Genomics Solutions Portfolio

PerkinElmer®
For the Better


WORKFLOW SOLUTIONS
FROM EXTRACTION
TO ANALYSIS

Application-based answers for every step of your workflow

Scientists working in genomics research know that providing higher quality DNA for downstream analysis is a critical aspect of the workflow. Our next generation of DNA analysis solutions reduces the complexity and bottlenecks of nucleic acid quantitation and analysis presented by today's sequencing technologies. We are uniquely positioned to offer technologies upstream and downstream of the genomics workflow, including our automation, microfluidics, and bioinformatics platforms to help scientists analyze nucleic acids efficiently.

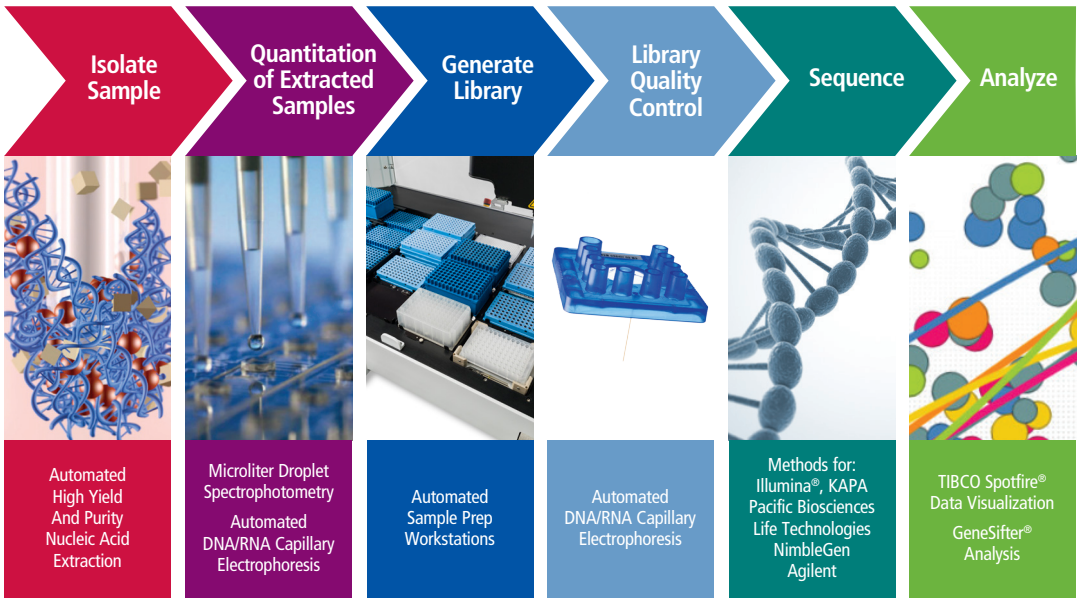
Standardized hardware configurations with prevalidated protocols and instrumentation to measure the fundamental characteristics of nucleic acids provide the flexibility and quality control to support novel approaches and chemistries in the NGS process.

With our best-in-class nucleic acid extraction, liquid handling, sample preparation, DNA/RNA quantitation, library prepartion, and applications expertise, you have an ally who understands your underlying science and can provide the solutions that address the full breadth of your scientific requirements. All from a single-source who delivers the application support you need to be up and productive right from the start.

Applications Support – From DNA to Data

- Next-generation sequencing (whole genome, exome, targeted amplicon sequencing)
- Epigenomics
- Transcriptomics
- cDNA synthesis
- PCR/qPCR
- Sample prep from FFPE
- Genotyping
- De novo assembly and detection of structural variants

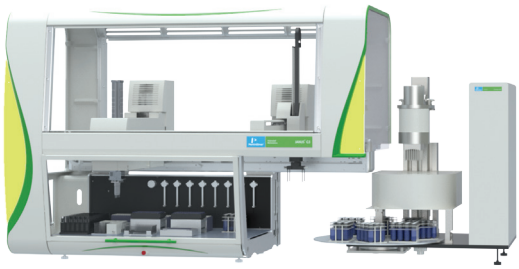
Next-Generation Sequencing Workflow



PRECISE, RAPID EXTRACTION AND QUANTITATION

Getting the highest quality DNA is the critical first step in any genomics sample workflow. You need to be able to extract from a wide range of sample volumes and types and measure for purity, integrity, and concentration.

Our solutions for extraction and quantitation ensure that only DNA/RNA of the highest purity and integrity are used in library generation.



JANUS G3 automated workstation with chemagic 360 instrument

ISOLATE SAMPLE

Automated high-yield nucleic acid extraction

The JANUS® G3 automated workstation with the chemagic 360 instrument combines best-in-class magnetic bead nucleic acid isolation technology with a fully flexible liquid handler to offer reproducible, high-throughput extraction of the highest purity from a variety of blood, plasma, saliva, FFPE, and tissue sample types. The system also delivers unique flexibility in sample volumes (10 µL to 10 mL) and throughput (up to 192 200-µL blood samples in 90 minutes) when compared to alternative platforms. Independent liquid-handling extraction enables additional flexibility for primary sample transfer, sample normalization, and PCR setup.

LabChip Gel Express GX Touch microfluidic platform

QC OF EXTRACTED SAMPLES

Fast quantitative analysis of DNA/RNA samples

Our innovative LabChip® Gel Express (GX) Touch microfluidics technology delivers unparalleled electrophoresis separation for high-sensitivity DNA/RNA analysis, DNA smear analysis, and RNA and gDNA integrity analysis all on one platform, in as few as 30 seconds per sample. The system is available in both a 24-sample platform, saving time and reagent expense, and in an HT platform, accommodating up to 384 wells for high-throughput workflows. You choose the right data output for your application: electropherogram, virtual gel, or data table format. And our exclusive genomic quality score (GQS) and RNA quality score (RQS) offer objective guidelines for determining sample integrity.

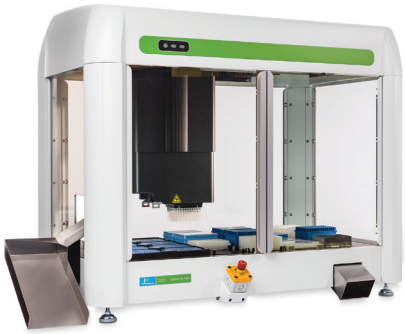
DropletQuant UV-VIS spectrophotometer

Full-spectrum UV/VIS analysis of small droplets

The DropletQuant™ system analyzes 96 samples in under five minutes, even with volumes as low as 1 µL, allowing for fast, full-spectrum assessment of sample impurities before expensive downstream processing begins. The low volume requirement and broad dynamic range (DNA/RNA: 5 ng to 5,500 ng/µL; protein 0.01 to 200 OD) enable the rapid quantitation of samples.

SAMPLE PREP TO ACCELERATE YOUR GENOMICS WORKFLOW

Our next-generation sequencing sample preparation solutions eliminate the processing bottlenecks presented by today's sequencing technologies. Open-platform and application expertise enables support for a diverse set of vendor reagent chemistries across our sample preparation portfolio.

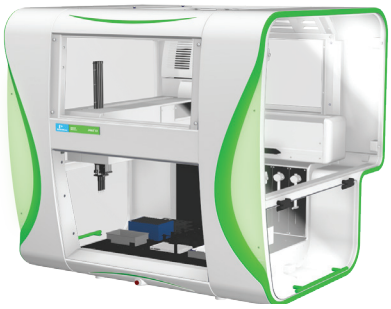


Sciclone G3 NGSx workstation

GENERATE LIBRARY

Sample prep with dozens of validated methods

The Sciclone® G3 NGSx workstation is the high-throughput solution for library prep, sequence capture, and normalization. The system makes it possible to prep samples for up to 480 libraries or 192 exome captures per week, with the flexibility to handle up to 96 samples per run. Plus, the Sciclone G3 NGSx Workstation is a fully enclosed system, so cross-contamination is kept to a minimum.



JANUS G3 NGS Express workstation

Benchtop, adaptable liquid handling

The JANUS® G3 NGS Express workstation uses an intuitive library-prep interface for fragment library preparation, amplicon sequencing, target capture, and sample normalization. It's the perfect complement for benchtop sequencers such as the Ion Torrent PGM™ and MiSeq® systems.

Zephyr G3 NGS workstation

Post-PCR NGS liquid handling made simple

The Zephyr® G3 liquid handling platform is a simple, easy-to-use library prep system specifically designed and preprogrammed to address post-PCR steps in next-generation sequencing sample preparation workflows – magnetic bead-based purifications, qPCR setup, sample normalization, and sample pooling (multiplexing) protocols.

EVERYTHING YOU NEED FROM LIBRARY PREP TO ANALYSIS

SEQUENCE

Eliminate library preparation bottlenecks

Geared toward upfront sample preparation and tracking and downstream data analysis, our solutions offer complete front- and back-end support for commercially available DNA sequencers. We provide NGS chemistries and easy-to-understand methods to support dozens of premier DNA sequencing applications. Our highly experienced staff can walk you through high-throughput library preparation, multiplex barcoding, and target capture. With state-of-the-art sequencing using Illumina HiSeq™ and MiSeq™ instrumentation, and a tiered approach to bioinformatic support, our application services can enhance your ability to focus on critical discovery.

Bioo Scientific, a PerkinElmer company, provides a complete portfolio of NGS library prep and multiplexing kits designed to reduce bias and increase the sensitivity, flexibility, and speed of library prep for:

- Whole genome sequencing
- Targeted resequencing (amplicon panels)
- SNP genotyping
- Metagenome analysis
- Epigenetics
- Gene expression and transcriptome profiling

More than 50 open-platform, automation-friendly library prep sequencing methods get you up and running samples in just one week. You can choose from a large selection of available protocols for the chemistry or sequencing platforms you rely on most, including:

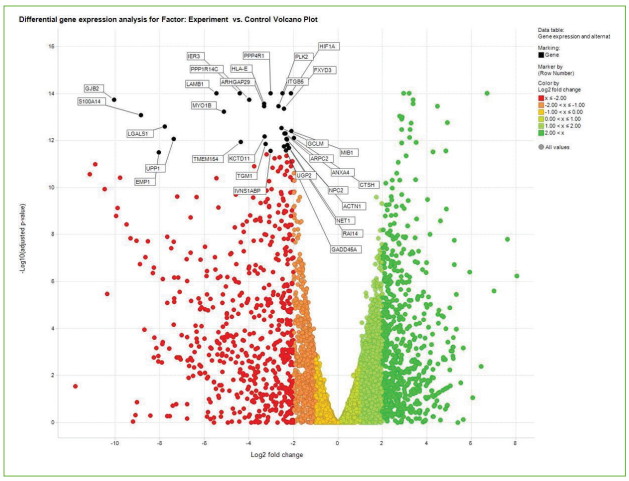
- Agilent
- Bioo Scientific, a PerkinElmer company
- Illumina
- KAPA Biosystems
- Life Technologies
- New England Bio Labs
- NimbleGen
- Nugen
- Pacific Biosystems
- And many more

Methods are available for the JANUS G3 NGS Express, Sciclone G3 NGSx, and Zephyr G3 workstations.

ANALYZE

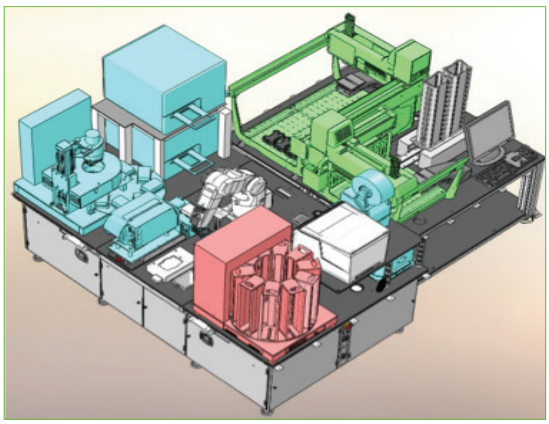
Genomic data visualization and analysis

The OmicsOffice® Suite leverages TIBCO Spotfire® technology's easy-to-use interface to analyze data from large genomic studies, perform comprehensive quality control, and use interactive filtering and visualizations to enhance your data analysis. With OmicsOffice Suite, you can seamlessly integrate advanced statistics and annotation management extracting meaningful biological signals and easily identifying biomarkers and gene signatures – even from your in-house or third party analysis tools. It's an ideal solution for functional genomics, including mRNA expression profiling, biomarker discovery, as well as next generation sequencing applications such as RNA-Seq and ChiP-Seq.



THE INTEGRATED WAY TO BETTER RESULTS

cell::explorer system

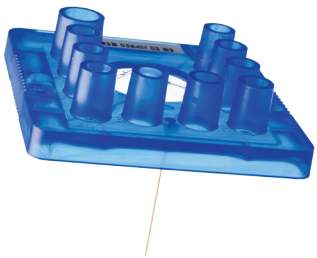


This integrated system includes JANUS automation, LabChip microfluidics, chemagic nucleic acid extraction, plate:handler® barcode labeler and scanner, and a Roche® Lightcycler™.

Explore the possibilities

The cell::explorer™ robotic automation platform leverages our leading liquid-handling extraction and detection expertise to dramatically increase process throughput while improving overall data quality.

The integrated cell::explorer gene pro platform provides walkaway automation for all genotyping processes – everything from DNA extraction and normalization to PCR plate preparation and real-time PCR – all in a compact, space-saving format. And while the cell::explorer platform is an off-the-shelf solution, it's flexible and adaptable to your changing scientific requirements.



LabChip for genomic research applications

Microfluidics made easy

The Gel Express (GX) Touch supports a complete portfolio of quantitative DNA and RNA assays for fragment and NGS smear analysis. Assays vary in size and sensitivity range, depending on the application. For example, the LabChip DNA NGS 3K assay offers the highest sensitivity for low-input samples at very low concentrations (5 to 500 pg/µL) – exceeding that of other DNA fluorescent-labeling technologies.

StorPlate-96V microplate

Application-specific consumable kits

Take the hassle out of buying consumables for your Sciclone G3 NGS/NGSx workstation with customized application-specific consumable kits. These kits provide exactly what you need to run sample preparation workflows for standard reagent platforms. That means less time and money wasted and greater productivity. Sciclone G3 NGS and NGSx workstations run from eight to 96 samples (in multiples of eight). The number of plates, lids, and reservoirs required to complete the run is constant, regardless of the number of samples.

For Research Only. Not for use in diagnostic procedures.

For more information, please visit www.perkinelmer.com/genomics

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