

GeneChip® Maize Genome Array

The GeneChip® Maize Genome Array contains probe sets to detect transcripts from *Zea mays*, one of the world's most economically important crops. The Maize Genome Array provides comprehensive coverage of more than 100 cultivars present in NCBI's UniGene data set, including the most highly represented strains: B73, Ohio43, W22, W23, W64A, and Black Mexican Sweet. The Maize Genome Array has 17,555 probe sets to interrogate approximately 14,850 *Z. mays* transcripts, which represent 13,339 genes (12,113 of which are represented in distinct UniGene clusters).

The sequence information for this array was selected from NCBI's GenBank® and *Z. mays* UniGene databases. Probe sets on the array include 15 oligonucleotide pairs to detect each transcript for added robustness and to facilitate detection of polymorphisms.

Applications

Maize is a classical genetic model for plant research and an economically important crop. The ability to apply maize sequence information to GeneChip® Arrays will increase the understanding of the molecular basis of important agronomic traits, gene regulation, genome evolution, and plant development for maize biology.

The Maize Genome Array, through examination of gene expression patterns of *Z. mays*, enables researchers to view the global transcription effects of external stimuli, such as fertilizers, pesticides, and growth conditions. The array enables greater understanding of the molecular mechanisms underlying maize phenotypic biology to increase breeding efficiency, streamline the delivery of new traits, and enable the discovery and enhancement of properties such as drought tolerance. In addition, the detailed pattern of gene expression offered by the Maize Genome Array can help researchers optimize production conditions from biomass feed stocks and distinguish the infection pathway of common maize pathogens.

Specifications

Number of probe sets, <i>Z. mays</i>	17,555
Total number of probe sets including species-specific controls	17,582
Number of transcripts, <i>Z. mays</i>	~14,850
Number of arrays in set	One
Array format	100
Feature size	11 µm
Oligonucleotide probe length	25-mer
Probe pairs per sequence	15
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	Maize genes from the commercial GeneChip® Test3 Array, including GAPDH, actin, cyclophilin 1, ubiquitin, and 18S rRNA. Additionally, there are control probe sets for 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.

Instrument/software requirements

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

Ordering information

Part number	Description
GeneChip[®] Maize Genome Array	
900614	Contains 2 arrays
900615	Contains 6 arrays
900616	Contains 30 arrays

Supporting products

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

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