CytoChip™ Oligo Spike-in Controls

Sample trackers for CytoChip microarray processing.

Description

CytoChip Oligo Spike-in Controls are used as sample trackers to identify any instances of sample mishandling or scanning mix-up during microarray processing. The product provides a sample-specific identifier, permitting reconciliation of microarray data with a pre-defined patient ID.

The spike-in controls are provided in solutions that contain specific DNA amplicons that are complementary to genomic regions of no known clinical relevance. The spike-in amplicons hybridize to known oligonucleotide array probes on particular array designs.

The spike-in controls are added to samples before the digestion step of the CytoChip Oligo protocol. The concentration of the spike-in amplicons is a number of orders of magnitude greater than the sample DNA. Therefore, the fluorescence signal obtained from scanning the array at the end of the laboratory procedure shows intense signals for probes that are complementary to the spike-in amplicons. BlueFuse® Multi software is able to detect the intense spike-in amplicon signal peaks, identify the ID of spike-in present in the sample, and include the spike-in identifier in the BlueFuse Multi report.

Supply

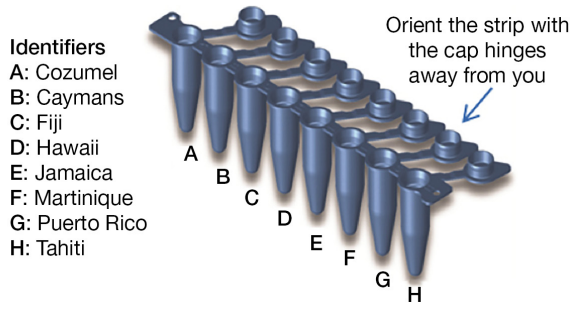
A pack of CytoChip Oligo Spike-in Control is supplied in a boxed 96-well rack sealed in a transparent plastic bag. The external label details the product name and number, the pack size, lot number, expiration date, and storage conditions. The boxed rack contains four 8-well strips containing 20 µl of a different Spike-in Control Panel Member in each well (e.g., panel member Cozumel in row A). Each sample requires 1 µl of each spike-in control. Each pack contains 80 tests per spike-in, for 640 tests in total.

An image that shows the identity and well position of each CytoChip Oligo Spike-in Control Panel Member is included in the lid of the box and is shown in Figure 1.

Storage

When stored at -20ºC or below, the expiration date of the Spike-In Control kit is 1 year from manufacture. When an 8-well strip is thawed, the individual strip can be stored for up to 2 months at 4ºC, to prevent consecutive freeze and thaw cycles, while the remaining kit reagents are kept frozen. The disposal of expired kit reagents and any by-products should always comply with the requirements of environmental protection and laboratory waste disposal legislation, as well as any local regulations.

Figure 1: Spike-In Panel Member Identifier



Technical Specifications

There are eight different spike-in controls that can be used simultaneously in eight different samples. Each spike-in control targets probes on three different chromosomes, with three amplicons on each chromosome. In total, nine amplicons are included in each spike-in control, summarized in Table 1.

Illumina microarrays that are compatible with CytoChip Oligo Spike-in Controls are shown in Table 2.

Software Specifications

The earliest version of BlueFuse Multi that supports the identification of CytoChip Oligo Spike-in Controls is v3.1. Subsequent versions of the software will support CytoChip Oligo Spike-in Controls.

Quality Control

During the quality control procedure, CytoChip Oligo Spike-in Controls are used in the CytoChip Oligo protocol and hybridized to compatible microarray slides. The performance of the spike-in controls is assessed through the $\log_2$ ratios obtained on the complementary probes when the array is analyzed. The integrity of the spike-in control is verified if the pattern of probes corresponds to the combination of spike-in amplicons added to each sample, enabling BlueFuse software to identify the spike-in panel member.

Contents

See Table 3 for a complete list of kit contents and part numbers.

Table 1: Spike-In Control Amplicons

Panel	Panel Identifier	Targeted Chromosomes
A	Cozumel	8, 9, 14
B	Caymans	8, 10, 14
C	Fiji	8, 11, 16
D	Hawaii	9, 15, 18
E	Jamaica	9, 16, 19
F	Martinique	10, 11, 18
G	Puerto Rico	10, 14, 19
H	Tahiti	11, 15, 19

Table 2: Compatible Microarrays

Catalog No.	Description	Design ID	Targeted Regions	Backbone Spacing/ Replication
PR-21-408005-00	CytoChip ISCA 8x60K 2.0	26370	497	60 Kb/×1
PR-21-408024-00	CytoChip Focus 8x60K v1.0	40942	162	94 Kb/×2
PR-21-408010-00	CytoChip ISCA 4x44K v2.0	28739	231	75 Kb/×1
PR-21-408011-00	CytoChip ISCA 2x105K v2.0	28740	497	30 Kb/×1
PR-21-408013-00	CytoChip ISCA 4x180K v2.0	30078	500	60 Kb/×1

Table 3: CytoChip Oligo Spike-in Controls Contents

Catalog No.	Description	No. Rxns
PR-40-415301-00	CytoChip Oligo Spike-in Controls	640 tests (80 tests per spike-in) in 4 × 8-well strips (20 µl/well)

Safety Information

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

CytoChip Oligo Spike-in Control

Additional Documents

Additional documents available for download include:

- CytoChip Oligo Reference Manual
- CytoChip Oligo Summary Protocol

Ordering Information

Product	Catalog No.
CytoChip Oligo Spike-in Controls	PR-40-415301-00

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