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The Most Trusted Cytogenetics Research Solutions

The Agilent CGH Microarray Platform – powered by SurePrint and SureScan technologies for over 10 years – sits at the center of an integrated research platform designed for highly-sensitive, highly-scalable, and highly-reproducible profiling with DNA of different types and quality. SurePrint technology delivers a powerful combination of effective probe design algorithms and deposition methods to create extremely accurate, affordable catalog and custom microarrays.

- *In situ* synthesis of high-quality 60-mer oligonucleotides
- Advanced inkjet technology delivers densities of up to 1 million features per microarray
- Up to 8 arrays on a single slide for genome-wide or focused studies

Sample Labeling

SureTag Complete DNA Labeling Kit

The SureTag Complete DNA Labeling Kit generates robust cyanine-labeled genomic DNA targets for optimal hybridization signals with high signal-to-noise ratio and low probe-to-probe variability. The labeling protocol is a PCR-free linear amplification to ensure accurate copy number call. Efficient labeling provides reproducibility, confidence and maximum sensitivity in your experimental results.

Description	Kit Size	Part Number
SureTag Complete DNA Labeling Kit	1 kit	5190-4240
SureTag DNA Labeling Kit	1 kit	5190-3400
SureTag Purification Columns*	50 purification columns	5190-3391

* Additional columns may be needed depending on array format.

Genomic DNA ULS Labeling Kit

Genomic DNA ULS Labeling and Genomic DNA High-Throughput ULS Labeling Kits utilize a direct labeling method to efficiently generate Cy-3 and Cy-5 labeled genomic targets, starting from highly fragmented DNA. These kits are effective for genomic DNA isolated from tissues, cells, blood, and FFPE samples. Purification modules are available separately for dye removal and labeled genomic DNA clean-up.

Description	Kit Size	Part Number
Genomic DNA ULS Labeling Kit	1 kit	5190-0419
Genomic DNA High-Throughput ULS Labeling Kit	1 kit	5190-0450
Genomic DNA Purification Module	1 kit	5190-0418
Genomic DNA 96-well Purification Module	1 kit	5190-0451

Microarrays & Processing Components

For Superior Performance - Choose the Trusted Choice in Cytogenetics Microarrays

Model Organism CGH Arrays

Agilent model organism genome CGH Microarrays bring optimal clarity to comparative genomic hybridization by enabling researchers to perform ultra-high resolution, genome-wide DNA variation profiling without amplification or complexity reduction.

Description	# of Slides/Samples	Part Number
SurePrint G3 Mouse CGH Microarray Kit, 4x180K	3 slides / 12 samples 1 slide / 4 samples	G4839A G4826A-027411
Mouse Genome CGH Microarray, 2x105K	1 slide / 2 samples	G4425B-014699
Rat Genome CGH Microarray, 1x244K	1 slide / 1 sample	G4423B-015223
Rat Genome CGH Microarray, 2x105K	1 slide / 2 samples	G4425B-015235
SurePrint G3 CGH Rat Microarray, 1x1M	1 slide / 1 sample	G4824A-027065
SurePrint G3 Rat CGH Microarray Kit, 4x180K	3 slides / 12 samples 1 slide / 4 samples	G4841A G4826A-027064
Chicken Genome CGH Microarray, 1x244K	1 slide / 1 sample	G4423B-019553
SurePrint G3 *Rhesus Macaque* Genome CGH Microarray, 4x180K	1 slide / 4 samples	G4826A-024419
SurePrint G3 Chimpanzee CGH Microarray, 4x180K	1 slide / 4 samples	G4826A-024422
SurePrint G3 Bovine CGH Microarray, 4x180K	1 slide / 4 samples	G4826A-025242
SurePrint G3 Canine CGH Microarray, 4x180K	1 slide / 4 samples	G4826A-025522
SurePrint G3 Rice CGH Microarray, 4x180K	1 slide / 4 samples	G4826A-025843

CGH Arrays

SurePrint Human Genome CGH Microarrays are a high-resolution tool for genome-wide DNA copy number variation profiling without amplification or complexity reduction. Comprehensive probe coverage is enhanced with an emphasis on known genes, promoters, miRNAs, pseudoautosomal, and telomeric regions.

Note: Bundles contain sufficient quantities of slides, reagents, and consumables to process the indicated number of samples.

Description	# of Slides/Samples	Part Number
SurePrint G3 Human CGH Microarray Kit, 1x1M	5 slides / 5 samples 1 slide / 1 sample	G4447A G4824A-021529
SurePrint G3 Human CGH Bundle, 1x1M	50 samples	G5920A Option 1
SurePrint G3 Human CGH Microarray Kit, 2x400K	5 slides / 10 samples 1 slide / 2 samples	G4448A G4825A-021850
SurePrint G3 Human CGH Bundle, 2x400K	50 samples	G5921A Option 1
SurePrint G3 Human CGH Microarray Kit, 4x180K	3 slides / 12 samples 1 slide / 4 samples	G4449A G4826A-022060
SurePrint G3 Human CGH Bundle, 4x180K	48 samples	G5922A Option 1
SurePrint G3 Human CGH Microarray Kit, 8x60K	3 slides / 24 samples 1 slide / 8 samples	G4450A G4827A-021924
SurePrint G3 Human CGH Bundle, 8x60K	48 samples	G5923A Option 1
SurePrint G3 Unrestricted CGH ISCA v2, 4x180K	1 slide / 4 samples	G4826A-031748
SurePrint G3 Unrestricted CGH ISCA v2, 8x60K	1 slide / 8 samples	G4827A-031746
Human Genome CGH Microarray 244A Supplemental	1 slide / 1 sample	G4423B-016266
Human Genome CGH Microarray Kit 105A	5 slides / 10 samples 1 slide / 2 samples	G4412A G4425B-014698
Unrestricted HD-CGH Microarray ISCA v2, 2x105K	1 slide / 2 samples	G4425B-031750
Unrestricted HD-CGH Microarray ISCA v2, 4x44K	1 slide / 4 samples	G4426B-031747
Human Genome CGH Microarray Kit 244A	5 slides / 5 samples 1 slide / 1 sample	G4411B G4423B-014693
Human Genome CGH Microarray Kit, 4x44K	3 slides / 12 samples 1 slide / 4 samples	G4413A G4426B-014950
SurePrint G3 CGH ISCA v2 Microarray Kit, 8x60K	3 slides / 24 samples	G5955A
GenetiSure Pre-Screen Microarray Kit, 4x180K*	3 slides / 18 samples	G5962A
GenetiSure Pre-Screen Microarray Kit, 8x60K*	3 slides / 42 samples	G5963A

* Rubicon PicoPLEX Whole Genome Amplification Kit P/N 5190-9533 is used with the GenetiSure Pre-Screen Microarrays.

CGH + SNP Arrays

GenetiSure and SurePrint Human Genome CGH+SNP Microarrays detect copy number changes as well as copy neutral aberrations, such as loss of heterozygosity (LOH) and uniparental disomy (UPD). Probe design and selection have been carefully optimized and validated for maximum sensitivity and specificity.

Description	# of Slides/Samples	Part Number
GenetiSure Postnatal Research CGH+SNP Microarray, 2x400K	5 slides / 10 samples	G5974A
GenetiSure Cancer Research CGH+SNP Microarray, 2x400K	5 slides / 10 samples	G5975A
SurePrint G3 Human Genome CGH+SNP Microarray Kit, 2x400K	5 slides / 10 samples	G4842A
SurePrint G3 Human Genome CGH+SNP Bundle, 2x400K	50 samples	G5921A Option 2
SurePrint G3 ISCA CGH+SNP Microarray Kit, 4x180K	3 slides / 12 samples	G4890A
SurePrint G3 ISCA CGH+SNP Bundle, 4x180K	48 samples	G5922A Option 2
SurePrint G3 Cancer CGH+SNP Microarray Kit, 4x180K	3 slides / 12 samples	G4869A
SurePrint G3 Cancer CGH+SNP Bundle, 4x180K	48 samples	G5922A Option 3

CNV Microarrays

SurePrint G3 and HD CNV microarrays are designed to study the estimated 0.9-1.3% “normal” difference in copy number of the genomes of unrelated people. These arrays are best utilized in CNV association studies.

Description	# of Slides/Samples	Part Number
SurePrint G3 Human High-Res Discovery, 1x1M	1 slide / 1 sample	G4824A-023642
SurePrint G3 Human CNV Array, 2x400K	1 slide / 2 samples	G4825A-021365
Human Genome CNV Microarray Set, Slide 2, 1x244K	1 slide / 1 sample	G4423B-018898
Human Genome CNV Microarray Set, Slide 1, 1x244K	1 slide / 1 sample	G4423B-018897
Human CNV Association Microarray Kit, 2x105K	5 slides / 10 arrays	G4417A
SurePrint G3 Human CNV Microarray, 2x105K	1 slide / 2 samples	G4425B-022837

Custom & Unrestricted Arrays

The Agilent Custom CGH and CGH+SNP Microarray product line uses SurePrint technology to design and print user-defined microarrays. Using Agilent's SureDesign application, users can design their own microarrays to detect copy number changes and copy neutral aberrations, such as loss of heterozygosity (LOH) and uniparental disomy (UPD), on the same array.

	Description	# of Slides/Samples	Part Number
CGH	SurePrint G3 Custom CGH Microarray, 1x1M	1 slide / 1 sample	G4123A
	SurePrint G3 Custom CGH Array, 2x400K	1 slide / 2 samples	G4124A
	SurePrint G3 Custom CGH Microarray, 4x180K	1 slide / 4 samples	G4125A
	SurePrint G3 Custom CGH Microarray, 8x60K	1 slide / 8 samples	G4126A
	Unrestricted HD-CGH Microarray, 1x244K	1 slide / 1 sample	G4423B
	Unrestricted HD-CGH Microarray, 2x105K	1 slide / 2 samples	G4425B
	Unrestricted HD-CGH Microarray, 4x44K	1 slide / 4 samples	G4426B
	Unrestricted HD-CGH Microarray, 8x15K	1 slide / 8 samples	G4427B
	SurePrint G3 Unrestricted CGH, 1x1M	1 slide / 1 sample	G4824A
	SurePrint G3 Unrestricted CGH, 2x400K	1 slide / 2 samples	G4825A
	SurePrint G3 Unrestricted CGH, 4x180K	1 slide / 4 samples	G4826A
	SurePrint G3 Unrestricted CGH, 8x60K	1 slide / 8 samples	G4827A
CGH+SNP	SurePrint G3 Custom CGH+SNP, 1x1M	1 slide / 1 sample	G4882A
	SurePrint G3 Custom CGH+SNP, 2x400K	1 slide / 2 samples	G4883A
	SurePrint G3 Custom CGH+SNP, 4x180K	1 slide / 4 samples	G4884A
	SurePrint G3 Custom CGH+SNP, 8x60K	1 slide / 8 samples	G4885A

Oligo aCGH Prehybridization Buffer

Oligo aCGH Prehybridization Buffer is used to wet and condition arrays for hybridization on a Tecan HS 400 Pro or HS 4800 Pro instrument with compatible hybridization chambers.

Description	Kit Size	Part Number
Oligo aCGH Prehybridization Buffer	1 bottle	5190-0402

Oligo aCGH/ChIP-on-Chip Hybridization Kits

Oligo aCGH/ChIP-on-Chip Hybridization Kits are designed to consistently deliver the hybridization performance your research demands. Optimized kinetics coupled with enhanced signal intensity and maximum noise reduction assures reliable data every time. Validated for use in Agilent's workflows.

Description	Kit Size	Part Number
Oligo aCGH/ChIP-on-chip Hybridization Kit	25 slides	5188-5220
Oligo aCGH/ChIP-on-chip Hybridization Kit, Large Volume	100 slides	5188-5380
Oligo aCGH Prehybridization Buffer	1 bottle	5190-0402

Cot-1 DNA

Genomic Cot-1 Human DNA is used to block repetitive elements, preventing non-specific hybridization.

Description	Kit Size	Part Number
Cot-1 Human DNA	1 kit	5190-3393

SureScan Microarray Scanner

SureScan Microarray Scanner is the foundation of Agilent's complete microarray solution and represents the state-of-the-art for scanner technology.

Description	Kit Size	Part Number
Agilent SureScan Microarray Scanner Bundle	1 bundle	G4900DA

Note: The SureScan Dx Microarray Scanner, PN G5761AA, is CE marked for *in vitro* diagnostic use in Europe. It is approved for *in vitro* diagnostic use in China, South Korea, and Singapore.

Oligo aCGH/Chip-on-Chip Wash Buffers

Oligo aCGH/ChIP-on-Chip Wash Buffer Kits are optimized and validated for consistently reliable aCGH microarray processing. The wash buffers are available in two configurations: manual processing or automated processing for Tecan instruments.

Description	Kit Size	Part Number
Oligo aCGH/ChIP-on-chip Wash Buffer Kit	1 kit	5188-5226
Oligo aCGH/ChIP-on-chip Wash Buffer 1, 4L	1 bottle	5188-5221
Oligo aCGH/ChIP-on-chip Wash Buffer 2, 4L	1 bottle	5188-5222

Oligo aCGH Wash Buffers Additive

Oligo aCGH Wash Buffer Additive is used to prepare Conditioning Solution and Wash Buffer 2 for running aCGH microarrays on a Tecan HS 400 Pro or HS 4800 Pro instrument with compatible hybridization chambers.

Description	Kit Size	Part Number
Oligo aCGH Wash Buffer Additive	1 kit	5190-0401

Stabilization & Drying Solution

Stabilization and Drying Solution substantially improves the performance of cyanine dye-labeled microarray slides by preventing both wet and dry ozone-induced cyanine 3 and 5 degradation, while optimizing microarray processing and performance.

Description	Kit Size	Part Number
Stabilization and Drying Solution	1 kit	5185-5979

Hybridization Chamber & Microarray Gasket Slides

The Microarray Hybridization Chamber improves your data by reducing signal CV % and log ratio variability, assuring proper mixing of sample during hybridization.

Description	Kit Size	Part Number
Hybridization Chamber Kit - SureHyb enabled, Stainless Chamber	1 kit	G2534A
Hybridization Gasket Slide Kit (5) - 2 microarrays per slide format	1 pack	G2534-60002
Hybridization Gasket Slide Kit (5) - 1 microarray per slide format	1 pack	G2534-60003
Hybridization Gasket Slide Kit (100) - 1 microarray per slide format	1 roll	G2534-60005
Hybridization Gasket Slide Kit (100) - 2 microarrays per slide format	1 roll	G2534-60006
Hybridization Gasket Slide Kit (20) - 1 microarray per slide format	1 pack	G2534-60008
Hybridization Gasket Slide Kit (20) - 2 microarrays per slide format	1 pack	G2534-60009
Hybridization Gasket Slide Kit (5) - 4 microarrays per slide format	1 pack	G2534-60011
Hybridization Gasket Slide Kit (20) - 4 microarrays per slide format	1 pack	G2534-60012
Hybridization Gasket Slide Kit (100) - 4 microarrays per slide format	1 roll	G2534-60013
Hybridization Gasket Slide Kit (5) - 8 microarrays per slide format	1 pack	G2534-60014
Hybridization Gasket Slide Kit (20) - 8 microarrays per slide format	1 pack	G2534-60015
Hybridization Gasket Slide Kit (100) - 8 microarrays per slide format	1 roll	G2534A-60016

Hybridization Oven

The Microarray Hybridization Oven delivers optimal hybridization performance and seamless integration.

Description	Kit Size	Part Number
Hybridization Oven	1 each	G2545A
Hybridization Oven Rotator Rack	1 rack	G2530-60029
Rotator Rack Conversion Rod	1 rack	G2530-60030

Data Analysis

Agilent CytoGenomics

CytoGenomics software is a complete CGH and CGH+SNP microarray data analysis and data reporting solution, to streamline your day-to-day cytogenetic sample analysis research workflow. CytoGenomics is available at no additional cost to Agilent CGH microarray users. Download CytoGenomics software installer and receive a 1-year license, free of charge.

Automation

Bravo Automated Liquid Handling Platform

The Bravo Automated Liquid Handling Platform provides unparalleled versatility and precision in a compact footprint. The Agilent CGH Workstations come preconfigured from the factory with the proper deck setup and protocols so you will be ready to run, quickly and easily.

Description	Kit Size	Part Number
Bravo CGH Enzymatic+CGH+SNP (for enzymatic labeling)	1 unit	G5540A
Bravo CGH ULS (for ULS labeling)	1 unit	G5539A

Sample Quality Control

Agilent TapeStation System

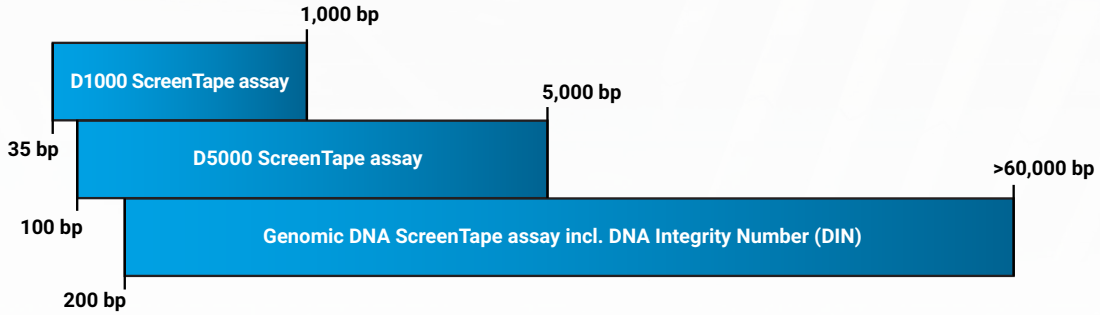
The Agilent 4200 TapeStation system for true end-to-end sample quality control within any next-generation sequencing, microarray or qPCR workflow. The system offers walk away operation with fully automated samples processing. Analyse any sample number from 1 up to 96 samples.

Description	Kit Size	Part Number
Agilent 4200 TapeStation System Includes 4200 TapeStation instrument, laptop PC with 4200 TapeStation software, vortexer, accessories, consumables and user information	1 system	G2991AA

Agilent 4200 TapeStation System

TapeStation DNA Consumables & Reagents

The ScreenTape assays for the 4200 TapeStation enable automated, reproducible and digital assessment of DNA size, concentration and quality. Genomic DNA ScreenTape assay provides a convenient tool to analyze the input material (DNA integrity number, DIN). Select the size range appropriate for your application.



Description	# of Slides/Samples	Part Number
D1000 ScreenTape	for 112 samples	5067-5582
D1000 Reagents	for 112 samples	5067-5583
D1000 Ladder	10 µL	5067-5586
High Sensitivity D1000 ScreenTape	for 112 samples	5067-5584
High Sensitivity D1000 Reagents	for 112 samples	5067-5585
High Sensitivity D1000 Ladder	20 µL	5067-5587
D5000 ScreenTape	for 105 samples	5067-5588
D5000 Reagents	for 105 samples	5067-5589
D5000 Ladder	10 µL	5067-5590
High Sensitivity D5000 ScreenTape	for 105 samples	5067-5592
High Sensitivity D5000 Reagents	for 105 samples	5067-5593
High Sensitivity D5000 Ladder	20 µL	5067-5594
Genomic DNA ScreenTape	for 105 samples	5067-5365
Genomic DNA Reagents	for 105 samples	5067-5366

GenetiSure Cyto CGH & CGH+SNP Microarrays

GenetiSure Cyto CGH Microarrays are designed for the detection of copy number variations (CNV) and copy-neutral loss of heterozygosity (cnLOH) in constitutional DNA samples extracted from a variety of sources such as blood, saliva, amniotic fluid and chorionic villus sampling (CVS).

These microarrays are developed for cytogenetic research and clinical laboratories who perform pre- and postnatal analysis.

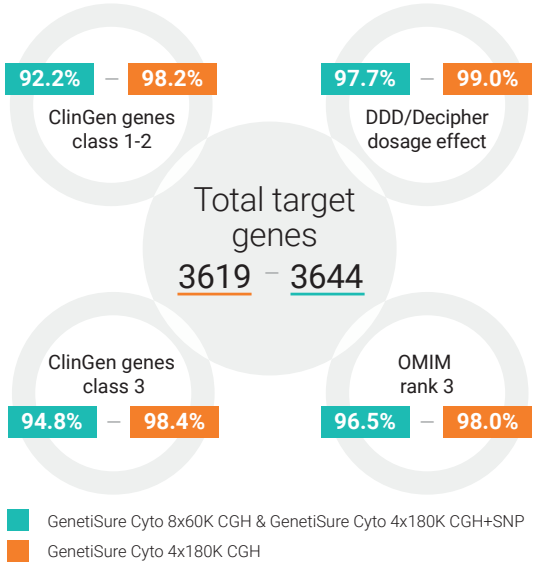


Figure 1. Coverage of database-curated genes targeted by GenetiSure Cyto arrays. Percentages indicated show gene coverage (defined as >=5 probes/gene) in different array formats for each database utilized (ClinGen, DDG2P, OMIM).

GenetiSure Cyto CGH & CGH+SNP:

- Designs are focused on genes and regions relevant for CGH analysis, including clinically relevant data from ClinGen, ClinVar, OMIM and Development Disorder Genotype-Phenotype Database (DDG2P).
- The microarrays include a curated backbone with increased coverage on telomeres and PAR regions to improve data interpretation.
- High-quality probes enable copy number changes and mosaicism detection with high specificity and sensitivity.
- Free space on each array allow for easy customization to integrate laboratory specific genes or regions of interest.

In addition:

- 4x180K CGH array includes exon-level coverage in genes usually tested by Multiplex Ligation-dependent Probe Amplification (MLPA) to improve test value and reduce the need for secondary tests.
- 4x180K CGH+SNP array enables LOH resolution down to 2.5 Mb in autosomal chromosomes, exceeding the most updated guidelines from consortia.

Table 1. Technical specifications for Agilent GenetiSure microarray formats.

	Array type	AMADID	Array format	Total genes targeted*	Target regions	Median probe spacing			Free space	LOH resolution	Exon coverage
						Overall	Backbone**	Telomere & PAR			
GenetiSure Cyto 8x60K CGH	CGH	085590	8x60K	3644	7.1 Kb	50.6 Kb	67.4 Kb	31.8 Kb 13.5 Kb	~500	-	-
GenetiSure Cyto 4x180K CGH	CGH	085589	4x180K	3619	3.5 Kb	16.5 Kb	19.8 Kb	7.8 Kb 7.5 Kb	~1500	-	Yes on 103 selected genes
GenetiSure Cyto 4x180K CGH+SNP	CGH+SNP	085591	4x180K	3644	7.3 Kb	44.5 Kb	57.1 Kb	25.0 Kb 10.5 Kb	~1500	2.5 Mb across Autosomes	No
GenetiSure Postnatal 2x400K CGH+SNP	CGH+SNP	078737	2x400K	8106	-	9.5 Kb	-	-	-	2.5 Mb across Autosomes	89% of genes 3 probes/exon

*Genes are considered covered if they are targeted by 5 or more probes.
Note: 4x180K CGH targets "fewer" than 8x60/4x180 SNP because of the large gene cutoff which is more aggressive due to the denser backbone.

**Resolution is intended here as median probe spacing (or distance between probes).

Versatile design	Focus only on what matters	Streamlined workflow
• One design for both pre- and postnatal analysis • Single design for easier sample management, reducing need to batch samples by application • Free space for easy customization enabling addition of laboratory-specific genes of interest	• Targets genes critical for pre- and postnatal analysis • Clinically relevant, curated content with known phenotype and function • Reduce incidental findings (IF) for ease in interpretation	• Fast 2 day protocol from sample to result • Easy sample tracking due to spike-in probes included in the design • Optimized protocol to easily track all steps while running the experiments

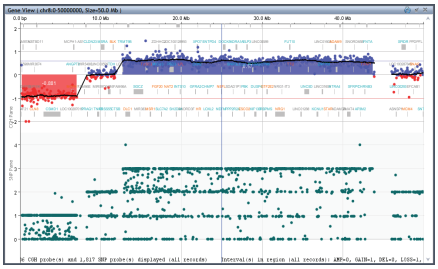
Designed with quality in mind

– Precision targeting of relevant genes and regions.

– Selection of high-quality probes to improve accuracy and resolution of CNV calling down to exon level resolution.

Figure 2 highlights the detection of aberrations of various sizes using GenetiSure Cyto CGH 4x180K CGH and CGH+SNP arrays.

A) GenetiSure Cyto CGH+SNP 4x180K



B) GenetiSure Cyto CGH 4x180K

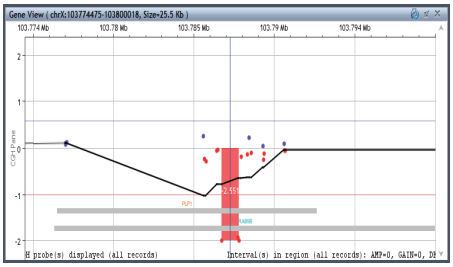


Figure 2. Examples of copy number gains and losses using GenetiSure Cyto 4x180K CGH and CGH+SNP arrays. Figure 2A: CN Gain (~30 Mb) and Loss (~7 Mb): 46,XY,der(8)del(8)(p23.3)dup(8)(:p23.1->p11.2 ::p23.1- >qter) , Chr8 p-arm, Figure 2B: Loss (~1kb, only 3 probes): Pathogenic deletion of parts of exons 3~4 and the intervening sequence in the PLP1 gene, ChrX q-arm.

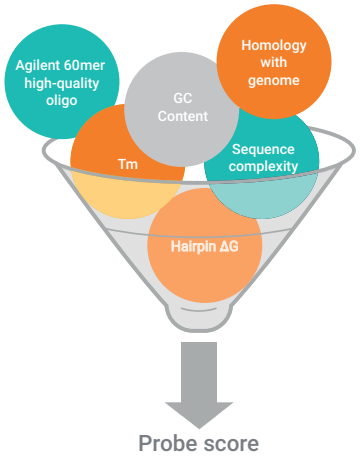
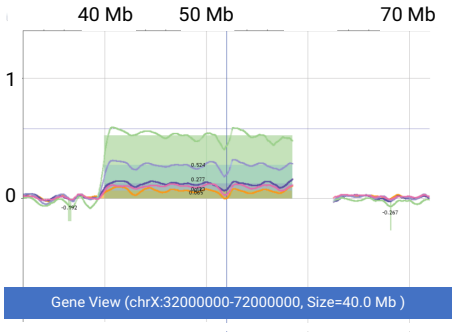
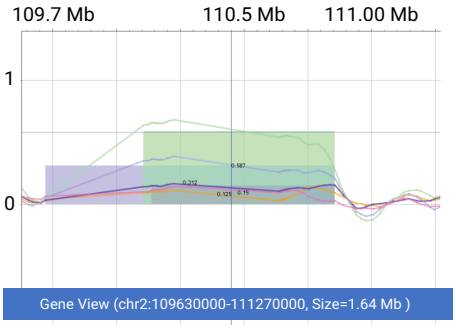


Figure 3. Funnel diagram illustrating criteria to determine probe scores used to select high-quality probes for GenetiSure Cyto microarrays.

Copy number detection in mosaic samples

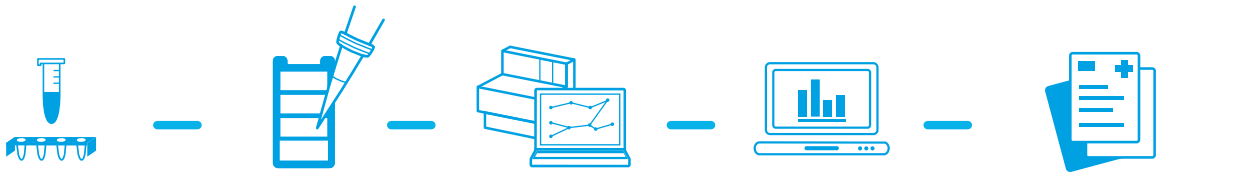




	Sample genome	Reference genome	Sample/Reference ratio	Expected Log2 Ratio	Detected Log2 ChrX	Detected Log2 Chr2
Diploid	2	2	1	0	0	0
Gain	3	2	1.5	0.58	0.52	0.59
50% Gain	2.5	2	1.25	0.32	0.28	0.31
20% Gain	2.2	2	1.1	0.14	0.12	0.15
15% Gain	2.15	2	1.07	0.1	0.1	0.12
10% Gain	2.1	2	1.05	0.07	0.065	na

Figure 4. Demonstration of mosaicism sensitivity within A) 18 Mb gain interval of ChrX and B) 0.75 Mb gain interval of Chr2 using GenetiSure Cyto CGH 4x180K array. Log ratios are indicated on solid lines for non-mosaic, 50%, 20%, and 15% mosaicism conditions. C) Table illustrating observed vs. expected arithmetic and log ratios for different mosaicism conditions and chromosomes (Gain=non-mosaic, 50% gain = 50:50 mixture, etc.)

Seamless, Comprehensive CGH Workflow



These designs are an integral part of the Agilent CGH complete workflow, which includes DNA QC, labeling (SureTag Labeling Kit), scanning (SureScan Microarray Scanner), data analysis (CytoGenomics) and interpretation (Alissa Interpret).

Ordering details

	PN	Volume	Total # samples
GenetiSure Cyto CGH Microarray kit, 8x60K	G5982A	3 slides	24
GenetiSure Cyto CGH Microarray kit, 4x180K	G5983A	3 slides	12
GenetiSure Cyto CGH+SNP Microarray kit, 4x180K	G5984A	3 slides	12
GenetiSure Cyto CGH Microarray, 8x60K*	G5982B	1 slide	8
GenetiSure Cyto CGH Microarray, 4x180K*	G5983B	1 slide	4
GenetiSure Cyto CGH+SNP Microarray, 4x180K*	G5984B	1 slide	4
GenetiSure Cyto CGH Microarray bundle, 8x60K**	G5982C	6 slides	48
GenetiSure Cyto CGH Microarray bundle, 4x180K**	G5983C	12 slides	48
GenetiSure Cyto CGH+SNP Microarray bundle, 4x180K**	G5984C	12 slides	48

	PN
SureScan scanner	G4900DA
SureScan Dx scanner****	G5761AA
Hybridization oven	G2545A
Hybridization chamber	G2534A
SureCycler 96 samples	G8800A G8810A

**** SureScan Dx Scanner available in select regions.*

	PN	Total # reactions	
		8X	4X
		Total number of samples	
SureTag Complete Labeling kit	5190-4240	50	25
SureTag labeling kit RT components purification columns	5190-3391	25	-
Cot-1 Human DNA	5190-3393	312	125
		Total number of slides	
Oligo aCGH/Chip Hybridization kit	5188-5220	25	25
Oligo aCGH/Chip Wash Buffer set	5188-5226	40	40
Pack 5 Backing slide (8 arrays per side)***	G2534-60014	5	-
Pack 5 Backings slide (4 arrays per slide)***	G2534-60011	-	5

* *Single arrays are made to order and follow the same lead time as custom arrays.*
** *Bundle includes arrays and all the reagents needed to process samples.*

CGH & CGH+SNP Microarray Software

Agilent Genomic Workbench

RUO

Agilent Genomic Workbench (AGW) software provides powerful analysis of key microarray applications, including CGH, CGH+SNP, ChIP-on-Chip, and DNA Methylation on both human and model organisms. With AGW, scientists can change filters, thresholds, and other settings to optimize the real-time visualization effects.

Analyzing multiple DNA microarray data in a single system helps streamline genomic workflows. In addition, the system features the ability to easily alter analysis settings, test different filters and thresholds, and visualize the effects in real-time.

For Research Use Only. Not for use in diagnostic procedures.

Features

- Suitable for many different aspects of DNA microarray research, including CGH, CGH+SNP, ChIP-on-chip and DNA Methylation
- Can carry out basic research on both human and non-human samples
- Features the ability to change analysis settings, such as filters and thresholds
- Real-time visualization effects
- A single powerful, intuitive and integrated software package suitable for a range of genomic data analysis processes

CGH & CGH+SNP Microarray Software

CytoGenomics Software RUO

Agilent CytoGenomics software provides advanced data analysis tools for cytogeneticists. The system features a streamlined workflow from data upload to final report and is capable of processing CGH and CGH+SNP data from both constitutional and hematological cancer samples.

This multi- analysis software is designed specifically for cytogenetic research, to give biological context to recorded data. The intuitive cytogenetic analysis workflow can accurately detect copy-number changes and copy-neutral variations, including LOH and UPD, and output the results in a range of convenient formats.

For Research Use Only. Not for use in diagnostic procedures.

Features

- Provides cytogeneticists with the capability to carry out effective analysis and triage of their CGH and CGH+SNP data from both constitutional and cancer samples.
- A streamlined workflow that is automation-enabled from data upload to analysis and report.
- The software contains optimized algorithms for the accurate detection of copy-number changes and copy-neutral variations, including LOH and UPD.
- Software includes functions used to suppress, classify, edit, and annotate aberrations and report generation.
- Convenient input and output support, allowing for integration with LIMS, is provided.
- CytoGenomics is designed specifically for cytogenetic research, to put data into biological context.
- Support for direct upload of results to Agilent Alissa Interpret for further interpretation and triage of sample aberrations.

Agilent Feature Extraction Software

Automated Image Analysis Paired with QC Tools

Product Note

One of the big challenges in microarray data analysis is generating reliable, high-quality image-analysis results. Agilent's Feature Extraction (FE) software reads and processes up to 100 raw microarray image files in an automated, walkaway mode. It finds and places microarray grids, rejects outlier pixels, accurately determines feature intensities and ratios, flags outlier features, and calculates statistical confidences. Application-specific QC reports summarize multiple analyses. FE is a key component of Agilent's comprehensive informatics platform that integrates complementary technologies and multidisciplinary approaches. It produces output files compatible with Agilent's GeneSpring GX, GeneSpring Workgroup, and DNA Analytics software, as well as Rosetta® Resolver and other microarray data analysis applications.

"Fantastic tool! The QC Tool and Metric Sets have enabled us to improve our microarray protocols and ensure optimal quality. It has become an essential component of our microarray processing pipeline."

—Dr. Alan A. Dombkowski
Assistant Professor and Director,
Microarray & Bioinformatics
Facility Core
Wayne State University

The Application Note titled "Enhanced Quality Assessment Using Agilent Feature Extraction QC Metric Sets, Thresholds, and Charting Tools" (5989-5952EN) overviews new quality control outputs and tools — metric sets, thresholds, and the QC tool — for Agilent Feature Extraction

Features-at-a-Glance

- **Extended dynamic range** – Quantify low-abundance transcripts without saturating high-abundance transcripts (using an Agilent scanner
- **Multiple application usage** – Analyze gene expression (GE), CGH, miRNA, and ChIP-on-chip data
- **Multiple format and density compatibility** – Process both 244K and Agilent's new SurePrint G3 density arrays as well as 1, 2, 4, and 8 microarrays per slide with the click of the mouse.
- **Output file compatibility** – Analyze with Agilent integrated informatics or public domain programs
- **Convenient yet flexible workflows** – Take advantage of preloaded, user-modifiable default protocols already optimized for individual applications
- **Integration with eArray** – automatically update microarray annotation and image analysis protocols
- **Improved gridding** – Automatically grid single and multiplex microarrays with minimal manual intervention
- **QC Charting Tools** – Efficiently monitor microarray processing performance of hundreds of extractions and create new metrics and thresholds for your own workflow
- **QC Metric Sets with thresholds** – Guidance on identifying key metrics and establishing normal metric ranges (for Agilent Gene Expression two-color microarrays)
- **Software updates** – Be automatically notified of new software releases
- **Convenient QC report PDF** – Easily share QC Reports and QC Charts

Agilent Technologies

Accurate Data Extraction

Feature Extraction software delivers the maximum amount of high-quality data from each and every microarray run. When used in conjunction with a high-density Agilent microarray and an Agilent Microarray Scanner, it extends the dynamic range to accurately measure both very high- and very low-intensity features. Feature Extraction identifies the highest quality pixels in each feature for intensity quantitation, flags outlier features, and detects and removes spatial gradients and local backgrounds. Data is normalized using a combined rank consistency filtering with LOWESS intensity normalization. Output data includes summary statistics for each microarray and feature, including initial, intermediate, and final intensity values, optional log ratio values, automated flagging information, statistical confidence values, and Spike-in regressions.

Application-Specific QC Reports

QC reports are tailored to specific microarray applications and document processing quality and reproducibility of sample preparation, labeling, hybridization, and working conditions for gene expression (both one- and two-color) as well as CGH and miRNA applications. A typical QC report like the example shown in Figure 1 contains values and graphs that include general microarray processing metrics, application-specific quality metrics, and Spike-in probe set metrics (for GE platforms).

Built-in QC features detect, disclose, and document data quality issues arising from technical sample preparation and hybridization issues including sample degradation, wash artifacts, and ozone exposure. Feature Extraction reports also provide a visual display of spot finding on all four microarray image corners, and document replicated probes, log ratios, and spatial distributions of statistically significant features.

The optional QC Charting tool can generate QC metric sets tailored to your experimental conditions (Figure 2). These metric sets can be imported into Feature Extraction and implemented to monitor processing and overall data quality. It allows customized sorting, color- and shape-by attributes and is a powerful tool for visualizing and highlighting trends and patterns.

Keep Current with eArray

Feature Extraction ensures that you have the latest microarray annotation and image analysis protocols through integration with eArray. Simply input your eArray login information and whenever Feature Extraction runs, it will check for updated information. See Figure 3.

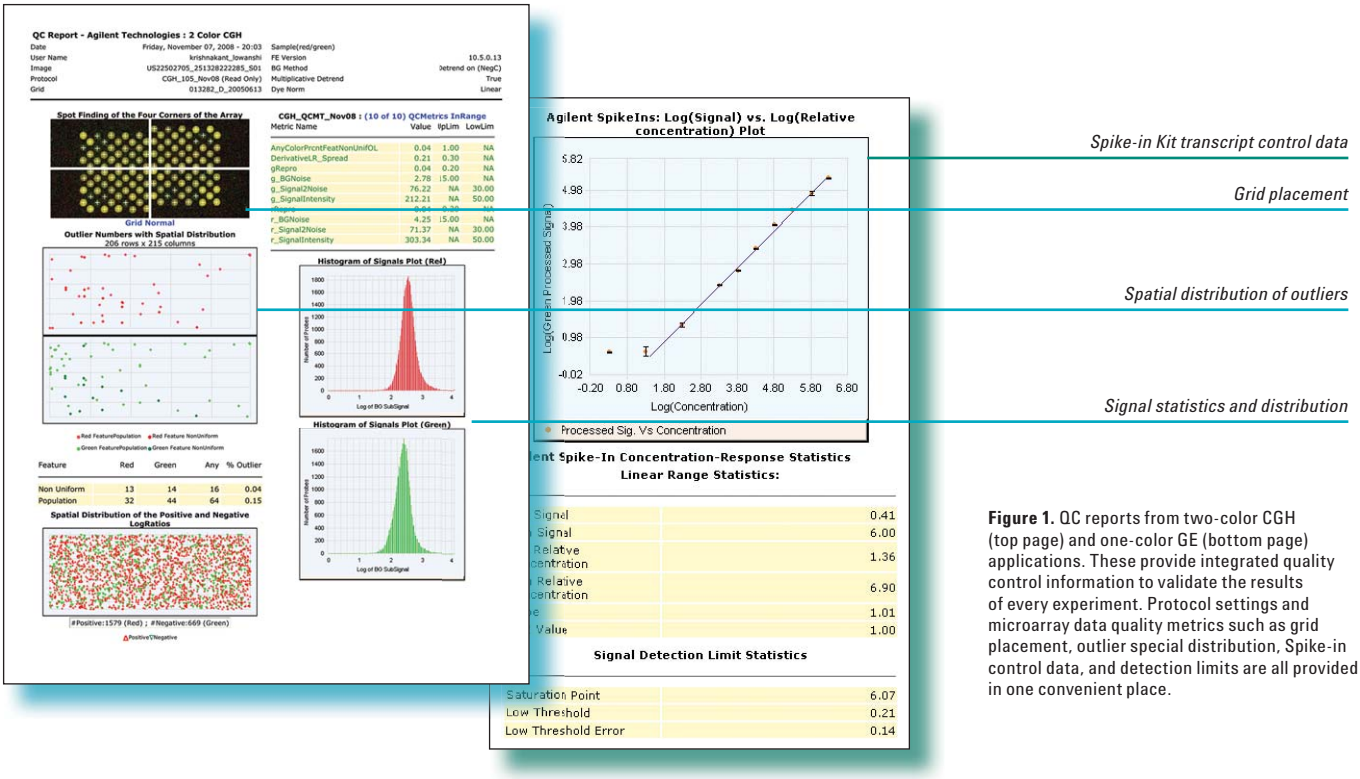


Figure 1. QC reports from two-color CGH (top page) and one-color GE (bottom page) applications. These provide integrated quality control information to validate the results of every experiment. Protocol settings and microarray data quality metrics such as grid placement, outlier special distribution, Spike-in control data, and detection limits are all provided in one convenient place.

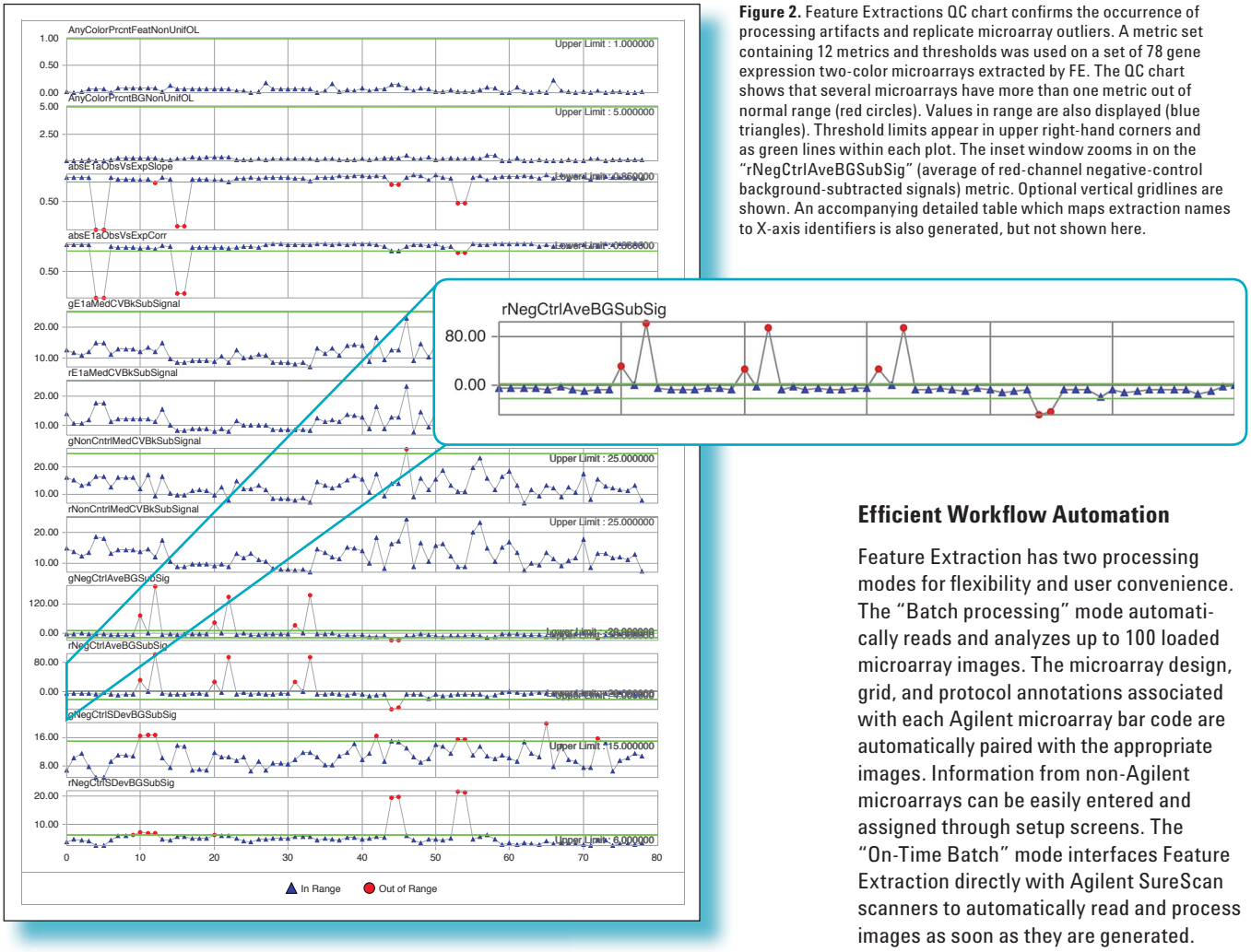


Figure 2. Feature Extractions QC chart confirms the occurrence of processing artifacts and replicate microarray outliers. A metric set containing 12 metrics and thresholds was used on a set of 78 gene expression two-color microarrays extracted by FE. The QC chart shows that several microarrays have more than one metric out of normal range (red circles). Values in range are also displayed (blue triangles). Threshold limits appear in upper right-hand corners and as green lines within each plot. The inset window zooms in on the "rNegCtrlAveBGSubSig" (average of red-channel negative-control background-subtracted signals) metric. Optional vertical gridlines are shown. An accompanying detailed table which maps extraction names to X-axis identifiers is also generated, but not shown here.

Efficient Workflow Automation

Feature Extraction has two processing modes for flexibility and user convenience. The "Batch processing" mode automatically reads and analyzes up to 100 loaded microarray images. The microarray design, grid, and protocol annotations associated with each Agilent microarray bar code are automatically paired with the appropriate images. Information from non-Agilent microarrays can be easily entered and assigned through setup screens. The "On-Time Batch" mode interfaces Feature Extraction directly with Agilent SureScan scanners to automatically read and process images as soon as they are generated. Automated FTP uploads save your data to a specified server or workstation.

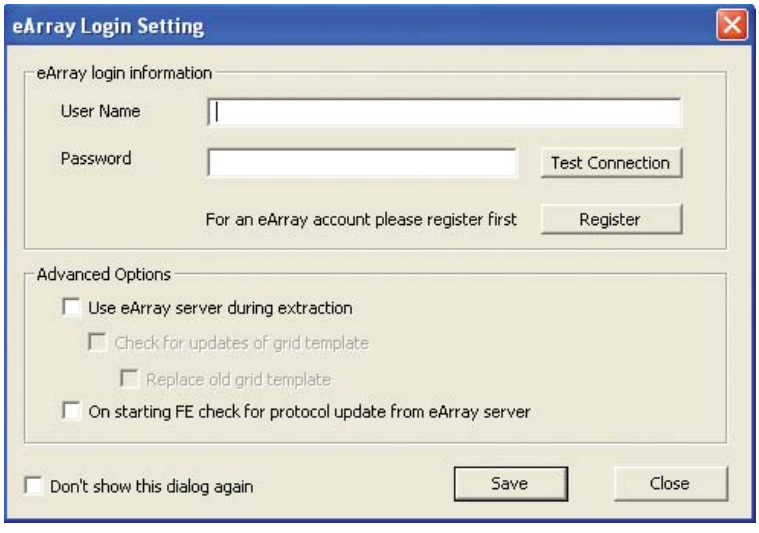


Figure 3. By entering your e-array login information and selecting the desired Advanced Options, Feature Extraction can automatically check and apply updates to grid templates and extraction protocols.

Output Files Compatible with Industry Standard Analysis Applications

Images and data are saved in JPEG, GEML, MAGE, tab-delimited text, and other universal file types. Disk space and network bandwidth can be conserved through options to reduce and compress the output files. The data is compatible with a wide variety of informatics packages. The data flow has been tested and optimized for import into Agilent's integrated informatics products including Agilent's GeneSpring GX, GeneSpring Workgroup, and DNA Analytics software, as well as Rosetta® Resolver.

Microarray Format	Scan Resolution
Agilent High-Density	5 µ
Agilent High-Density Multiplex	5 µ
Non-Agilent	Varies
Agilent SurePrint G3	3 µ

Recommended System Requirements

CPU	Pentium® III 1.5 GHz or higher (Pentium IV 2.0 GHz or higher recommended)
Operating Systems	Microsoft Windows® XP 32-bit, Windows Server 2003 SP1, Windows Vista 32-bit, Windows Vista X64, Windows XP X64
RAM	2 GB (4 GB recommended for high-density 244K microarrays)
Hard Disk Space	40 GB

PC must be able to load MSDE 2000 Release A version 8.0

Ordering Information

Feature Extraction Software Commercial 1-year Perpetual Upgrade License*	G4460AA
Feature Extraction Software Commercial 2-year Perpetual Upgrade License	G4461AA
Feature Extraction Software Commercial 3-year Perpetual Upgrade License	G4462AA
Feature Extraction Software Not-for-profit 1-year Perpetual Upgrade License	G4463AA
Feature Extraction Software Not-for-profit 2-year Perpetual Upgrade License	G4464AA
Feature Extraction Software Not-for-profit 3-year Perpetual Upgrade License	G4465AA
Agilent DNA Microarray Scanner Bundle (includes two 1-year Perpetual Upgrade Licenses for FE)	G2565CA

*A Perpetual Upgrade License is a permanent license that allows for software updates for the specified time period.

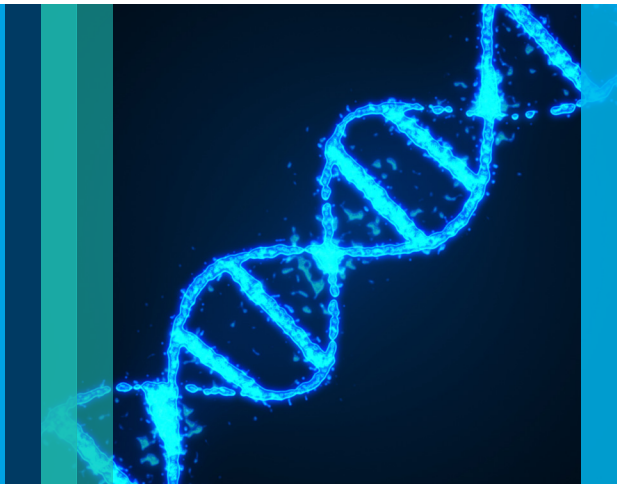
About Agilent's Integrated Workflows

Agilent Technologies is a leading supplier of life science research systems that enable scientists to understand complex biological processes, determine disease mechanisms, and speed drug discovery. Engineered for sensitivity, reproducibility, and workflow productivity, Agilent's integrated workflows include instrumentation, microfluidics, software, microarrays, consumables, and services for genomics, proteomics, and metabolomics applications.

Agilent Technologies

SureDesign Custom Portal

Custom designs made simple



Flexible Design Software for Your Custom Needs

SureDesign is our free-to-use web portal that allows you to create NGS, microarray, CRISPR, or FISH probes for custom designs tailored to your specific research requirements.

With more than a decade of experience, our SureDesign engineers are market-leading experts at oligonucleotide probe design. Continuous improvement to our design algorithms ensures your evolving needs are met, no matter the application.

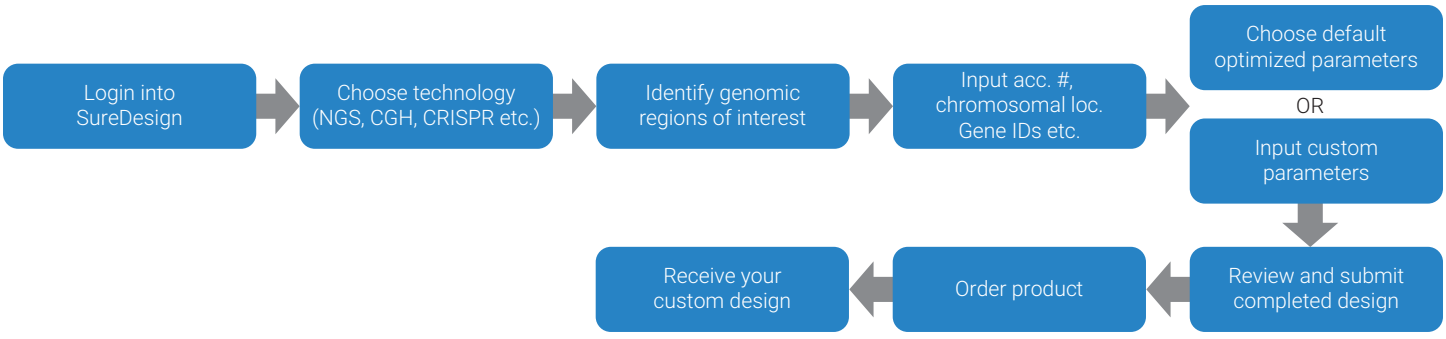
SureDesign Provides You With:

- Flexible, adaptable software for probe design on all Agilent Genomics platforms and applications
- A guided, easy-to-use precision workflow for creating your custom designs
- Our leading NGS probe selection algorithm for improved sequencing data
- Access to empirically validated catalog probe designs from our microarrays and SureSelect libraries

Simple Ordering for Complex Designs

Whether you want to start with an existing design or to create one from scratch, the process is simple and offers unmatched content flexibility. Simply log in, choose your platform, select your targets, submit your design, and have it delivered. Creating and submitting a design is quick and painless—the rest is up to us.

Easy Steps to Creating Custom Designs



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Trusted Answers

Up-To-Date Algorithms for Your Latest NGS Needs

Our newest advancements in target enrichment NGS probe design give you increased capture specificity and sequencing uniformity, resulting in reduced capture size and better sequencing data. Additionally, the latest SureDesign algorithm is tuned to provide you with optimized hybridization uniformity and kinetics for both 90 minute and overnight SureSelect hybridization protocols. This gives you the highest performance possible for your hybridization capture NGS experiments.

An NGS Platform for Multiple Species

SureDesign gives you a single, unified platform that supports custom NGS target enrichment designs for over 10 species. We offer design capabilities for human (hg19 and hg38), mouse (mm9 and mm10), rat, bovine, canine, and more. Simply provide your custom target sequences in your format of choice (gene symbols, accession ids from multiple databases, genomic coordinates, etc.) and SureDesign will quickly identify the genomic coordinates to cover. In addition, users can create custom NGS libraries for any species by uploading their own sequences.

NGS Designs with Confidence

No design experience? No problem. With our Agilent Design Testing Service, our expert scientists will help you make your NGS vision a reality. Agilent will assist you during the design process, create your panel(s), and test their performance. You will have the opportunity to see exactly how your design performs before your experiments even begin.

Agilent

Trusted Answers

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