DataSheet



CytoScan® HD Suite

The unrivaled standard in cytogenetics research

CytoScan HD Suite is a complete cytogenetic microarray solution that includes CytoScan® HD Array, reagent kit, and the simple, user-friendly software, Chromosome Analysis Suite (ChAS).

CytoScan HD Suite was designed to provide the most comprehensive coverage and highest performance for detecting chromosomal aberrations in a broad range of sample types for constitutional, cancer, stem cell, and neurodevelopmental applications.

Highlights

- **High specificity, sensitivity**, ¹ dynamic range, ² and resolution³ across the genome.
- Unparalleled coverage across RefSeq, OMIM®, ClinGen, DECIPHER/DDG2P constitutional regions, and Sanger cancer genes.
- Future-proofed design by covering not only the regions relevant today, but the ones that will become relevant in the future.
- A hybrid dual design including not only the best of copy number probes, but also the power of high-density SNPs for confident breakpoint determination,⁴ allelic confirmation of copy number changes,⁵ high-resolution loss/absence of heterozygosity (LOH/AOH),⁶ gene-level homozygosity mapping,⁷ parent-of-origin analysis,⁸ and enhanced detection of low-level mosaics,⁹ clonality,¹⁰ genomic contamination, and ploidy adjustments and detection.¹¹
- 2.67 million markers for copy number analysis, including 750,000 SNP and 1.9 million non-polymorphic probes.
- **Robust, proprietary manufacturing** technology that produces highly reproducible arrays between batches, with no risk of probe dropout that occurs with bead array technology.
- **Proven technology**, extensively cited, with more than 250 publications per year not only in constitutional and cancer applications, but also in neurodevelopmental and stem cell research.
- A robust and flexible manual or automated assay, designed to save you time and money, reduce error, and deliver performance, results, and quality consistent with your laboratory requirements.
- State-of-the-art data analysis software tailored for cytogenetics and copy number analysis. ChAS allows simple data analysis to generate customized exports based on your specific requirements. From single data analysis to database generation, and from constitutional tools to cancer algorithms, the software adapts to the needs of any cytogenetics laboratory.
- World-class support, from training and instrument maintenance to consulting and compliance, led by our world-class team of
 multilingual technical experts.

CytoScan® HD Array specifications

Markers for copy number analysis	
Total number of probes	6,876,796
Number of non-polymorphic markers	1,953,246
Number of SNP markers	743,304
Total number of "genotype-able" SNP markers	749,157
Genome build	hg19
Autosomal markers	2,491,915
Pseudoautosomal markers	4,624
Intragenic markers	1,410,535
Intergenic markers	1,286,015

Average marker spacing (base pairs)		
Intragenic (within all the genes below)	880	
Intergenic (non-gene backbone)	1,737	
Overall (gene and non-gene backbone)	1,148	
Percentage of genes covered (25 markers/100 kb)		
ClinGen (formerly ICCG and ISCA) (3,483)	100%	
Cancer genes (526)	100%	
OMIM Morbid genes (3,561)	100%	
X chromosome OMIM Morbid genes (177)	100%	
RefSeq genes (36,121)	98%	
DDD ¹² (1,309)	98%	



References

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- 10. Jiangchuan T., et al. Concurrence of B-lymphoblastic leukemia and myeloproliferative neoplasm with copy neutral loss of heterozygosity at chromosome 1p harboring a MPL W515S mutation. *Cancer Genetics* **207**(10–12):489–494 (2014).
- 11. Choi S., et al. Near-haploid B lymphoblastic leukemia with an apparent hyperdiploid karyotype: the critical role of SNP analysis in establishing proper diagnosis. Journal of Hematopathology 7(1):27–32 (2014).
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Ordering information

Part number	Description	Details	
CytoScan® HD Suite consumables			
901835	CytoScan® HD Array Kit-and Reagent Kit Bundle	Arrays and reagents sufficient for 24 reactions	
N/A	Chromosome Analysis Suite (ChAS)	Available as free download from www.affymetrix.com/chas	
CytoScan® training products			
901834	CytoScan® HD Training Kit	Arrays and reagents sufficient for 24 reactions plus training materials	
000802	CytoScan® FAS On-Site Training	FAS-led on-site preparation and first week of training	
000803	CytoScan® FAS Assisted Training	FAS-led on-site preparation. Customer completes training using self-paced tools	
Supporting products			
00-0218	GeneChip® 3000 7G with Workstation and AutoLoader	Includes GeneChip® Scanner 3000 7G with AutoLoader n2D Handheld Barcode Reader GeneChip® Fluidics Station 450 GeneChip® Hybridization Oven 645 Computer Workstation with instrument control software	
00-0334	GeneChip® System 3000Dx v.2*	Includes GeneChip® Scanner 3000Dx v.2 with AutoLoaderDx GeneChip® Fluidics Station 450Dx v.2 Workstation with Affymetrix Molecular Diagnostics Software (AMDS) *Requires GeneChip® Hybridization Oven 645 (see below)	
00-0331	GeneChip® Hybridization Oven 645		
00-0401	Affymetrix® NIMBUS® Target Preparation Instrument		

For additional instrument system configurations or individual system components to meet your needs, please contact your local Affymetrix Account Manager.

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P/N CL00704 Rev. 6

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