The CytoScan 750K Accel Array

Offering a two-day workflow for accelerated cytogenetic analysis

The newly launched Applied Biosystems™ CytoScan™ 750K Accel Array delivers enhancements in workflow, flexibility, and expanded coverage with the same reproducibility and reliability you expect from the legendary Applied Biosystems™ CytoScan™ Cytogenetics Suite.

Propel your cytogenetics analysis with up to 100% faster turnaround time

Advance your research at a faster pace by reducing the turnaround time for chromosomal microarray analysis (CMA) workflows. The CytoScan 750K Accel workflow enables significant time savings at almost every step from digestion through labeling. The accelerated workflow takes just **two days from sample to insights**, potentially helping you to improve productivity by up to 100%.
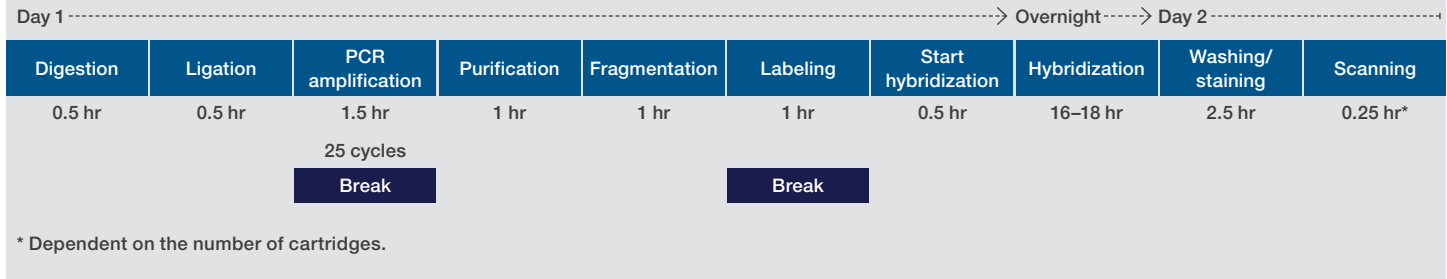
The CytoScan 750K Accel Suite is an advanced CMA solution that includes the CytoScan 750K Accel Array, a reagent kit, and the Applied Biosystems™ GeneChip™ System 3000 platform

for array processing. Also included is intuitive and user-friendly Applied Biosystems™ Chromosome Analysis Suite (ChAS) Software. Researchers can leverage the Applied Biosystems™ CytoScan™ Automated Interpretation and Reporting (AIR) solution, an end-to-end, artificial intelligence (AI)–driven research solution for automating genetic data analysis. CytoScan AIR combines ChAS Software with Franklin (by Genoox), an interpretation tool, to simplify variant interpretation and potentially boost discovery yield.

Prepare your cytogenetics studies for the future

Be ready to accelerate your research and gain new insights as new SNPs and CNVs are discovered. The CytoScan 750K Accel Array covers relevant genes with expanded coverage, so waiting for new content doesn't have to slow you down. You have immediate access to many types of chromosomal aberrations at high resolution in a single test, including large deletions and duplications, copy number gains and losses, and copy-neutral events such as absence of heterozygosity/loss of heterozygosity (AOH/LOH). Compatibility with a broad range of sample types for constitutional and oncology research applications helps enable you to maximize your cytogenetics research investment and reduce the burden of revalidating new arrays.

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Accelerated CytoScan 750K Accel Array workflow from DNA digestion through CMA scanning

Day 1 --> Overnight ----> Day 2 --------------------------------

Digestion	Ligation	PCR amplification	Purification	Fragmentation	Labeling	Start hybridization	Hybridization	Washing/ staining	Scanning
0.5 hr	0.5 hr	1.5 hr	1 hr	1 hr	1 hr	0.5 hr	16–18 hr	2.5 hr	0.25 hr*
		25 cycles							
		Break			Break				

* Dependent on the number of cartridges.

Rely on reproducibility with hybrid probe design

Uphold the stringent reliability you need for confidence in your data and help save time and money by minimizing experiment reruns. The CytoScan 750K Accel Array uses hybrid probe design, which includes both CNVs and SNPs. The hybrid CNV/SNP arrays standardize testing for samples, yielding accurate and reproducible CNVs and runs of homozygosity (ROH) data, even for low-quality gDNA.

The CytoScan 750K Accel Array delivers highly reproducible data, even with as little as **100 ng of input DNA**—up to 50% less compared to some other commercially available CMA platforms.

Maximize value with unmatched assay flexibility

Highly flexible hybrid CNV/SNP arrays maximize your options throughout the length and breadth of cytogenetics research. A single CytoScan 750K Accel Array can be used for a range of cytogenetics studies, such as prenatal, postnatal, and oncology research applications. You can gain even more value from cytogenetics analysis by using the same protocols across these multiple applications to simplify scaling as your needs evolve.

Gain confidence in your conclusions with ongoing analysis software advancements

Our commitment to innovation goes beyond arrays. Intuitive and user-friendly ChAS Software delivers value with a range of new features driven by customer input. Support efficiency across multiple applications with customized visualization and analysis of chromosomal aberrations.

### Enhance your genetic data analysis with the latest ChAS 4.5 Software

- ChAS CEL Uploader installed in the workstation

- Option to change the default administrator password for increased security

- Left-right scroll button within the "Detail View" for easier scrolling

- A new track for disorder-causing genes in the OMIM® database for better navigating the database with a phenotype map key value of three

▶ **Access ChAS Software training modules**

Don't risk losing legacy data in your lab

ChAS Software enables seamless data migration from other CMA platforms to the CytoScan Cytogenetics Suite.

ChAS Software is accessible on many computers in your laboratory with no incremental license fees for multiple users.
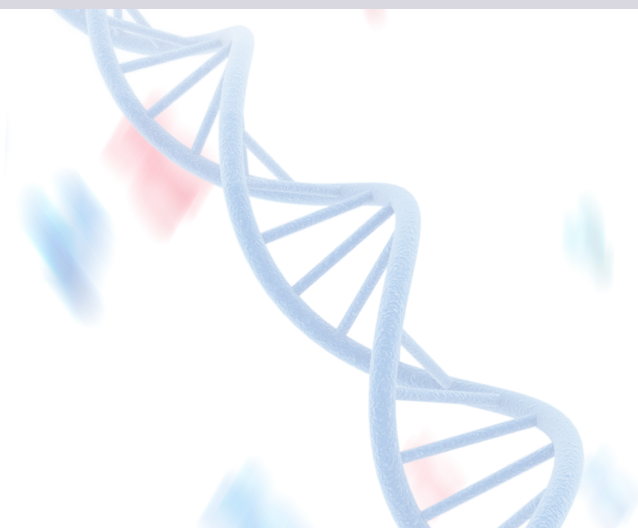
CytoScan 750K Accel Array compared to the Applied Biosystem™ CytoScan™ 750K Array

	CytoScan 750K Accel Array	CytoScan 750K Array
Research application	Faster turnaround time with improved coverage for highest genome-wide resolution of CNVs for applications in prenatal, postnatal, and oncology research	High genome-wide resolution to analyze copy number gains and losses for prenatal and postnatal research
Sample type	Blood, buccal swabs, saliva, bone marrow, uncultured or cultured cells, chorionic villi, amniocytes, products of conception (POC), and fresh or frozen tissue	Blood, buccal swabs, saliva, uncultured or cultured cells, chorionic villi, amniocytes, and POC
Size of aberration	Losses: 100 kb Gains: 400 kb LOH/AOH: 5 Mb Mosaicism: >20%	Losses: 100 kb Gains: 400 kb LOH/AOH: 5 Mb Mosaicism: >15%–20% (approximately)
Input DNA requirements	100 ng	250 ng
Probe structure	960,755 markers for whole-genome coverage 706,054 nonpolymorphic markers 254,701 SNP probes for LOH/AOH analysis, duo-trio assessment, and sample tracking	750,000 markers for whole-genome coverage 550,000 nonpolymorphic markers ~200,000 SNP probes for LOH analysis, duo-trio assessment, and sample tracking
Balanced hybrid dual-probe design	Yes	Yes
Balanced whole-genome coverage	Yes	Yes
Protocol	2 days	3–4 days

Reduce analysis time and cost with the power of AI for quick and precise variant identification with the CytoScan AIR solution

- **Fast data interpretation and reporting:** results are available in seconds, so you can focus on discovery

- **Improved evidence support:** options for segment interpretation include the most up-to-date American College of Medical Genetics and Genomics (ACMG™) classifications, phenotype matching, literature searches, and historic data

- **Customized reporting:** intuitive interface enables easy customization, reporting, evaluation, and sign-off

- **Evidence-based database expansion:** Franklin (by Genoox) interpretation tool enables users to expand and curate their internal databases through access to evidence-based data shared by the entire Franklin community

- **Relevant insights:** more than 350,000 shared variant classifications and advanced findings from community-driven cytogenetics research
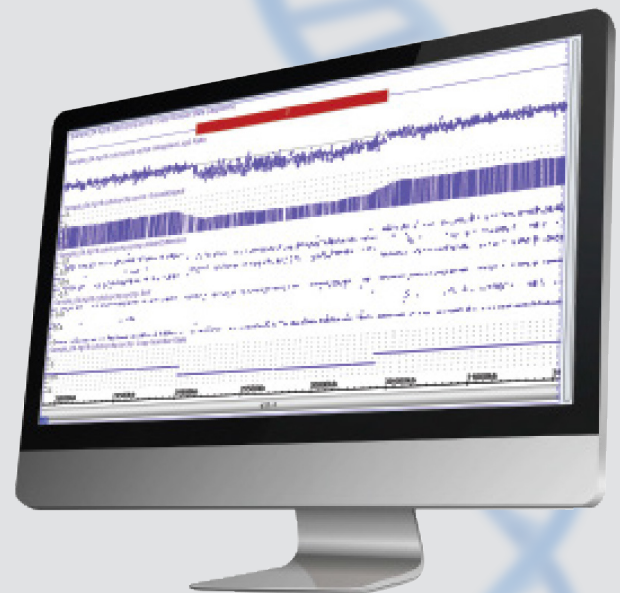
▶ **Watch the CytoScan AIR demo**

Increase your confidence with specialized services and support

Rely on our service and support teams to enhance your expertise and maximize uptime. CytoScan Cytogenetics Suite support professionals are dedicated to helping enable your success so you can focus on driving groundbreaking research.

ⓘ Learn more about our services and support

Fast and powerful CMA for the future of your cytogenetics research

- Sample to report in just 2 days

- Whole-genome coverage for a broad range of sample types and applications

- Hybrid CNV/SNP arrays standardize testing across multiple applications, even with low-quality gDNA

- Reliable and reproducible results from as little as 100 ng of input DNA

- Intuitive data analysis capabilities supported by AI-driven variant analysis and reporting

Connect with a sales specialist at
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