



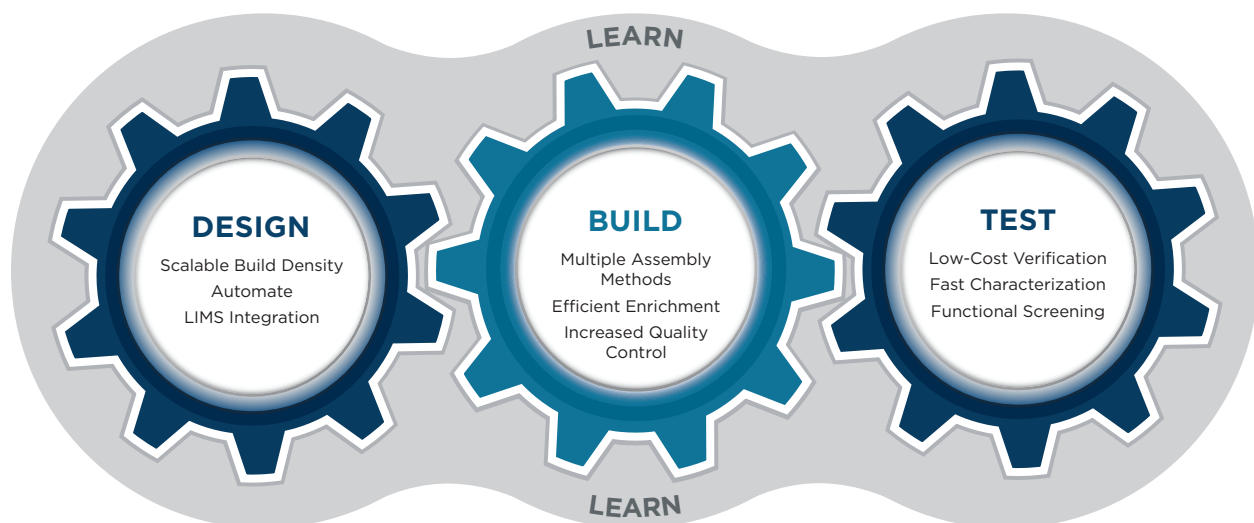
Streamlined Synthetic Biology with Acoustic Liquid Handling

Benefits of the Echo Liquid Handler

- Reduce input sample to femtomolar levels
- Cherry-picking capability results in unparalleled speed and accuracy of assembly
- Miniaturize gene assembly reactions up to 100-fold
- Increase cost savings and throughput of TXTL cell-free expression validation
- Streamline NGS verification of assembly with Echo system-enabled workflow

Interchanging modular pieces of DNA is the preferred method for many DNA construction workflows due to decreased synthesis cost and faster progression along the design, build, test, and learn cycle. The Echo Liquid Handler has demonstrated the ability to generate DNA constructs using various assembly chemistries in combination with these modular pieces in a miniaturized workflow. Traditional DNA assembly methods require reaction volumes of 10-20 microliters, which can be reduced up to 100-fold using the Echo Liquid Handler. Beyond the significant cost savings the reduced assembly volumes provide, the Echo Liquid Handler integrates seamlessly into many aspects of the iterative cycle further driving your projects towards their goals.

Miniaturizing Build with the Echo Liquid Handler Enables more Design, Test, and Learning



The Echo Liquid Handler enables lower-cost methods and workflows to quickly produce high-quality synthetic DNA constructs, which expands design-based testing with higher throughput and allows the scientist to investigate a broader biological landscape.

“(The Echo) is an extremely fast instrument...a significant savings in terms of time. We’ve been able to compress pipelines that take about 12 hours to about 3 hours.”

Dr. Sunil Chandran, Amyris Biotechnologies

For More Information

Customer Publications

- Smart DNA Fabrication Using Sound Waves: Applying Acoustic Dispensing Technologies to Synthetic Biology. Kanigowska *et al.* Journal of Laboratory Automation. 2015:1-8. doi:10.1177/2211068215593754.
- Low-Cost, High-Throughput Sequencing of DNA Assemblies Using a Highly Multiplexed Nextera Process. Shapland *et al.* ACS Synthetic Biology 2015 4 (7) 860-866. doi:10.1021/sb500362n.
- Engineering DNA nanotubes for resilience in an E. coli TXTL system. Klocke *et al.* ACS Synthetic Biology 2018 3 (1): ysy001. doi: 0.1093/synbio/ysy001.
- Miniaturisation of high-throughput plasmid DNA library preparation for next-generation sequencing using multifactorial optimization. Suckling *et al.*, Synthetic and Systems Biotechnology 4 (2019) 57-66. doi:10.1016/j.synbio.2019.01.002.

Beckman Coulter Life Sciences Application Notes

- Modular DNA Assembly of PIK3CA using Acoustic Liquid Transfer in Nanoliter Volumes.
- Nanoliter Scale DNA Assembly Utilizing the NEBuilder HiFi Cloning Kit with the Labcyte Echo 525 Liquid.
- Miniaturized Multi-Piece DNA Assembly.
- Miniaturization and Rapid Processing of TXTL Reactions Using Acoustic Liquid Handling.



Biomek Automated Workstations are not intended or validated for use in the diagnosis of disease or other conditions. Beckman Coulter Life Sciences genomic reagent kits are for research use only.

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AAG-6239APP11.19