

GenetiSure Pre-Screen Complete kit with MDA Whole Genome Amplification.

Preimplantation genetics research is a fast-growing field driven by technological advances that enable researchers to investigate genomic abnormalities in a small number of embryonic cells. Agilent's highly sensitive oligonucleotide aCGH technology provides features that make it unique for this application providing high resolution down to <2 Mb, flexible throughput and fast time to results, allowing you to process both fresh and frozen samples.

Features



Easy

- Based on Agilent CGH platform.



High resolution

- Ability to call aberrations down to <2 Mb.



Fast

- From sample to results in less than 8 hours.



Flexible

- Use day 3 or day 5 embryo biopsy, fresh or frozen.
- Flexible formats to accommodate throughput needs.



Low-cost

- Cost effective, starting from 6 samples/run.

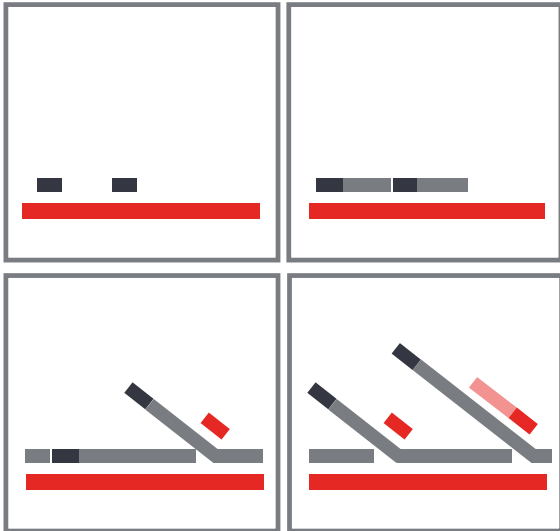
Whole genome amplification method

The kit includes QIAGEN REPLI-g Single Cell kit based on an optimized formulation of a high-fidelity Phi29 polymerase to amplify complex genomic DNA using Multiple Displacement Amplification (MDA) technology. MDA limits introduction of amplification bias, so it's highly suited for downstream applications, including next-generation sequencing (NGS) and array-based comparative genomic hybridization (CGH).

Protocol workflow



Pre-Screen with REPLI-g WGA



Advantages of MDA protocol:

- High-fidelity Phi29 polymerase.
- Gentle alkaline incubation for low DNA fragmentation.
- Designed to provide high yields from single cells.
- Average product length of over 10 Kb.
- Complete genome coverage.

Kit application:

The Agilent GenetiSure Pre-Screen Complete kit is a cost-effective solution that enables:

- Rapid identification of aneuploidies and copy number changes from samples of few cells, like blastomere and trophoctoderm biopsies.
- Detection of genomic aberrations down to 5-10 Mb routinely and as low as 1 Mb*.

Kit description:

- The kit includes QIAGEN REPLI-g MDA whole genome amplification, providing highly uniform amplification across the entire genome, with minimal locus bias.
- Amplification & labeling bundle includes all reagents needed to process samples, and to support the assay on multiple array formats.
- Assay can be performed in approximately eight hours, making it the fastest and most flexible PGT solution on the market.
- Cost-effective screening starting from 6 samples/ experimental run.
- Kit includes male and female reference DNA.

**Using the single cell small aberration method in CytoGenomics software.*

CytoGenomics v5.0 software

An intuitive user interface for single cell triage and easy generation of analysis reports.

- Compare samples to a reference from another slide.
- Use the feature-extracted microarray text output as the sample files.
- Protocol analyzes images generated by both the Agilent SureScan scanner and the Innopsys scanner.
- Three single cell data analysis methods implemented in the CytoGenomics software allow detection of:
 - Aberrations > 5 Mb
 - Small aberrations > 1 Mb
 - Aberrations > 20 Mb in mosaic samples

Technical description



	P/N G5963A, GenetiSure Pre-Screen Array Kit 8x60K, 3 slides	P/N G5962A, GenetiSure Pre-Screen Array Kit 4x180K, 3 slides
Format	8x60K 	4x180K 
Design ID	067559	067649
Total features	62,976	180,879
Control grid feature count	3886	6539
Biological features	55,090	170,340
Distinct Biological features	54,911	83,208 present in duplicate
Median probe spacing	49,763	30,779
Average probe spacing	52,106	33,000
Chromosomes with increased density	13,18, 20, 21, 22 and X	13,18, 20, 21, 22 and X

Table 1. Although probes are slightly more closely spaced on the 4x180K array compared to the 8x60K microarrays, the effective biological resolution is the same for both microarray formats. The 4x180K microarrays are intended to be used as a cost-effective solution when throughput is limited to a few samples.

	Pre-Screen with QIAGEN REPLI-g	Pre-Screen with PicoPLEX
WGA kit	QIAGEN REPLI-g	Takara (Rubicon) PicoPLEX
Array design	Unique probe selection optimized for use with the multiple displacement-based WGA methods. Uniform genome-wide probe coverage, with increased density on chromosomes 13, 18, 20, 21, 22, X and Y, commonly associated with aneuploidy events.	
Analysis	Simplified analysis with CytoGenomics Software. Workflow-based, easy-to-use tool, imports images directly from the scanner, free of charge	
Technical performance	Resolution down to > 1 Mb	Resolution down to 5-10 Mb
	Lower false positive call rate (for aberrations > 5 Mb) with shorter hybridization time	
	Ability to call mosaic down to 20%	
Workflow	Minimum turnaround time (TAT) 8 hr	Minimum TAT 16 hr
	Protocol validated for 8x60K and 4x180K	Protocol validated only for 8x60K slide
Sample type	Tested single cell protocol with good results	Single cell protocol not validated
	Blastomere (day 3) and Trophectoderm (day 5)	Trophectoderm (day 5)
Processing	Throughput: min 6 sample/run without wasting reagents	Throughput: min 14 samples/run
	Validated on Agilent SureScan and Innopysy (Innoscan 710) scanners	Validated on Agilent scanners

Table 2. Quick comparison guide to show differences between the QIAGEN REPLI-g kit and the PicoPLEX kit.

Ordering information

Product Number	Product	Description
G9500A	GenetiSure Pre-Screen Complete kit 8x60K	Array and reagents to analyze 42 samples and 6 controls
G9501A	GenetiSure Pre-Screen Complete kit 4x180K	Array and reagents to analyze 32 samples and 12 controls
G9502A	GenetiSure Pre-Screen amp & labeling kit	Amplification and labeling reagents to process 48 samples (samples and controls)
G9563A	GenetiSure Pre-Screen Array kit 8x60K	3 slides – 48 samples
G5962A	GenetiSure Pre-Screen Array kit 4x180K	3 slides – 24 samples
G5972A	GenetiSure Pre-Screen kit 8x60K - X/Y	1 slide – 16 samples
G5973A	GenetiSure Pre-Screen kit 8x60K - X/Y	1 slide – 8 samples

Product Number	Product
5190-4240	SureTag Complete DNA Labeling kit* (including Agilent M/F Reference, 100 rxn 8x, 50 rxn 4x)
5190-3393	Human Cot-1 DNA
Low 5188-5220 High 5188-5380	Agilent Oligo aCGH Hybridization kit to process 25 (low) or 100 (high) slides
5188-5226	Agilent Oligo aCGH Wash Buffer 1 and 2 Set
G2534-60018	Hybridization Chamber Gasket Slide kit 8-pack, 3 gasket slides
G2534-60011	Hybridization Chamber Gasket Slide kit 4-pack, 5 gasket slides

*The SureTag Complete DNA Labeling kit includes 50 SureTag purification columns. Use p/n 5190-3391 to purchase additional columns needed to process 8x microarray.

Product Number	Product
G2534A	Hybridization chamber, stainless
G2545A	Hybridization oven
G2530-60029	Hybridization oven rotator rack
G4900DA	SureScan microarray scanner*

*G5761AA SureScan Dx available in select countries.

Agilent CytoGenomics software v5.0 license (free)
Download: https://www.agilent.com/en/download-agilent-cytogenomics-software

Kit composition

G9500A GenetiSure Pre-Screen Complete kit 8x60K

Sub Kit Part #	Description
5191-4065	REPLI-g® Single Cell kit (48)
G9563-60510	GenetiSure Pre-Screen Microarray kit, 8x60K
G2534-60018	Hybridization Chamber Gasket Slide kit, 3 slides, 8-pack format
5190-7730	GenetiSure Pre-Screen Purification Column
5190-3797	Human Reference DNA Female
5190-3796	Human Reference DNA Male
5190-3393	Human Cot-1 DNA
5190-3399	SureTag Labeling kit, -20C Part

G9501A GenetiSure Pre-Screen Complete kit 4x180K

Sub Kit Part #	Description
5191-4065	REPLI-g® Single Cell kit (48)
G5962-60510	GenetiSure Pre-Screen Microarray kit, 4x180K
G2534-60017	Hybridization Chamber Gasket Slide kit, 6 slides, 4-pack format
5190-7730	GenetiSure Pre-Screen Purification Column
5190-3797	Human Reference DNA Female
5190-3796	Human Reference DNA Male
5190-3393	Human Cot-1 DNA
5190-3399	SureTag Labeling kit, -20C Part

G9502A GenetiSure Pre-Screen Amp & Labeling kit

Sub Kit Part #	Description
5191-4065	REPLI-g® Single Cell kit (48)
5190-7730	GenetiSure Pre-Screen Purification Column
5190-3797	Human Reference DNA Female
5190-3796	Human Reference DNA Male
5190-3399	SureTag Labeling kit, -20C Part

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This information is subject to change without notice.

PR7000-2334
 © Agilent Technologies, Inc. 2018, Published in the USA
 Original publication date: December 5, 2018
 Revision date: October 11, 2019
 5994-0543EN