AFFYMETRIX®

Data Sheet

GeneChip® Arabidopsis ATH1 Genome Array

The GeneChip® Arabidopsis ATH1 Genome Array is a versatile and powerful tool for the analysis of gene expression in *Arabidopsis thaliana*, the most commonly studied plant model organism. The array contains probes synthesized *in situ* and designed to measure temporal and spatial gene expression in over 24,000 gene sequences. Accelerate your plant biology research by employing the power of the GeneChip platform.

Applications

STUDY GENES INVOLVED IN DEVELOPMENT

The advantages of short generation time, small genome size, and ease of cultivation make Arabidopsis an excellent model for the study of photosynthesis, embryology, photobiology, physiology, and developmental gene expression.

MEASURE GENE EXPRESSION IN VARYING ENVIRONMENTAL CONDITIONS

Environmental and chemical stimuli alter gene expression profiles. The GeneChip® Arabidopsis ATH1 Genome Array can help elucidate relationships between gene expression and phenotypic changes based on environmental factors.

COMPARE AND CONTRAST THE EXPRESSION PROFILES OF MUTANT LINES

Analyze gene expression profile differences among easily accessible mutant lines. Examine mutant plant lines to understand the mutation's effect on global gene expression.

BUILD QUANTITATIVE DATABASES

GeneChip expression arrays allow for highly parallel, reproducible, quantification of gene expression levels. The GeneChip Arabidopsis ATH1 Genome Array is an ideal tool for developing robust expression databases.

Array Content

The Arabidopsis ATH1 Genome Array, designed in collaboration with The Institute for Genome Research (TIGR), contains more than 22,500 probe sets representing approximately 24,000 gene sequences on a single array. The array is based on information from the International Arabidopsis Sequencing Project that was formally completed in December 2000. In parallel and subsequent to the genome's completion, TIGR re-annotated the entire genome in a project funded by the National Science Foundation and the resulting data were used in the design of this array.

26,200 genes were available in the TIGR-ATH1 database as of December 15, 2001. To represent as many gene sequences on the array wherever possible, non-unique probe sets were used to represent two or more highly similar genes. Preference was given to genes where there was evidence of expression, supported by database matches and robust gene models. Ultimately the more than 22,500 probe sets represent 24,000 gene sequences.

Data from the TIGR database (ATH1-121501) are available in the NetAffx™ Analysis Center at www.affymetrix.com.

Critical Specifications

Number of arrays	One
Number of sequence represented	>24,000 gene sequences
Feature size	18 µm
Oligonucleotide probe length	25-mer
Probe pairs/sequence	11
Control sequences	*E. coli* genes *bioB, bioC, bioD.* *B. subtilis* gene *lysA.* Phage P1 *cre* gene. Arabidopsis maintenance genes GAPDH, Ubiquitin, and Actin
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.

Comprehensive dynamic annotation available in the NetAffx™ Analysis Center at www.affymetrix.com, including links to TAIR, InterPro, the Gene Ontology Consortium, and TIGR.

Ordering Information

GeneChip® Arabidopsis ATH1 Genome Array

GeneChip® Arabidopsis ATH1 Genome Array

900385 *Contains 5 Arrays*

900386 *Contains 30 Arrays*

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