ThermoFisher SCIENTIFIC

HIP HIP ARRAY

CytoScan HD Accel

Increase your lab productivity with a 2-day turnaround time

The Applied Biosystems™ CytoScan™ HD Accel Array offers accelerated workflow may help you improve lab productivity, even as much as 100%. In addition, with enhanced speed, coverage, and data analysis, CytoScan cytogenetics suite propels your research forward, enabling you to reach a new level of productivity and efficiency.

Uncover new cytogenetics insights faster with CytoScan HD Accel

Reducing your chromosomal microarray (CMA) turnaround time to just two days can help advance your research at a new pace. Imagine the potential progress you can make when completing assays faster to accumulate weeks and then months of saved time. The CytoScan HD Accel Array is designed to deliver the fastest assay turnaround time in the industry.

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Accelerated CytoScan HD 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 25 cycles Break	1 hr	1 hr	1 hr Break	0.5 hr	16 – 18 hr	2.5 hr	0.5 hr *

* Dependent on number of cartridges

Speed your cytogenetics research forward

Accelerate your testing by as much as 100%. The CytoScan HD Accel assay workflow can be completed in just two days' time. Minimize sample handling and preparation time with up to 50% less input sample required compared to some other commercially available CMAs. Even with just **100 ng input DNA**, CytoScan HD Accel Arrays uphold the stringent reproducibility and reliability needed to enable excellent results with minimal failure rate.

Save time, money, and resources with highly reproducible data even from challenging sample types

The CytoScan HD Accel reference model has been expanded to support improved data quality from a broad range of samples including buccal swabs, saliva, products of conception, amnio, CVS and cell lines.

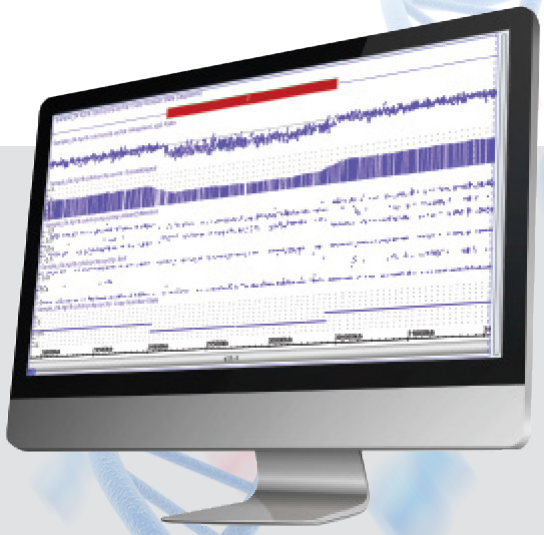
Maximize the value of your CMA assays with improved coverage

Sometimes even a single SNP or copy-number variant (CNV) may be the key to gaining critical new insights you need to advance your studies to the next level. CMAs that incorporate the latest available content are essential to helping maximize the value of cytogenetics assays. The CytoScan HD Accel Array is designed with improved coverage in more than 5000 regions as categorized by multiple leading industry databases.

Streamline your CMA research with enhancements throughout the CytoScan cytogenetics suite

Faster assays are just one aspect of maintaining a consistently fast-paced cytogenetics research program. Enhancements to the intuitive and flexible Applied Biosystems™ Chromosome Analysis Suite (ChAS) software offer powerful new features for customized visualization and analysis of chromosomal aberrations across the genome.

Boost your discovery yield and simplify variant interpretation. The new **Applied Biosystems™ CytoScan™ Automated Interpretation and Reporting (AIR)** solution unites ChAS software with the Franklin (by Genoox), an end-to-end, Artificial Intelligence (AI)-driven research solution for genetic data analysis.



Leverage the power of AI for quick and precise variant identification with CytoScan AIR

- **Fast data interpretation and reporting:** results available in seconds so you can focus on discovery
- **Improved evidence support:** options for segment interpretation including the most up-to-date American College of Medical Genetics (ACMG) classifications, phenotype matching, literature searches and historic data
- **Customized reporting:** intuitive interface enables easy customization, reporting, evaluation, and sign-off
- **Evidence-based database development:** access to Franklin enables users to link evidence with observations for internal database management and expansion
- **Relevant insights:** more than 350,000 shared variant classifications and advanced findings from community-driven cytogenetics research

Advancing cytogenetics research with the GeneChip System 3000

Our commitment to advancement in cytogenetics research continues with updates to the high-performance microarray instrument for array processing, Applied Biosystems™ GeneChip™ System (GCS) 3000.

Updates include:

- More efficient installation with the autoloader pre-assembled inside the scanner
- Easier and safer operation of the scanner lid with new grip and counterbalance
- Updated internal components to maximize longevity
- Modernized look and feel

CytoScan HD Accel Array provides valuable enhancements over alternative CMAs

	CytoScan HD Accel	CytoScan HD	Illumina Infinium GDACyto	Agilent GenetiSure
Research application	Fastest turnaround time in the industry with improved coverage for highest genome-wide resolution of CNVs for applications in prenatal, postnatal, and oncology research	The benchmark in cytogenetics research with highest genome-wide CNV resolution for applications in prenatal, postnatal, and oncology research	Global population array with supplemental targeting of a select number of cytogenetic regions	Genome-wide copy number CGH+SNP array focused on disease-associated regions linked to a range of disorders
Sample type	Blood; buccal swabs; saliva; bone marrow; uncultured or cultured cells; chorionic villi; amniocytes; POC; and fresh, frozen, or FFPE tissue	Blood; buccal swabs; saliva; bone marrow; uncultured or cultured cells; chorionic villi; amniocytes; POC; and fresh, frozen, or FFPE tissue	Blood, buccal swabs, saliva, or FFPE tissue (purchase of additional kit required)	Blood, saliva, bone marrow, amniotic fluid, chorionic villi, or FFPE tissues
Size of aberration	Losses: 25 kb Gains: 50 kb LOH/AOH: 3 Mb Mosaicism: >15% (approximately)	Losses: 25 kb Gains: 50 kb LOH/AOH: 3 Mb Mosaicism: >15% (approximately)	Losses: 50 kb* Gains: 200 kb* LOH/AOH: 5 Mb Mosaicism: >20% Average resolution: 1.5 Mb (Genome-wide)	No publicly available resolution claims. The specs are based on median probe spacing and coverage of 5 or more probes Overall: 223 Kb (180K CGH+SNP) LOH/AOH: 2.5 Mb (only for 4x180K CGH+SNP) Mosaicism: >15%
Input	100 ng	10–250 ng**	200 ng	350 ng
Probe structure	2.8 million markers for whole genome coverage 2 million nonpolymorphic markers 750,000 SNP probes for LOH/AOH analysis, duo-trio assessment, and sample tracking	2.7 million markers for whole genome coverage 1.9 million nonpolymorphic markers 750,000 SNP probes for LOH/AOH analysis, duo-trio assessment, and sample tracking	Approximately 1.8 million markers	60,000 probes (60K CGH) 180,000 probes (180K CGH+SNP)
Balanced hybrid dual-probe design	Yes	Yes	No	Only 180,000 probes (180K CGH+SNP)
Balanced whole-genome coverage	Yes	Yes	No	No
Protocol	2 days	3 or 4 days	3 days	2 days

*As reported by current customers in publicly available material

**250 ng is optimal but users have reported success using as little as 10 ng starting DNA.

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Raise your productivity and efficiency to a whole new level with CytoScan HD Accel Array

- Sample to report in just 2 days
- Updated array content with balanced genome coverage
- 50% less sample input than competitors
- Improved data quality due to a supplemented reference model that includes challenging sample types

With CytoScan HD Accel Array, CytoScan AIR solution and updated GCS 3000 instrument, CytoScan cytogenetics suite can help speed your research forward at a new pace.

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