

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 more than 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 agricultural 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 UniGene and GenBank® mRNAs.

Applications

Sugar cane is an important food crop worldwide. In the EU and many 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 to sense environmental factors that determine the productive growing areas for sugar cane. The Sugar Cane Genome Array is 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 Sugar Cane Genome Array is a 169-format, 11 µm array design, and it contains 11 probe pairs per probe set. The array utilizes content from UniGene and GenBank mRNAs.

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

Instrument/software requirements

- GeneChip® Scanner 3000
- Affymetrix® GeneChip® Command Console® Software (AGCC)

Specifications

Number of probe sets	8,224 sugar cane sets + 12 sugar cane control sets
Number of 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 per sequence	11
Hybridization controls	<i>bioB</i> , <i>bioC</i> , <i>bioD</i> from <i>Escherichia coli</i> and <i>cre</i> from P1 bacteriophage
Poly-A controls	<i>dap</i> , <i>lys</i> , <i>phe</i> , <i>thr</i> , <i>trp</i> from <i>Bacillus 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 transcriptions and a complex target with no spikes.

Ordering information

Part number	Description
GeneChip[®] Sugar Cane Genome Array	
900626	Contains 2 arrays
900627	Contains 6 arrays
900628	Contains 30 arrays

Supporting products

Part number	Description
GeneChip[®] 3' IVT Express Kit	
901228	10 reactions
901229	30 reactions

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