AFFYMETRIX®

Data Sheet

GeneChip® Tomato Genome Array

The GeneChip® Tomato Genome Array is designed specifically to monitor gene expression in tomato (*Lycopersicon esculentum*). The comprehensive array consists of over 10,000 *L. esculentum* probe sets to interrogate over 9,200 *L. esculentum* transcripts. The Tomato Genome Array is particularly useful for agriculture researchers studying tomato genetics.

This array was created in collaboration with leading tomato researchers through the Affymetrix GeneChip® Consortia Program and was designed based on content from *Lycopersicon esculentum* UniGene Build #20 (October 3, 2004) and GenBank® mRNAs up to November 5, 2004.

Applications

Tomato is an important food crop worldwide. In the United States, Europe, and Brazil, tomato is an economically important crop for fresh consumption and processing into sauces and tomato paste.

Many research programs utilize genomic approaches to aid selective breeding programs to identify the underlying genetic mechanisms that are important for high crop yield, resistance to diseases and insects, and response to environmental factors that influence the productive growing areas for tomato plants. The GeneChip® Tomato Genome Array provides a tool that enables researchers to elucidate these complex genetic traits in the tomato plant to determine how crop production can be improved.

Array Profile

The GeneChip Tomato Genome Array is a 169-format, 11-micron array design and contains 11 probe pairs per probe set. The sequence information for this array was selected from public data sources including *Lycopersicon esculentum* UniGene Build #20 (October 3, 2004) and GenBank® mRNAs up to November 5, 2004.

The array contains over 10,000 *L. esculentum* probe sets to monitor gene expression for over 9,200 *L. esculentum* genes.

Instrument Software Requirements

- GeneChip® Scanner 3000, enabled for High-Resolution Scanning* or GeneChip® Scanner 3000 7G
- 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:	10,038 tomato probe sets + 11 tomato control probe sets
Transcripts:	9,254 tomato transcripts + 10 tomato control transcripts
UniGene Clusters:	~ 4,600 tomato UniGene 3′ clusters ~ 3,400 tomato non-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:	*bioB, bioC, bioD* from *E. coli* and *cre* from P1 Bacteriophage
Poly-A controls:	*dap, lys, phe, thr, trp* from *B. subtilis*
Housekeeping/Control genes:	beta-actin, elongation factor 1, GAPDH *Test3 controls*: 17S rRNA, 25S rRNA, glutathione S-transferase, phytochrome B2, ubiquitin
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.

Supporting Products

Part Number	Product Name	Description
900493	GeneChip® One-Cycle Target Labeling and Control Reagents[1]	Sufficient for 30 reactions. Contains: · IVT Labeling Kit · One-Cycle cDNA Synthesis Kit · Sample Cleanup Module · Poly-A RNA Control Kit · Hybridization Controls
900494	GeneChip® Two-Cycle Target Labeling and Control Reagents[1,2]	Sufficient for 30 reactions. Contains: · IVT Labeling Kit · Two-Cycle cDNA Synthesis Kit · Sample Cleanup Module · Poly-A RNA Control Kit · Hybridization Controls

[1]Individual Kit components may be ordered separately.

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

Affymetrix® products can be purchased directly from Affymetrix in the United States, many European countries, and many Asian countries. For all other territories, please view a list of our distribution partners, which can be located at: http://www.affymetrix.com/site/contact/index.affx.

Ordering Information

GeneChip® Tomato Genome Array

GeneChip® Tomato Genome Array

900737 *Contains 2 Arrays*
900738 *Contains 6 Arrays*
900739 *Contains 30 Arrays*

To Order

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