

# LevitasBio

## Empowering the Next Generation of Advanced Cellular Analysis

**D**ata analytics has become a crucial aspect of biotechnology as it empowers companies to identify and overcome future challenges and avoid unambiguous decisions. Most biotech companies and their research teams nowadays focus on analytical laboratory procedures that involve pre-processing and pre-formulating a high volume of samples to generate accurate results. But the current sample preparation methods are enormously damaging and harmful to cells in the samples. The biological actuality of these samples is often destroyed, leading to muddled results. The precision of the analytical processes depends upon samples that are as pure and close to their natural biology as possible, and LevitasBio—provider of the world's first Label-Free cell separation technology—is alleviating this complication by providing a sampling process that skips the harsh treatment the samples undergo before analysis.

Taking inspiration from George Whitesides' resonance spectroscopy and chemical analysis methods, LevitasBio has developed an innovative approach for isolating and characterizing cells. For sampling processes, researchers will typically need to identify and label particles, for which they generally use dyes or labels, which naturally modifies the cells. Researchers also employ mechanically stressful and time-consuming techniques for separating the cells, such as high-pressure separation or mechanical collection with metallic beads, which damage the samples. While these shortcomings are challenging to overcome individually, LevitasBio mitigates all of them with its

next generation solution. Martin Pieprzyk, CEO of LevitasBio, says, "We start with a native biological sample, and enable the researchers to process and analyze the sample in a way that doesn't cause any damage, and doesn't change the state of the sample itself."

Their flagship solution, theLeviCell platform, enables researchers to avoid an invasive labeling process and harsh mechanical manipulation. It utilizes a levitation process which separates the cells gently, without any chemical or mechanical operation. Paul Steinberg, Chief Commercial Officer, adds, "All scientists want to capture natural biology as much as possible. Our platform doesn't stimulate them in any way that changes their gene expression profiles from that of natural human biology." Another important feature of this technology is its speed and ease of use, empowering customers to conduct the entire process within 20 minutes. And when it comes to biological assays, the quicker the process, the more precise the results.

A speedier sampling process results in the avoidance of unnecessary cell death.

LevitasBio launched their LeviCell platform last summer, in the middle of a pandemic, but has put processes in place to secure high initial customer adoption regardless. While companies in the life-science industry generally rely upon face-to-face interactions, on-site visits, and technical support,

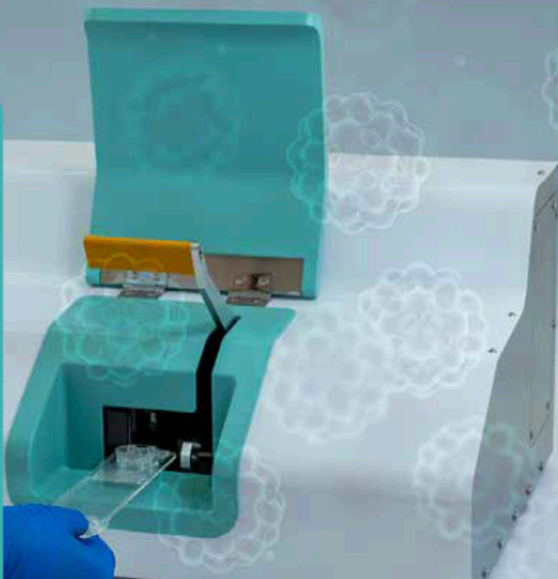
LevitasBio was able to install systems for customers and conduct demonstrations remotely. Additionally, LevitasBio applied its technology directly to the global problem at hand, by empowering scientists to cleanly isolate viable alveolar type II cells which are central actors in the progression



Paul Steinberg

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of SARS-CoV-2, a sensitive cell type which cannot be easily enriched by other methods. LevitasBio is an up-and coming name in the biotechnology industry, and one institution that has leveraged its technology to improve its operations is the National Cancer Institute (NCI).

NCI has access to and deals with vast banks of frozen blood and tissue samples from different patients. NCI initially employed traditional freezing methods for the samples, but only a few cells survived the process. The company needed a solution that could enrich the viable cells from frozen samples that are highly valuable and sensitive to handling.



LevitasBio solved this problem and offered LeviCell to NCI for extracting viable cells from frozen samples.

Since their commercial release in June 2020, LevitasBio has become an exciting new player

in the sample preparation space, progressing science through their ability to elevate sample analysis. The company now has plans to expand their portfolio with high throughput analysis and separations by the end of this year. LevitasBio also aims at moving towards analytical paths that will empower researchers to process and isolate cells and determine their count, types, and abilities. The company aspires to advance its technology to fulfill the unmet requirements of sampling processes and help companies make their research more efficient. As Steinberg concludes, "We want to provide them an optimized protocol with all the reagents, consumables, and optimization that they need to either accelerate or improve their operations." 