

GeneChip® Chicken Genome Array

The GeneChip® Chicken Genome Array is a key research tool for the study of chicken genomics and chicken viral pathogens. The chicken is an ideal model organism for studying developmental biology, as embryonic development occurs in ovo rather than in utero, providing an easily accessible way for researchers to study stages of embryonic development. Historically, the chicken has been an important model organism for pioneering efforts in studying gene regulation, viruses, cancer, and immunology.

Applications

The chicken is a key model organism for studying embryology, host viral interactions, immunology, and gene regulation, as well as many additional agricultural research applications.

Chickens are an important food source in the United States and much of the world. The increasing demand for high-quality protein in the developing world is expected to be one of the most important trends in the future of agriculture. As a result, a better understanding of chicken genetics and viral pathogens will result in healthier flocks with fewer diseases. Additionally, a better knowledge of

the chicken genome will be an enormous benefit to chicken researchers as well as scientists who use the chicken as a model organism for developmental biology and human therapeutics.

Array profile

Sequence information for the Chicken Genome Array can be used to study gene expression of 32,773 chicken and 684 viral transcripts. Species covered include *Gallus gallus* (chicken) and 17 different avian viruses.

Sequence information for this array was selected from the following public data sources: GenBank®, UniGene, and Ensembl. Probe sets on the array were designed with 11 oligonucleotide pairs to detect each transcript.

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 complex avian genetics.

Instrument/software requirements

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

Specifications

Number of <i>G. gallus</i> probe sets	37,703 (including controls)
Number of avian viral probe sets	689
Number of <i>G. gallus</i> transcripts	32,773
Number of avian viral transcripts	684
Number of arrays in set	One
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	Eukaryotic translation elongation factor 1 alpha 1 (EEF1A1), beta-actin, GAPDH
Detection sensitivity	1:100,000*

*Verified with a panel of pre-labeled cRNA spike-ins prepared from cloned bacterial transcripts.

Ordering information

Part number	Description
GeneChip[®] Chicken Genome Array	
900590	Contains 2 arrays
900591	Contains 6 arrays
900592	Contains 30 arrays

Supporting products

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

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