

24sure™+ Microarray Pack

Accurate, comprehensive preimplantation screening of structural imbalances in 12 hours.

Description

A 24sure+ microarray pack provides the reagents to perform comprehensive chromosome screening of single cells or a few cells using the 24sure protocol (dual-channel). One pack contains reagents to process 16 samples and includes: 24sure+ microarray slides (8), Fluorescent Labeling System (32 reactions), SureRef Reference Male DNA, and COT Human DNA. This product information sheet provides details of the 24sure+ microarrays. For detailed product descriptions of other pack components, see www.illumina.com.

24sure+ microarrays are used for analyzing whole-chromosome copy-number imbalances and subchromosomal structural imbalances. Fluorescently labeled test and reference DNAs are hybridized to immobilized probes on microarray slides so that regions of copy number imbalance, when present, can be identified. 24sure+ microarrays are designed specifically for use with amplified single cells or a few cells.

Supply

Reagents to perform comprehensive chromosome screening with 24sure+ microarrays are available in packs. Each 24sure+ Pack is suitable for 32 labeling reactions, 16 hybridizations. For detailed information on the 24sure+ Pack, see the *Contents* section.

In addition to the 24sure+ microarray pack, the 24sure+ assay requires use of a SurePlex™ DNA Amplification System (50 reactions; Catalog No. PR-40-415101-00).

24sure+ microarrays are supplied at room temperature, desiccated and protected from light in a sealed foil bag. Each slide is labeled with a unique barcode. The foil bag is labeled with product name and version, expiration date, product number, lot number, and barcodes for each slide and the pack.

The Fluorescent Labeling System [dCTP] contains fluorescent labels, buffers, and enzymes. It is shipped on dry ice.

COT Human DNA is supplied on dry ice in a single, 1.5 ml, screw-capped tube labeled with quantity (0.4 mg), order reference number, production lot number, storage conditions, and expiration date.

SureRef Reference Male DNA is supplied on dry ice in a single, 1.5 ml, screw-capped tube labeled with quantity, order reference number, production lot number, storage conditions, and expiration date. All components of a pack are supplied with a minimum expiration date of 2 months.

Storage

24sure+ microarrays should be stored desiccated, protected from light, and at room temperature until required.

The Fluorescent Labeling System, COT Human DNA, and SureRef Reference Male DNA should be stored at -20°C in a non–frost-free freezer until required.

24sure+ microarrays and all reagents should be used before the expiration date.

Technical Specifications

24sure+ microarrays are designed to investigate wholechromosome copy-number imbalance or aneuploidy and large-scale, subchromosomal structural imbalances in a single cell or a few cells.

Each 24sure+ microarray slide contains two hybridization areas or subarrays. The DNA probes that make up each 24sure+ subarray are derived from bacterial artificial chromosomes (BAC) DNA clones from the Roswell Park (RP-nomenclature) human genome collection. BAC clones are PCR-amplified and immobilized on Codelink-coated glass microarray slides; each clone is spotted in duplicate.

BAC clones used on 24sure+ microarrays have been selected for performance using data from ~1,000 dye-swap hybridizations. Clones were selected at approximately 600 Kb intervals, to respond strongly and specifically to flow-sorted chromosomes and not be in polymorphic or disease regions. Following data analysis with BlueFuse® Multi software that includes smoothing, the effective resolution of 24sure+ microarrays is optimally 10 Mb, but the arrays can achieve 2 Mb resolution.

The key elements of the 24sure+ array design are summarized in Table 1.

Table 1: Key Elements of the 24sure+ Array

Catalog No.	Description	Version	Lot Range	Unique Probes	Average Spacing/ Effective Resolution	
PR-22-408601-00	24sure+ Microarrays	1.0	001T - present	4,834	623 Kb whole-genome/10 Mb	

Table 2: 24sure+ Pack Contents

Catalog No.	Description	No. Rxns	Item No.	Description	Size
PR-10-408602-PK	24sure+ Pack	16	2 × 15043050	24sure+ Microarrays	2 × 4 slides
			15043058	Fluorescent Labeling System [dCTP]	32 rxns
			15043065	COT Human DNA	0.4 mg
			15043068	SureRef Reference Male DNA	128 µl

Software Specifications

The annotation databases used by BlueFuse Multi software during microarray analysis are regularly updated with new array types and annotation information, and can be downloaded from the customer area of the website.

24sure+ microarrays are supported in BlueFuse Multi v2.4 and all subsequent releases.

Quality Control

Each lot of 24sure+ microarrays undergoes a thorough quality control procedure to make sure that the arrays perform to the highest standard. Slides from the beginning, middle, and end of each printed lot are hybridized with sex-mismatched DNAs using the CytoChip protocol. They are analyzed for performance (signal, noise, dynamic range) and physical integrity (including feature number, morphology, and merging).

Each lot of Fluorescent Labeling System, COT Human DNA, and SureRef Reference Male DNA are checked for performance in hybridizations. Metrics, including signal to noise ratio, the spread of data points on the autosomal chromosomes, and the shift from 0 (log₂ scale) of data points on the sex chromosomes are used as a measure of quality. They have to exceed a threshold set from historical data.

To make sure that components of the Fluorescent Labeling System are supplied with the correct quantities, three kits from each lot are checked for reagent fill volumes.

Contents

See Table 2 for a complete list of kit contents and part numbers.

Safety Information

Safety data sheets are available for download from www.cambridgebluegnome.com.

4085 4086 4087; 24sure Slide SDS

PR-30-413103-00: Components of the Fluorescent Labeling System

[dCTP]

PR-40-413503/413510: COT Human DNA

PR-415203-00: SureRef DNA

Additional Documents

Additional documents available for download include:

- 24sure Dual Channel User Guide
- 24sure Dual Channel Summary Protocol
- 24sure Dual Channel Planner
- Annotation database for BlueFuse Multi (for all microarray formats)
- A GAL file for each printed lot of 24sure+ slides
- QC report for each printed lot of 24sure+ slides
- 24sure+ Translocation Technical Note
- 24sure+ Translocation Detection Spreadsheet

Ordering Information

Product	Catalog No.
24sure+ Pack (16 hybridizations)	PR-10-408602-PK

 $\textbf{Illumina} \bullet 1.800.809.4566 \ toll-free \ (U.S.) \bullet +1.858.202.4566 \ tel \bullet \ techsupport@illumina.com \bullet \ www.illumina.com$

