



# AGILENT CYTOGENETIC RESEARCH SOLUTION VARIANTS BETTER DEFINED

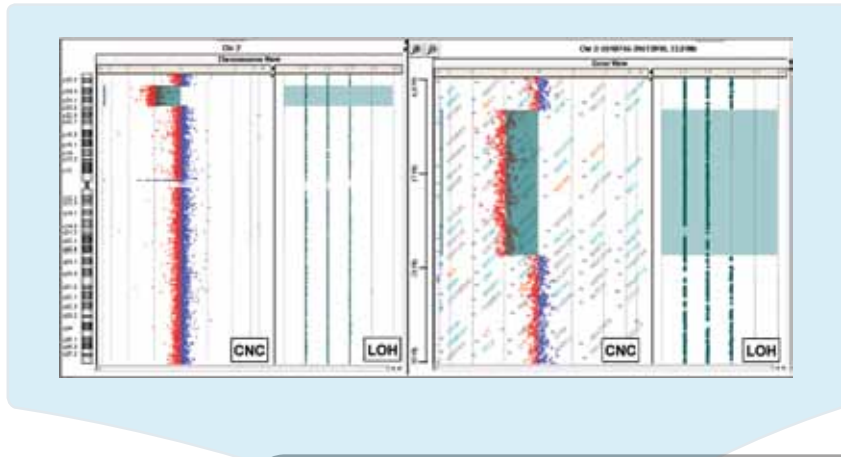
The Measure of Confidence



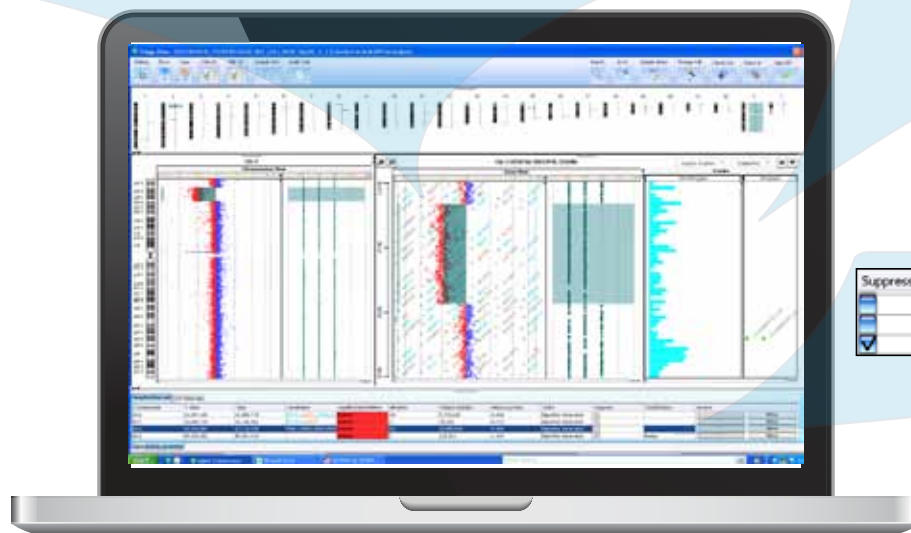
**Agilent Technologies**

# Agilent CytoGenomics Software: Designed Specifically for Cytogenetic Research

## Visualization of CNC and LOH data



## Import tracks from UCSC, ISCA



## Suppress, classify, edit, or annotate aberrations

Suppress	Classification	Actions	
<input type="checkbox"/>		Edit	Notes
<input checked="" type="checkbox"/>	Design	Edit	Notes

Try Agilent CytoGenomics Software today at [www.agilent.com/genomics/cyto\\_download](http://www.agilent.com/genomics/cyto_download)

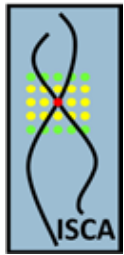
## Putting Data into Context

- Compare data to external databases including OMIM and DGV
- Search and compare with your in-house database
- Automate TIFF image upload, feature extraction, and analysis
- Generate custom reports
- Streamline analysis of normal constitutional samples in less than 5 minutes

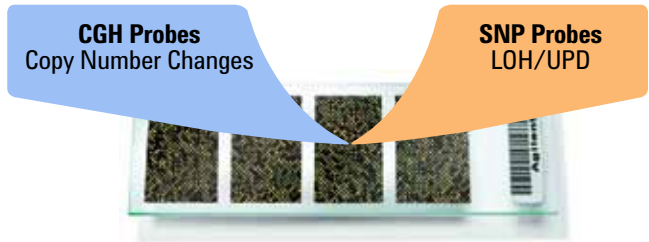
# Agilent Cytogenetic Research Solution

## Market Leader & Trusted Choice in Cytogenetics

### Most Trusted Microarray Platform



- **Reviewed and approved by ISCA** (International Standards for Cytogenomic Arrays Consortium), consistent with ISCA recommendations
- **Cancer microarray based on designs by the CCMC** (Cancer Cytogenomics Cancer Consortium) and used by consortium members
- **Easy Customization with Agilent eArray:** Use Agilent's web based tool to create custom array designs and **target specific genomic regions**



Manufactured under ISO13485 certification.

## Agilent's Comprehensive Solution from Sample to Result

### Cytogenetic Reagents

**Labeling, Hybridization & Wash**

Reagents that help **maximize sensitivity and array performance**

### CGH+SNP Microarrays

**Microarray**

Detect **copy number changes and copy neutral aberrations** on the same microarray

### Bravo Automated Liquid Handling & SureScan

**Liquid Handling & Scanning**

**Automated liquid handling** protocols for CGH+SNP, and **industry-leading scanner** enables crisp, clean images

### Cytogenomics Software

**Data Analysis**

**Easy to use software** for streamlined analysis

# Get the Highest Confidence In Your Results

## Better Aberration Detection: SurePrint G3 CGH+SNP Microarrays

- Simultaneous detection of copy neutral aberrations such as LOH and UPD
- 60-mers generate most accurate copy number detection and highest quality copy number change data
- Choose from 65,000 genotypable SNPs and more than 28 million pre-qualified CGH probes



## Agilent Reagents for Cytogenetic Research

Agilent's reagents include all components necessary to maximize sensitivity, array performance and streamline your workflow.

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Labeling Reagents and Dyes | <input checked="" type="checkbox"/> Cot-1 DNA             |
| <input checked="" type="checkbox"/> Free dye removal columns   | <input checked="" type="checkbox"/> Wash Buffers          |
| <input checked="" type="checkbox"/> Reference DNA              | <input checked="" type="checkbox"/> Hybridization Buffers |

## Automated Platform for Throughput & Reproducibility

- Automates CGH+SNP sample fragmentation, labeling, purification, and pre-hybridization setup in a 96-well format
- Ready-to-go, validated protocols for both standard enzymatic and ULS methodologies



Agilent Bravo Automated Liquid Handling Platform

## Agilent's High Resolution Microarray Scanner

- Calibrated with an absolute NIST-traceable calibration method, so you can be confident in your results over time
- Built-in ozone protection minimizes signal degradation
- Continuous slide-loading capability to remove batch-loading restrictions



Compact platform, manufactured under ISO13485 certification.



# Sensitivity & Specificity for Variants Better Defined

## Accurate Mosaicism Measurement, Down to 8%

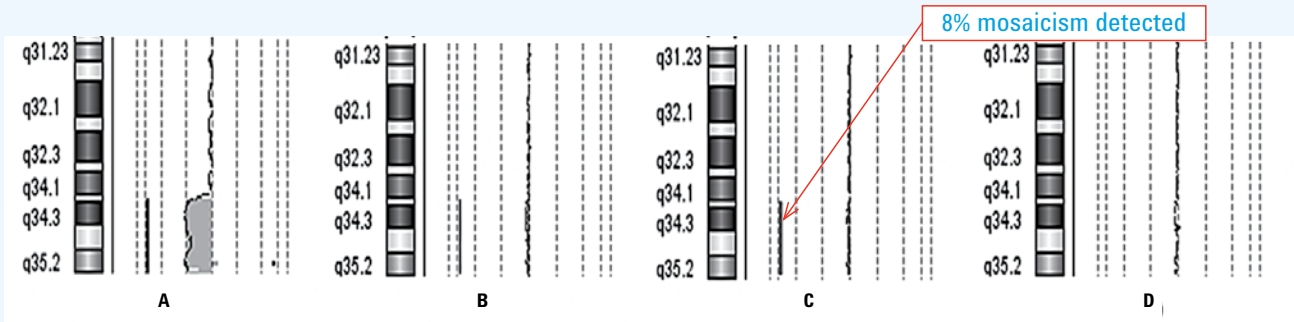


Figure 1. Partial profiles of a sample with a terminal deletion on chromosome 4. Panel A: Sample's 100% DNA, B: Synthetic mosaicism at 10% level, C: 8%, D: 7%. The Agilent arrays are able to detect the deletion at the 8% and 10% level, but not at the 7% level. *R. Valli et al, Molecular Cytogenetics, 2011*

## Superior Dynamic Range

	Slope	R <sup>2</sup>
◆ Theoretical	1	1
◆ Competitor 1 #1	0.547	0.9999
◆ Competitor 1 #2	0.610	0.9990
◆ Agilent #1	0.937	0.9996
◆ Agilent #2	0.957	0.9998
◆ Competitor 2 #1	0.523	0.9854
◆ Competitor 2 #2	0.523	0.9864
◆ Competitor 3 #1	0.461	0.9917
◆ Competitor 3 #2	0.494	0.9892

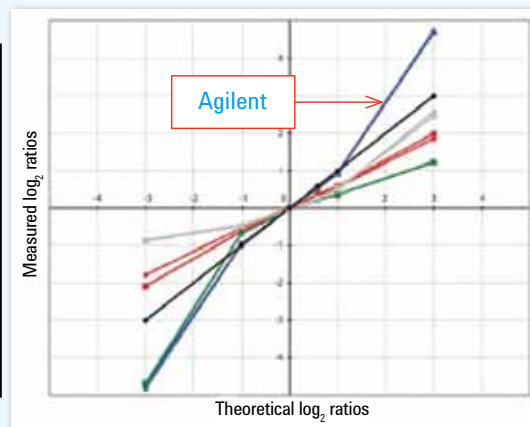


Figure 2. Plot of measured log<sub>2</sub> ratios compared to theoretical values for 4 different microarray platforms. The slope is closest to the theoretical value for the Agilent arrays.

*Kresse et al, BMC Research Notes, August, 2010*

## Higher Resolution than Competition

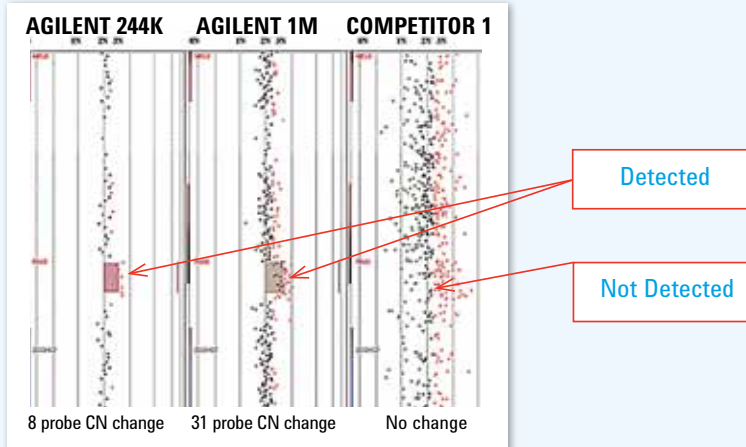


Figure 3. Myeloma cell line DNA hybridized to Agilent 244K, Agilent 1M and competitor array (> 2 million probes). The competitor's array is unable to call a focal gain on PAX5 identified by 8 and 31 probes using the Agilent 244K and Agilent 1M arrays, respectively.

*Braggio et al, AACR poster, April, 2010*

# A COMPLETE MENU OF CYTOGENETIC RESEARCH PRODUCTS

## Agilent SurePrint G3 CGH+SNP Microarrays

Description	Area of Focus	Part Number
SurePrint G3 Human CGH+SNP Microarray 4x180K	ISCA	G4890A
SurePrint G3 Human CGH+SNP Cancer Microarray 4x180K	Cancer Genes	G4869A
SurePrint G3 Human CGH+SNP Microarray 2x400K	Genes and exons	G4842A
SurePrint G3 Custom CGH+SNP Microarray 1x1M	User-defined	G4882A
SurePrint G3 Custom CGH+SNP Microarray 2x400K	User-defined	G4883A
SurePrint G3 Custom CGH+SNP Microarray 4x180K	User-defined	G4884A
SurePrint G3 Custom CGH+SNP Microarray 8x60K	User-defined	G4885A

## Reagents, Scanner, and Software

Processing Step	Product Name	Part Number
Sample Labeling	SureTag Complete DNA Labeling Kit	5190-4240
Sample Hybridization	Oligo aCGH/ChIP-on-chip Hybridization Kit (25 or 100 slides)	5188-5220 or 5188-5380
Sample Hybridization	Human Cot-1 DNA	5190-3393
Microarray Wash	Oligo aCGH/ChIP-on-chip Wash Buffer Kit	5188-5226
DNA Microarray Scanner	SureScan Microarray Scanner Bundle	G4900DA
Hybridization Oven & Accessories	Hybridization Oven Hybridization Chamber Rotator Rack	G2545A G2530-60029
Hybridization Chamber & Accessories	SureHyb Hybridization Chamber—Stainless Hybridization Backing Kit	G2534A Varies by array format and quantity
Liquid Handler	Bravo Automated Liquid Handling Platform	G5409A Option 002
Data Analysis	CytoGenomics Software	G1662AA-G1667AA

Agilent microarrays, reagents, and scanners are manufactured under ISO13485 certification.

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Printed in USA January, 2012  
5990-8355EN



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