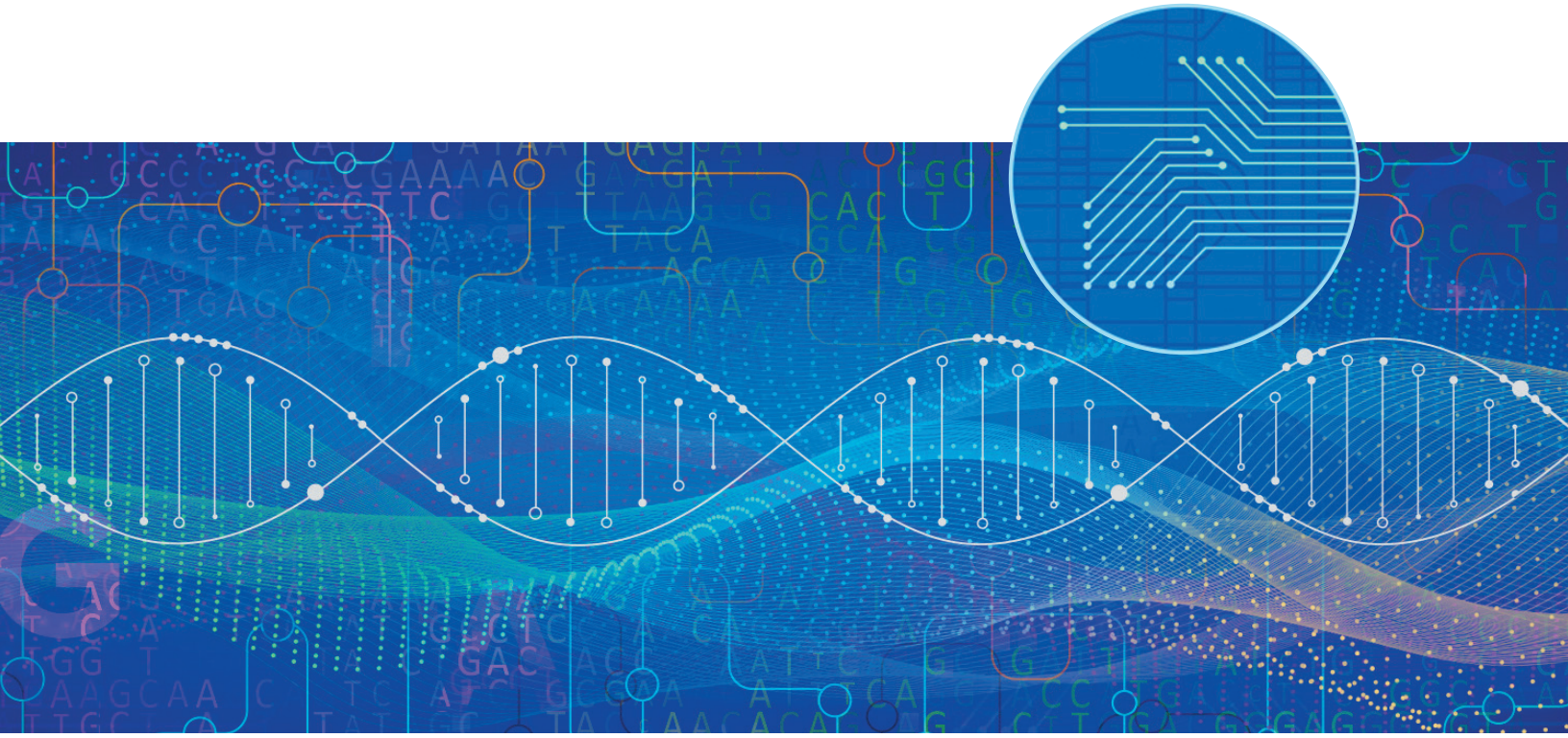


THE POWER OF **MICRO**FLUIDICS

The **power** of **microfluidics**

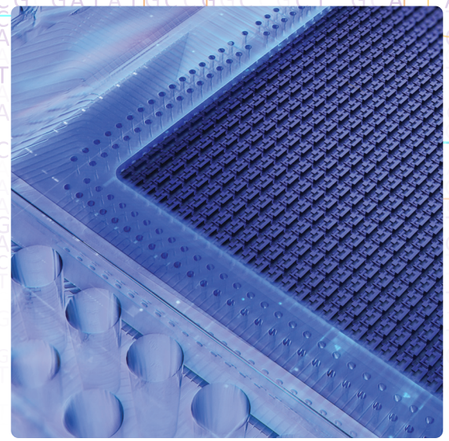
A complete portfolio of system solutions

Comprehensive and versatile genomic analysis with microfluidics technology empowers the production of timely and actionable answers that can transform all genomics studies.

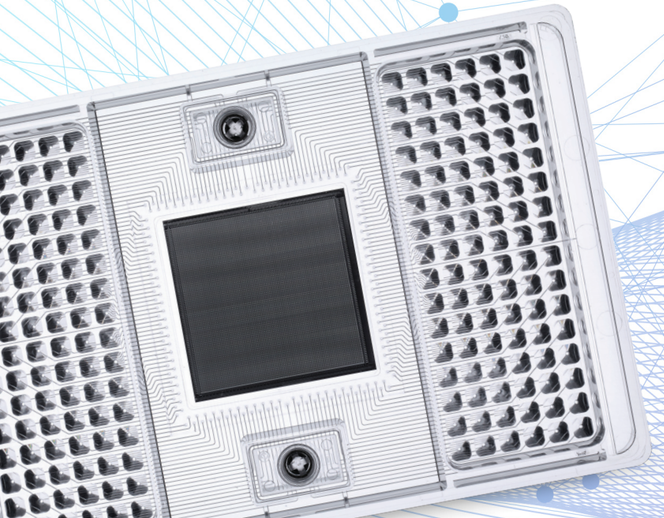
Standard BioTools™ integrated fluidic circuits (IFCs) and instruments have become a foundational technology in genomics labs everywhere. Proven to enable high-complexity analysis with unprecedented proficiency, microfluidics-based solutions streamline workflows for applications demanding sensitivity and broad dynamic range, including genotyping, gene expression, sample identification, copy number variation and NGS library preparation.

Automating molecular biology in nanoliter volumes.

Made for every discovery.
Made for you.

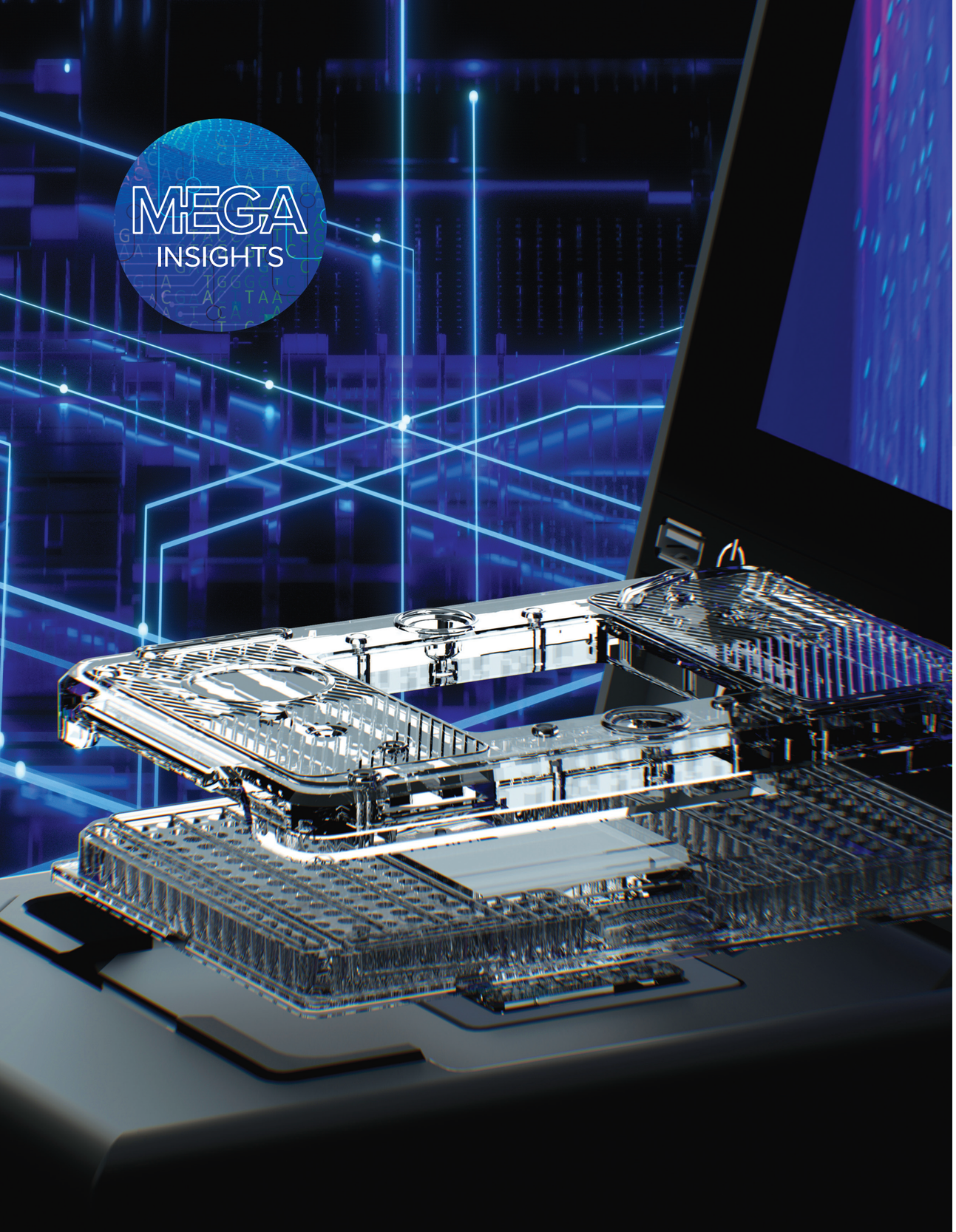


Power your potential to be flexible, be agile and broaden horizons with microfluidics technology, gaining more data for every run.



MICRO FLUIDICS

MEGA INSIGHTS



Powerful solutions that set a new standard for genomic analysis

For the past two decades, Standard BioTools genomics technologies have supported and simplified your research, enabling a more productive, scalable and synchronous lab environment.

Achieve the high-quality, consistent results your work depends on no matter the application. Assay versatility and the capacity to run numerous applications on a single system eliminate the need for multiple platforms, and the nanoliter-volume requirements inherent to microfluidics conserve precious samples and lower costs.

Welcome to the power of microfluidics

Microfluidics technology empowers you to easily tailor a genomic analysis approach that is well-suited to your research goals.

Simplifying your workflow through nanoscale automation maximizes efficiency and provides the flexibility to scale your projects with increased data output. This allows you to adjust your experimental plan to match your needs and your interests with microfluidics-based PCR and NGS library preparation.

Miniaturization

Our IFCs have reduced reaction volumes, meaning you use less of your precious samples and reagents.

Flexibility

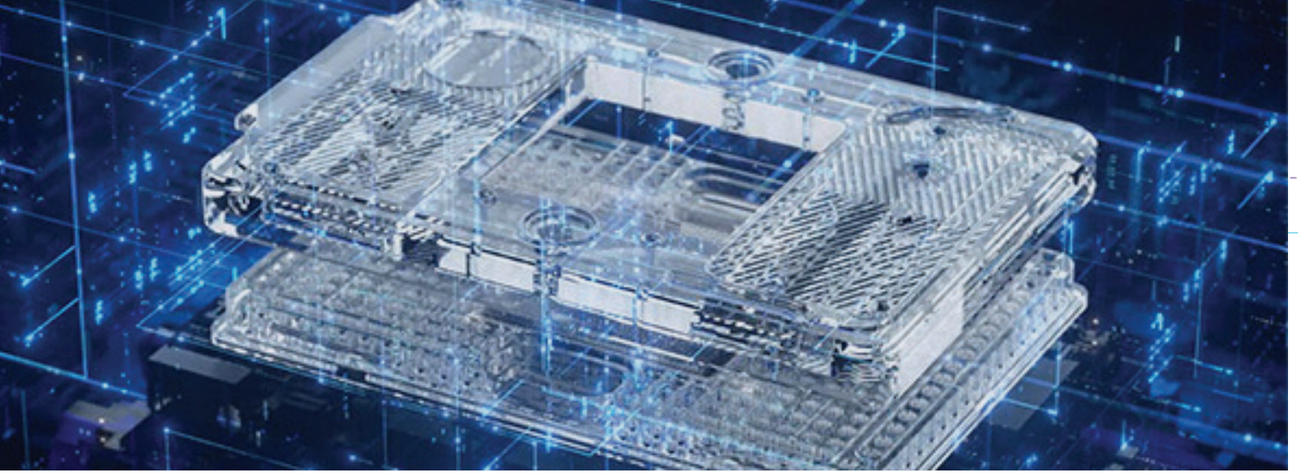
Precision-manufactured IFCs support different configurations of samples and assays for a broad range of applications and the ability to quickly modify or add to an assay.

Scalability

Scalable sample and target options allow from 144 to 9,216 individual reactions per run without the need to change platforms.

Automation

Automated, streamlined workflows provide the added benefits of time savings, ease of use and standardization.



Microfluidic arrays: the IFC

Foundational technology that enables automation of genomics applications in nanoliter volumes

Standard BioTools proprietary microfluidics provide an unprecedented view into biology through innovative genomics solutions.

Perform multiple PCR-based applications including targeted NGS library preparation.

Benefit from flexible and scalable sample throughput without changing technologies.

Achieve lower cost and higher operating efficiency through volume miniaturization and workflow automation.

Add, remove, replace or replicate assays on demand because assays are not fixed or pre-spotted.

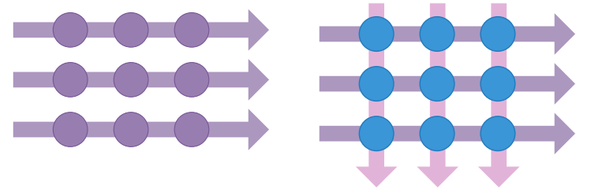
Automation-compatible design enables integration with lab robotic systems.

Automated microfluidics-based workflows for genomic analysis applications help streamline laboratory methods and substantially reduce costs.

How microfluidics technology works

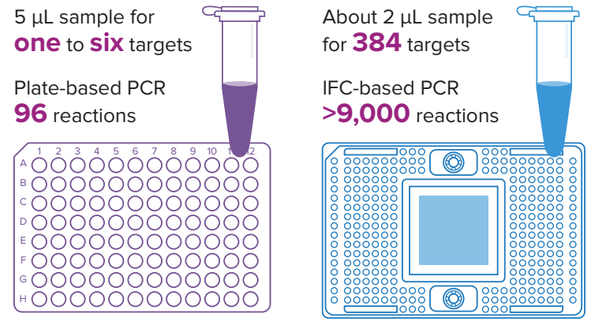
Design

Easy-to-configure complex panels mean fewer design iterations and more time saved. Our D3™ Assay Design Group can also assist you in creating custom assay panels.



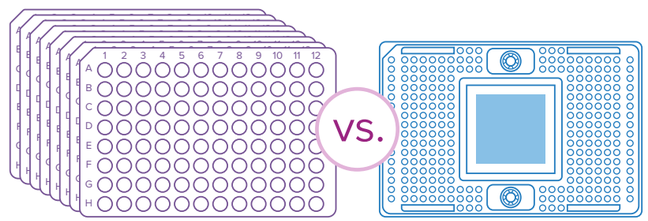
Conserve

About 2 µL of sample can be used for 384 targets, resulting in more than 9,000 reactions and helping you to conserve your precious materials.



Customize

Thousands of nanoliter-scale inlets help your sample go hundreds of times further than with a 96-well plate. Scale throughput without changing technologies, and add, remove or replace assays on demand.



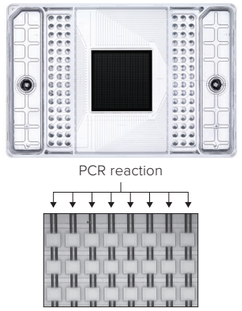
Analyze

Analyze your results with intuitive software.



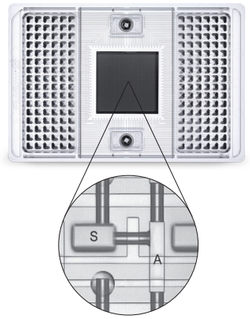
Growing list of capabilities for on-IFC workflows

Evolution of IFC function enabling diverse applications



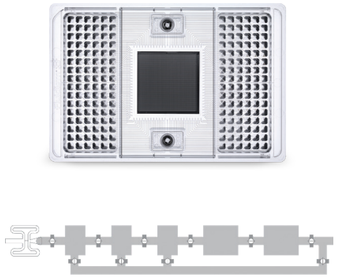
Reaction partitioning

Real-time PCR



Combinatorial reactions

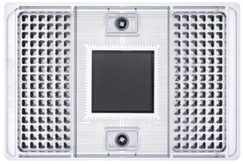
High-throughput fluorescence-based PCR



Capture, multistep reactions and harvest

Single-step capture, multistep NGS library prep, sample-to-answer on-IFC processing with preamplification

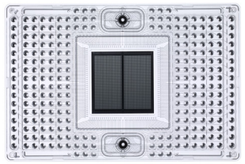
For real-time PCR analysis on the X9 Real-Time PCR System



96.96 Dynamic Array™ IFC for Gene Expression

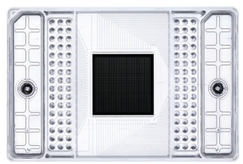
96.96 Dynamic Array IFC for Genotyping

96.96 GT Preamp IFC-X



192.24 Dynamic Array IFC for Gene Expression

192.24 Dynamic Array IFC for Genotyping

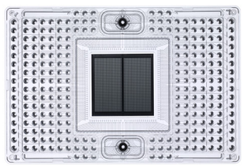


48.48 Dynamic Array IFC-X Real-Time PCR

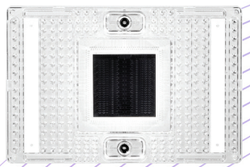
For NGS library preparation on Juno



LP 48.48 IFC



LP 192.24 IFC



48.Atlas™ IFC



A complete portfolio of system solutions driven by automation and microfluidics



X9 Real-Time PCR System

An innovative high-capacity genomics system for superior efficiency

The X9™ Real-Time PCR System enables high data output with more than 9,000 individual nanoliter reactions in a single run, ensuring cost-effective comprehensive sample profiling with minimal operator contribution.

The integration of multiple capabilities into a single platform streamlines workflows and offers unprecedented ease of use across a broad array of applications. In conjunction with an innovative consumables design that ensures both flexibility and scalability, X9 offers a futuristic approach to high-volume genomic data generation that radically improves laboratory operations.



Juno

Universal controller for Standard BioTools IFCs

Using Juno™ you can produce dozens to hundreds of NGS sample libraries daily, enabling accurate sequencing of more samples—faster and more affordably than ever before.

Juno integrates IFC control and thermal cycling to facilitate scalable, automated NGS library preparation for Illumina® sequencers and IFC preparation for gene expression, genotyping and digital PCR applications using the Standard BioTools X9 Real-Time PCR System.



Biomark HD

Reliable production-scale throughput

The Biomark™ HD system offers excellent sensitivity, with a wide variety of sample types and chemistry choices to accommodate the most genomics applications.

Biomark HD is a multipurpose, flexible system utilized in hundreds of peer-reviewed studies. It includes everything you need to produce high-quality data, including analysis software so you make sense of your results.



C1

Automated solution for single-cell genomics research

The C1™ system enables rapid and reliable isolation, processing and profiling of individual cells with high molecular detection sensitivity on a broad menu of multi-omic single-cell assays.

Simple, scalable workflows that promote operating efficiency and reproducibility.



Empowering applications dependent on precision genomics

Better genomic analysis begins with the best reagents.

Enhance your productivity with reagents designed to maximize the power of Standard BioTools systems and reduce costs.



Gene expression

Combining microfluidics technology with optimized reagents produces high-quality results in less time. With a wide range of IFC formats available, scaling from mid- to high throughput with reliable reproducibility on a single system is easily achievable.

Pair Delta Gene™ assays and reagents with EvaGreen® dye for an economical alternative to probe-based detection. Our chemistries work seamlessly with your existing TaqMan® assay library to support both standard and fast protocols.*

Juno | Biomark HD | X9 Real-Time PCR System
48.48 Dynamic Array IFC | 96.96 Dynamic Array IFC
192.24 Gene Expression IFC | 192.24 Dynamic Array IFC
Flex Six™ Gene Expression IFC | 12.765 or 48.770 Digital Array™ IFC*

Genotyping

Genotyping solutions using SNP Type™ or your existing TaqMan assays with optimized reagents offer easy-to-implement, scalable assays that allow for flexible panel design on all Standard BioTools platforms.

Select optimal assays designed for a variety of species using your supplied sequences. Our reagents support TaqMan assays run on Biomark and Juno platforms.

Juno | Biomark HD | X9 Real-Time PCR System
48.48 Dynamic Array IFC | 96.96 Dynamic Array IFC
192.24 Dynamic Array IFC | 192.24 Genotyping IFC | Flex Six Genotyping IFC

Over **15 applications**
using a single technology.

*Biomark HD only

AgBio

Agricultural genomics and animal health solutions include flexible, affordable, high-throughput tools for real-time PCR, genotyping by sequencing, high-marker-density experiments, molecular-assisted breeding, pathogen detection and quality control assessment in plants.



1

Extract DNA from samples (leaves or seeds).



2

Design PCR panels and order using the free Standard BioTools D3 service.



3

Add samples and assays to integrated fluidic circuit (IFC).



4

Perform qPCR and data acquisition using the X9 System.



5

Analyze results.

Example of a PCR workflow with X9

Pathogen detection

High-throughput analysis using microfluidics-based technologies facilitates pathogen detection and characterization with the flexibility to modify panels to match evolving needs and enable detection of new and unexpected pathogens as well as identify multiple pathogens in one assay.

The Advanta™ pathogen detection portfolio can concurrently detect a reference virus and various mutations or multiple pathogens by qPCR and real-time PCR methods.

Up to **9,216 individual reactions** can be run at once.

Immuno-oncology

Revolutionary platforms enable nanoscale molecular biology that significantly minimizes pipetting steps, hands-on time and reagent consumption while maximizing efficiency, cost savings and robust data production for cancer research.

The Advanta IO Gene Expression Assay, used with the Biomark HD system, uses TaqMan chemistry to sensitively measure gene expression, with five reference genes serving as analysis controls. The assay uniquely offers significant workflow efficiencies over traditional gene expression profiling methods. Optimized for formalin-fixed, paraffin-embedded and fresh frozen tumor samples.

Sample identification

Confidently track samples and assess quality by implementing a quick and reliable genotyping workflow based on automated microfluidics. Ensure accuracy and quality from acquisition through data reporting to maximize the integrity of study results.

The Advanta Sample ID Genotyping Panel is a 96-SNP assay enabling laboratories to generate a sample-specific genetic fingerprint and DNA quality assessment from research specimens such as blood, tissue and cell lines throughout the sample journey.



1

Receive or retrieve samples.



2

Extract DNA from sample or retrieve DNA from storage.



3

Add samples and Advanta Sample ID panel to the IFC.



4

Perform real-time PCR and data acquisition using the X9 System.



5

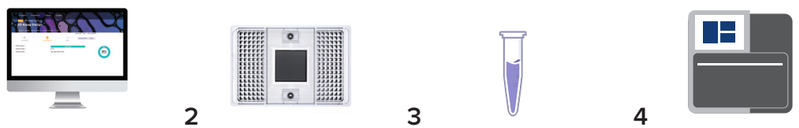
Analyze results.

Targeted DNA sequencing

Achieve economy of scale with ease. Enhance your productivity with our high-performance solutions for robust sample processing in nanoscale reactions that minimize hands-on time and offer significant cost savings. To ensure that your NGS panel always remains up to date, maintain flexible customization capabilities unique to Standard BioTools.

Juno targeted DNA sequencing library preparation system: most flexible throughput, scalable enrichment capabilities. LP 48.48 IFC (up to 48 DNA samples per run and up to 4,800 amplicon targets per sample). LP 192.24 IFC (for 192 unique DNA samples per run and up to 2,400 amplicon targets per sample).

Compatible with all Illumina sequencing systems. Up to 1,536 sample libraries may be multiplexed per sequencing run.



1

Design panel

Enter genes or genomic coordinates online using the D3 assay design portal.

2

Transfer

Transfer DNA samples, assay primers and other reagents to the IFC. Samples and reagents combine controlled reactions via the IFC.

3

Construct libraries

Automate workflow for targeted amplification and sample barcoding within the IFC. Adapter addition and cleanup are completed in a single tube.

4

Sequence

Perform NGS using an Illumina system. With these libraries you have the capability of multiplexing up to 1,536 samples per sequencing run.

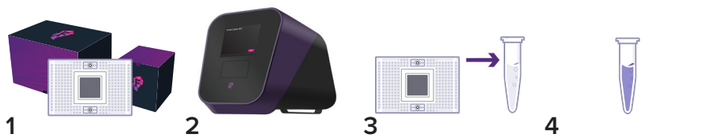
Juno library preparation workflow

Infectious disease

Help advance novel global health solutions for infectious disease. By combining high-quality technologies with optimized assays, we offer a comprehensive approach to successful pioneering research on microbe biology, novel patterns and mechanisms of resistance, emerging pathogen surveillance and the development of unique therapies.

RNA sequencing

Transform your RNA sequencing productivity with nanoscale automation. Designed to drive significant improvement in the RNA-seq workflow, the Advanta RNA-Seq XT NGS Library Prep Kit together with the Juno system provides an integrated solution for automated, cost-efficient NGS library prep.



1

Load RNA, reagents, oligo-dT beads on IFC.

2

Automated IFC prep and processing.

3

Harvest barcoded libraries and pool.

4

Perform cleanup, adapter PCR and QC.

Sequence and analyze.

Single-cell analysis

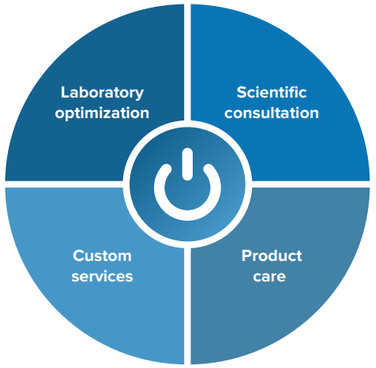
A large variety of single-cell biology methods helps you accomplish more. Achieve highly parallel RNA and DNA analysis from samples containing only a few hundred cells. By integrating and simplifying multiple steps in the single-cell workflow, you can rapidly and reliably isolate, process and profile individual cells for multiple genomics applications.

Single-cell mRNA sequencing: C1 system | Polaris™ Single-Cell Dosing mRNA Seq IFC
Targeted single-cell gene expression: C1 system | Biomark HD system | C1 Single-Cell Preamp IFC
Single-cell miRNA expression profiling: C1 system | Biomark HD system
Single-cell whole genome sequencing: C1 system | C1 Single-Cell Preamp IFC
Single-cell whole exome sequencing: C1 system | C1 Single-Cell Preamp IFC
Single-cell targeted DNA sequencing: C1 system | C1 Single-Cell Preamp IFC



Standard BioTools **PRO** Services

Our dedicated team of experts delivers personalized solutions that enable you to accelerate research and other initiatives, helping to achieve your unique laboratory and business goals.



PRO Services are a comprehensive portfolio of solutions to help you maximize your investment, scale up productivity and empower your laboratory with greater access to professional resources.

Providing **expertise** to **power** insights.

Laboratory optimization

Enhance operational efficiency and productivity.

Our experts help you prepare for technology adoption, streamline workflow and support improvement initiatives.

Scientific consultation

Accelerate research and testing with expert applications support.

Our consultative services and training programs equip laboratories with the tools and knowledge needed to elevate scientific data into actionable insights.

Custom services

Achieve unique goals with tailored services.

Standard BioTools offers unique and highly specialized services tailored to meet specific research and translational needs.

Product care

Maximize system investment and performance.

Our global network of trained experts provides timely support, training programs, compliance services, proactive maintenance and repair services to optimize productivity and performance of your systems.

D3 assay design

Customized solutions to meet your specific research needs

Simplify panel development with the D3 assay design team and website. Powerful algorithms enable you to define parameters for targeted NGS library prep, genotyping and gene expression assays.



1

Define

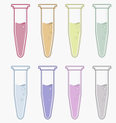
Define your targets.



2

Design

D3 designs an assay panel driven by user-identified parameters.



3

Deliver

We'll deliver the ideal primers for your NGS, gene expression or genotyping research.

MICRO FLUIDICS MEGA INSIGHTS.

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FLDM-00961 Rev 02

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Unleashing tools to accelerate breakthroughs in human health™

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CORPORATE HEADQUARTERS
2 Tower Place, Suite 2000
South San Francisco, CA 94080 USA
Toll-free: 866 359 4354 in the US and Canada
Fax: 650 871 7152
standardbio.com

SALES
North America | +1 650 266 6170 | info-us@standardbio.com
Europe/Middle East/Africa/Russia | +33 1 60 92 42 40 | info-europe@standardbio.com
Latin America | +1 650 266 6170 | info-latinamerica@standardbio.com
Japan | +81 3 3662 2150 | info-japan@standardbio.com
China (excluding Hong Kong and Macau) | +86 21 3255 8368 | info-china@standardbio.com
All other Asia-Pacific countries/India/Australia | +1 650 266 6170 | info-asia@standardbio.com