

Nouvelle génération de puces hybrides CytoScan Accel : le meilleur des deux mondes

Journée Achrom-Puce

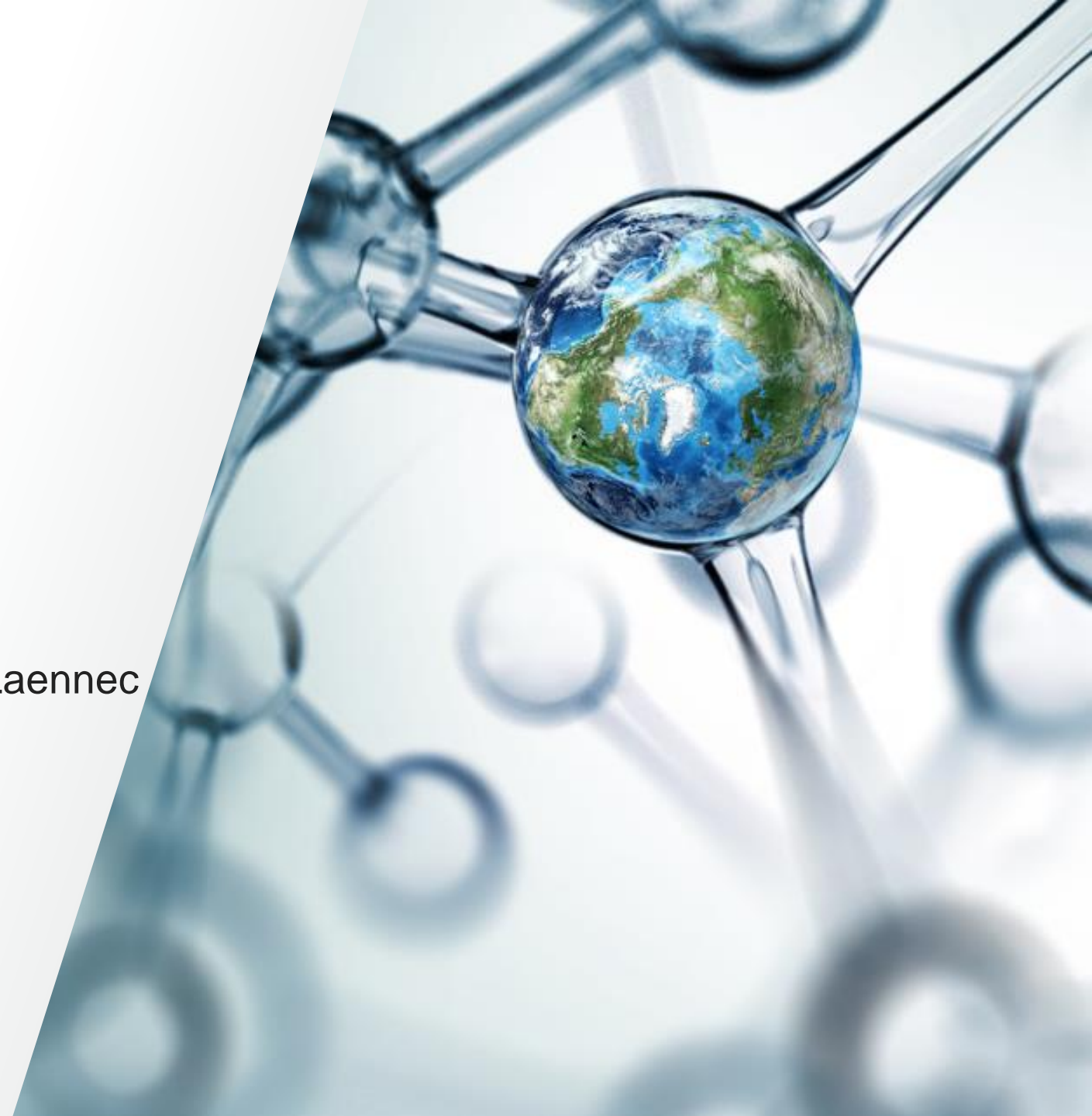
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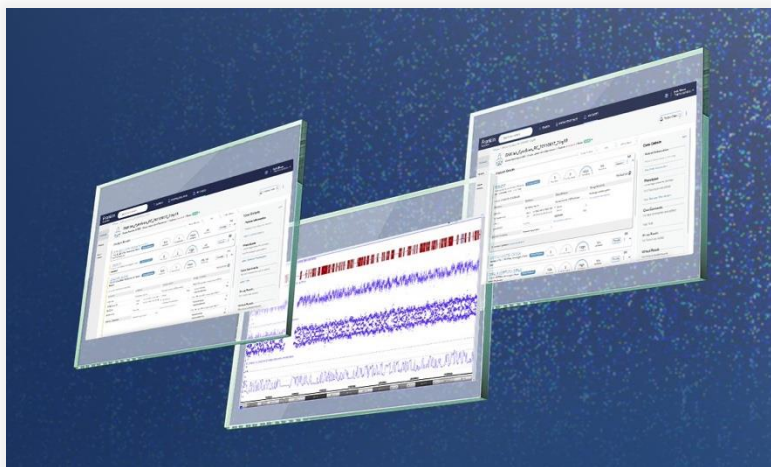
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 The world leader in serving science



Applied Biosystems™ CytoScan™ solution: year of innovation

Now available



CytoScan™ Automated Interpretation and Reporting (AIR) solution

Increased productivity with automated genetic data interpretation and reporting powered by AI

Now available



GeneChip™ Scanner 3000

Microarray scanning instrument with a commitment to dramatically improve efficiency in genetic analysis applications

Now available



CytoScan™ HD Accel Suite

Build trust in your lab with reliable, reproducible, and rapid results

CytoScan Suite : not a aCGH, not a SNP only design...

A dual-probe content with high-density SNPs

Total number of markers	
CytoScan HD	CytoScan 750K
2,696,550	750,436



CNV probes (25 mer oligonucleotide probes)

Number of non-polymorphic markers	
CytoScan HD	CytoScan 750K
1,953,246	550,000



High density SNP probes

Number of SNP markers	
CytoScan HD	CytoScan 750K
743,304	200,436

Hybrid-SNP arrays, containing a combination of a large number of SNP and CNV probes.

Dual-probe content with high-density SNPs

	Hybrid array	CNV only array
CNV (from aneuploidies to small CNV >25 kb for losses and >50 kb for gains)	✓	✓*
Structural variants, unbalanced	✓	✓
Suspected uniparental disomies (UPDs), whole genome UPD, cnLOH, or AOH	✓	✗
Mosaicism	✓	✓
Sample heterogeneity, clonal diversity	✓	✗
Triploidy	✓	✗
Tetraploidy (depending on the mechanism)	✓	✗
Hypo- and hyperploidy	✓	✗
Zygoty	✓	✗
Consanguinity	✓	✗
Finding the parent of origin (requires parental genomic analysis)	✓	✗
Twin-twin or maternal cell contamination	✓	✗
Allele-specific changes	✓	✗
Genomic contamination	✓	✗

* Small CNV detection depending on resolution of array

CytoScan HD Accel assay and array overview

The CytoScan HD Accel Suite offers an accelerated workflow with two-day TAT and 100 ng gDNA input, while enabling reproducible and reliable results even with challenging sample types. This empowers labs to save costs, boost operational efficiency, and increase productivity.

CytoScan HD Accel assay

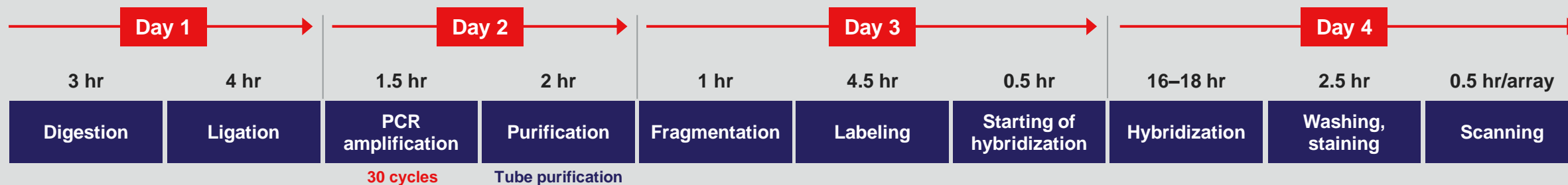
- ➔ **Increase productivity by up to 100% with 2-day TAT**
 - Plate purification **reduces pipetting steps and sample swap risk**
 - Changes in master mixes reduce incubation times
 - Fewer PCR cycles
- ➔ **50% less DNA required, with 100 ng gDNA input, compared to other microarrays in the industry**
- ➔ Updated Reference model file contains a diversity of sample types:
 - Blood, POC, buccal, saliva, amniotic fluid, and chorionic villus sampling (CVS)

CytoScan HD Accel array

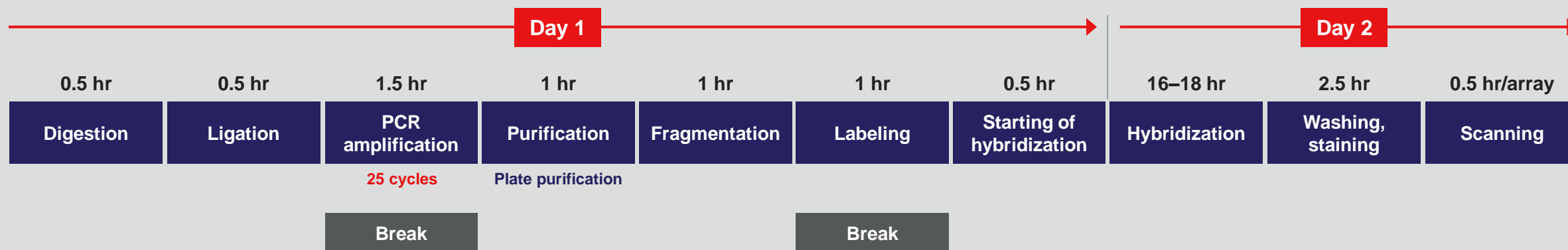
- ➔ **New array design with updated content**
 - Approximately 100K additional probes
 - Improved coverage in over 5,000 relevant regions, as classified by professional databases such as ClinGen and DECIPHER

Workflow comparison between CytoScan HD and CytoScan HD Accel arrays

Original CytoScan HD array: 4-day workflow



Updated CytoScan HD Accel array: 2-day workflow

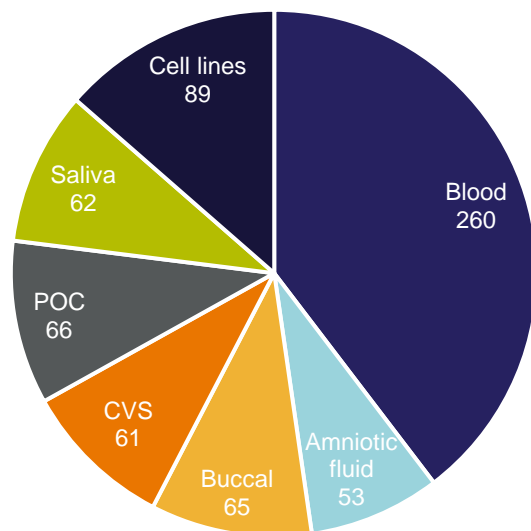


Supplemented reference file summary

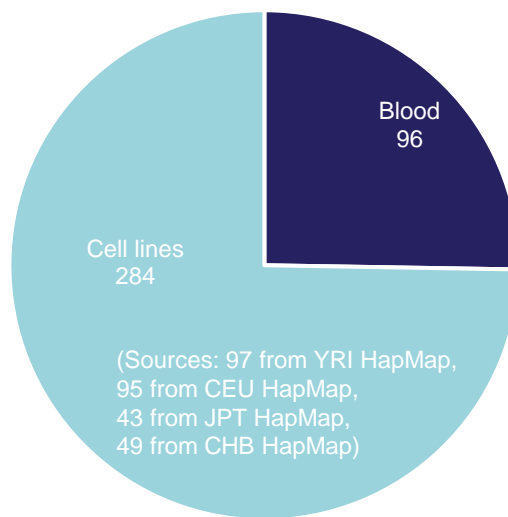
Data used to build final reference file

→ 567 CEL files (446 unique samples)

→ Diversity of sample types

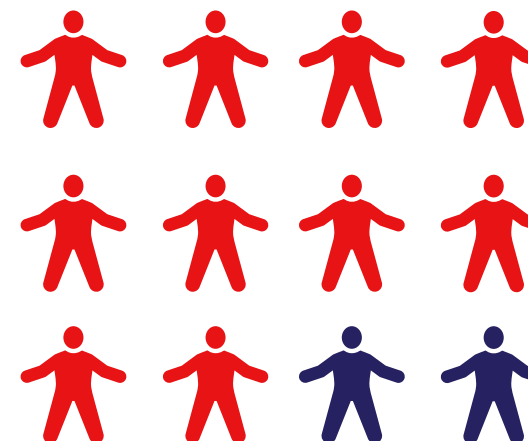


CytoScan HD Accel reference
(656 samples, 535 unique)



CytoScan HD reference
(380 samples, 362 unique)

→ 12 operators (including 2 from EU)



CytoScan Cytogenetics Suite platforms

	CytoScan HD Accel Suite	CytoScan HD Suite	CytoScan 750K Suite	
Launch date	2023	2011	2012	
Total number of markers	2.8 million	2.7 million	750,000	Copy number (CN) analysis
Total number of SNP markers	750,000	750,000	200,000	SNP analysis
Total number of non-polymorphic markers	2 million	1.9 million	550,000	

← SNP probes remain unchanged as compared to CytoScan HD Suite

log ₂ ratio track	Yes
Allele difference track/ B-allele frequency track	Yes
Genotypes	Yes

Only compatible with  Applied Biosystems™ Chromosome Analysis Suite (ChAS) 4.4 or higher

Next-generation microarray and artificial intelligence (AI)

Taking efficiency and productivity to a whole new level*

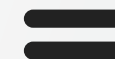
CytoScan HD Accel Suite

- Improved lab efficiency and productivity
- 100 ng input
- Reference model supplemented with challenging sample types
- Reduced risk of sample swaps
- Up-to-date design

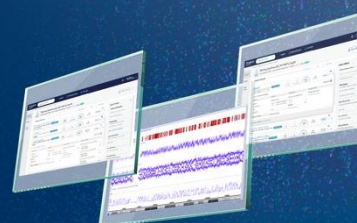


CytoScan AIR solution

- **Interpretation**—reduces amount of time spent on interpretation and annotations
- **Reporting**—provides labs with a customizable report tailored for the institution
- **Management**—internal database allowing input for interpretation, easy access to cases that need reevaluation, management of the team's work and responsibilities



Empowering labs to save costs, boost operational efficiency, and increase productivity



* Compared to CytoScan HD Suite.

GeneChip System Dx has two modes and two workflows

Applied Biosystems™ GeneChip™ System 3000Dx v.2



GCS3000 Dx Dual Mode instrument control software GCDC

Assay Development Mode

CytoScan™ RUO
Array

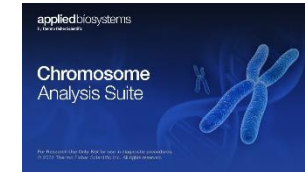


HD 750K HD Accel

CytoScan™ RUO
Assay Reagents



Chromosome Analysis Suite
(ChAS) RUO software



IVD Mode

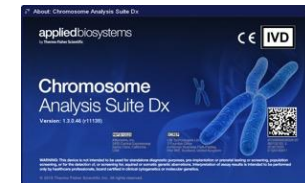
CytoScan™ Dx
Array



CytoScan™ Dx
Assay Reagents



Chromosome Analysis Suite
(ChAS) Dx software



Merci

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