

## GeneChip® Rice Genome Array

The GeneChip® Rice Genome Array contains probe sets to detect transcripts from all of the high-quality expressed sequence from the entire rice genome, including 51,279 transcripts representing two rice cultivars. This unique design was created within the Affymetrix GeneChip® Consortia Program and provides scientists with a single array that can be used for the study of rice genomics.

### Introduction

For almost two-thirds of the world's population, rice (*Oryza sativa*) is the main source of nutrition. Due to growing demands for rice, scientists are exploring ways to increase both the yield and nutritional value of rice in areas of the world where hunger and drought prevail.

To address the importance of rice as a model for biological research, Affymetrix developed the GeneChip® Rice Genome Array through the GeneChip® Consortia Program. With sequences from the two most common rice cultivars, indica and japonica, this array provides scientists with a single array that can be used to simultaneously characterize thousands of rice genes.

### Applications

The Rice Genome Array enables researchers to study whole-genome expression profiles in an important model organism for monocots and cereal crops. Its relatively small genome, combined with well-developed physical and genetic maps and ease of transformation, make this a very tractable organism for molecular and genetic analysis of crop improvement traits, developmental biology, and environmental responses.

### Array profile

The Rice Genome Array offers researchers the most comprehensive and informative content for rice expression research. The design of the array was based on public content from UniGene, GenBank® mRNAs, and 59,712 gene predictions from The Institute for Genomic Research (TIGR). The efforts of the International Rice Genome Sequencing Project (IRGSP) are gratefully acknowledged, and the arrays were designed and manufactured with standard Affymetrix protocols.

### Instrument/software requirements

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

### Specifications

Number of probe sets, <i>O. sativa</i> (indica cultivar group)	1,347
Number of probe sets, <i>O. sativa</i> (japonica cultivar group)	54,168
Number of transcripts, <i>O. sativa</i> (indica cultivar group)	1,260
Number of transcripts, <i>O. sativa</i> (japonica cultivar group)	48,564
Number of arrays in set	One
Array format	49
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	Rice genes from the commercial GeneChip Test3 Array, including GAPDH, actin, cyclophilin 1, ubiquitin, 18S rRNA, and 27S rRNA; selected control probe sets for actin, EF1A, GAPDH, 25S rRNA, 18S rRNA, 5.8S rRNA from <i>O. sativa</i> ; actin, EF1A, and GAPDH from <i>M. grisea</i>
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
<b>GeneChip<sup>®</sup> Rice Genome Array</b>	
900599	Contains 2 arrays
900600	Contains 6 arrays
900601	Contains 30 arrays

### Supporting products

Part number	Description
<b>GeneChip<sup>®</sup> 3' IVT Express Kit</b>	
901228	10 reactions
901229	30 reactions

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