refinement of blood and cell culture components.

Strategic Collaborations

Our OEM components provide instrumentation manufacturers with a state-of-the-art ability to integrate automated sample processing steps that traditionally have to be performed manually. AcouSort frequently engages in joint development projects with leading Life Science companies.