

Recent success in cell and gene therapies offers hope for many patients suffering from difficult-to-treat diseases. But without new tools in the form of innovative processing equipment, manufacturers will not be able to move forward quickly to help patients.

FloDesign Sonics recognizes that to move cell and gene therapy forward, manufacturers must develop robust, closed, and automated commercial processes. Innovators need bioprocess equipment that is flexible and adaptable to broad and evolving process needs. Solutions must also be modular so unit operations can be connected, combined, and scaled. Finally, cost of goods and product quality are critical to success.

In working with clients, we identified four areas where improvements will result in maximum benefit to manufacturers and ultimately patients. These four areas were considered when developing our ACP platform; simplification, scalability, cost reduction, quality. Simplification is realized by a system with a modular design, capable of adapting to several key operations all with the same control interface and acoustic technology. The acoustic platform also addresses scalability by meeting requirements for both allogeneic and autologous processes. Costs are addressed by reducing time consuming inefficiencies and expensive materials in the case of affinity cell selection. Finally, quality is improved by reducing stress on cells and the acoustic mechanism is magnetic bead free.

Our acoustic technology is unique, disruptive and broad-based. It will help the industry simplify work-flows, and reduce costs. The closed, automated platform ensures scalability and acoustics are applied in gentle way, minimizing cellular stress

Acoustic Cell Processing (ACP) Offers:

- **Simplification;**
Modular, flexible design
- **Scalability;**
One technology all scales
- **Reduce costs;**
Efficient, no magnetic beads
- **Improved quality;**
Low shear, no magnetic beads

New demo system for Acoustic Concentration and Washing (ACW) applications



Acoustics Cell Processing is a new tool that enables the critical transition from manual, high-touch, open manufacturing operations to an integrated commercial process. Gentle forces created using ultrasonic waves manipulate cells for a variety of unit operations such as concentrate-wash, affinity selection, or other separations.

Acoustic flow cartridges, are single-use consumables that are closed and easily automated. Different acoustic cartridges are designed for different unit operations or process parameters; this provides modularity and flexibility to the platform needed for integration and automation.

Areas we are currently advancing:

- Concentration-wash, volume reduction
- Affinity selection
- Perfusion cell retention
- Density gradient fractionation
- Transduction enhancement



Concentrate-Wash technology matched to your processes

- Flexible Kit—acoustic cartridge matched to your process step, feed volume, cell count, and final volume target
- Gentle and Benign—No shear forces or compacted cell pellet
- Reduce Contamination Risk—Gamma irradiated kits and fully-closed operation

Affinity cell separation technology without magnetic forces

No Magnets Bring New Possibilities

- Use reagents or beads that do not have to be paramagnetic
- Scalable acoustics path lengths can provide larger throughputs
- Multiplexed selection using different size bead-antigen combinations