

GeneChip® Soybean Genome Array

The GeneChip® Soybean Genome Array was designed in close collaboration with the soybean research community as part of the GeneChip® Consortia Program. The Soybean Genome Array is an 11-probe pair, 11 µm feature size array, designed specifically to interrogate approximately 37,500 *Glycine max* (soybean) transcripts. The Soybean Genome Array also contains transcripts for studying two pathogens important for soybean research.

Applications

Soybean is a major source of food worldwide for humans and livestock and it dominates the world's supply of edible vegetable oils. The presence of two important soybean crop pathogens on the array enables researchers to gain a better understanding of how the plant interacts with two of its most common pathogens. Understanding how the soybean plant responds to common pathogens enables scientists

to identify genes involved in mechanisms, and potentially discover natural resistance against their pathogens.

Array profile

The Soybean Genome Array is a 49-format, 11 µm array design, and it contains 11 probe pairs per probe set. Sequence information for this array includes public content from GenBank® and dbEST. Sequence clusters were created from UniGene.

In addition to extensive soybean coverage, the Soybean Genome Array includes probe sets to detect approximately 15,800 transcripts for *Phytophthora sojae* (a water mold that commonly attacks soybean crops) as well as 7,500 *Heterodera glycines* (cyst nematode pathogen) transcripts.

Instrument/software requirements

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

Specifications

Number of probe sets, <i>G. max</i>	>37,500
Number of probe sets, <i>P. sojae</i>	>15,800
Number of probe sets, <i>H. glycines</i>	>7,500
Number of transcripts, <i>G. max</i>	35,611
Number of transcripts, <i>P. sojae</i>	15,421
Number of transcripts, <i>H. glycines</i>	7,431
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	Soybean genes from the commercial GeneChip® Test3 Array, including 18S rRNA, actin, GSTa, cytochrome P450, SBP, and ubiquitin. Additionally, there are newly selected control probe sets for actin and GAPDH from <i>G. max</i> , actin and GAPDH from <i>H. glycines</i> , and actin from <i>P. sojae</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
GeneChip[®] Soybean Genome Array	
900525	Contains 2 arrays
900526	Contains 6 arrays

Supporting products

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

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