



Data Sheet

GeneChip® Sugar Cane Genome Array

The GeneChip® Sugar Cane Genome Array is designed specifically to monitor gene expression in sugar cane (*Saccharum officinarum*). The array consists of over 8,200 probe sets to interrogate approximately 7,500 sugar cane transcripts including 4,447 sugar cane UniGene clusters. The Sugar Cane Genome Array is particularly useful for agriculture researchers studying gene expression in the sugar cane plant.

The Sugar Cane Genome Array was created in collaboration with leading sugar cane researchers through the GeneChip® Consortia Program and was designed based on content from *Saccharum officinarum* UniGene Build 5 from August 27th, 2004 and GenBank® mRNAs up to November 2, 2004.

Applications

Sugar cane is an important food crop worldwide. In the EU and many other countries such as Brazil, Australia, Thailand, and India, sugar cane is one of the top export crops.

Many research programs utilize genomic approaches to aid selective breeding programs by identifying the underlying genetic mechanisms that are important for high-yield resistance to diseases and insects, and sense environmental factors that determine the productive growing areas for sugar cane. The GeneChip® Sugar Cane Genome Array provides a tool that enables researchers to elucidate these complex genetic traits and many others in the Sugar Cane plant to determine how crop production can be improved.

Array Profile

The GeneChip Sugar Cane Genome Array is a 169-format, 11-micron array design, and it

contains 11 probe pairs per probe set. Content for the array utilizes content from *Saccharum officinarum* UniGene Build 5 (August 27th, 2004) and GenBank mRNAs up to November 2, 2004.

The array contains 8,236 *S. officinarum* probe sets to monitor gene expression for approximately 6,024 distinct *S. officinarum* genes (including both Unigene and non-Unigene gene clusters).

Instrument Software Requirements

- GeneChip® Scanner 3000, enabled for High-Resolution Scanning*
- GeneChip® Operating Software (GCOS) v1.1.1, which contains the High-Resolution Scanning Update

*GeneChip Scanner 3000 High-Resolution Update is standard on all instruments shipped starting in September 2003 with serial number series 502. Previous versions (serial number series 501) will require the 00-0110 GeneChip Scanner 3000 High-Resolution Update to be installed.

Critical Specifications

Probe Sets:	8,224 sugar cane sets + 12 sugar cane control sets
Transcripts:	7,503 sugar cane transcripts + 3 sugar cane control transcripts
UniGene Clusters:	4,447 sugar cane UniGene clusters
Number of arrays in set	One
Array format	169
Feature size	11 µm
Oligonucleotide probe length	25-mer
Probe pairs/sequence	11
Hybridization controls:	<i>bioB</i> , <i>bioC</i> , <i>bioD</i> from <i>E. coli</i> and <i>cre</i> from P1 Bacteriophage
Poly-A controls:	<i>dap</i> , <i>lys</i> , <i>phe</i> , <i>thr</i> from <i>B. subtilis</i>
Housekeeping/Control genes:	Actin, ef1a, and GAPDH.
Detection sensitivity	1:100,000*

* As measured by detection in comparative analysis between a complex target containing spiked control transcripts and a complex target with no spikes.

Supporting Products

Part Number	Product Name	Description
900493	One-Cycle Target Labeling and Control Reagents ¹	Sufficient for 30 reactions. Contains: <ul style="list-style-type: none">• IVT Labeling Kit• One-Cycle cDNA Synthesis Kit• Sample Cleanup Module• Poly-A RNA Control Kit• Hybridization Controls
900494	Two-Cycle Target Labeling and Control Reagents ^{1,2}	Sufficient for 30 reactions. Contains: <ul style="list-style-type: none">• IVT Labeling Kit• Two-Cycle cDNA Synthesis Kit• Sample Cleanup Module• Poly-A RNA Control Kit• Hybridization Controls

¹Individual Kit components may be ordered separately.

²For the intermediate IVT step with unlabeled nucleotides, please order the MEGAscript[®] T7 Kit directly from Ambion.

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Ordering Information

GeneChip[®] Sugar Cane Genome Array

GeneChip[®] Sugar Cane Genome Array

900626 *Contains 2 Arrays*

900627 *Contains 6 Arrays*

900628 *Contains 30 Arrays*



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