

GeneChip® Rhesus Macaque Genome Array

The rhesus macaque, *Macaca mulatta*, is an important model organism for human disease research. The GeneChip® Rhesus Macaque Genome Array enables researchers to study gene expression in the rhesus animal model by simultaneously interrogating more than 47,000 *M. mulatta* transcripts. Additionally, the Rhesus Genome Array contains several relevant viral organisms for studying host-disease immune response.

The Rhesus Genome Array was created in collaboration with leading rhesus researchers through the GeneChip® Consortia Program. The array design is based on content from the Baylor School of Medicine's rhesus macaque whole-genome shotgun assembly and GenBank® sequence-tagged sites (STSs), expressed sequence tags (ESTs), and mRNAs.

Applications

The Rhesus Macaque Genome Array provides comprehensive transcriptome coverage of the rhesus macaque genome and leverages the homology of expressed sequences represented on the GeneChip® Human Genome U133 Plus 2.0 Array to annotate the Baylor School of Medicine's rhesus macaque whole-genome shotgun assembly.

Rhesus macaques are widely used as animal models for studies related to many different human disease conditions, including neurobiology, cardiovascular research, pharmacology, toxicology, and disease progression of AIDS.

The Rhesus Genome Array may also be used to study other primate animal models. The high degree of sequence similarity between the rhesus macaque and other widely used Cercopithecoidea family members, such as baboons, African green monkeys, and cynomolgus macaques, may allow the selective use of the Rhesus Macaque Genome Array for cross-species expression monitoring between primates.

The Rhesus Macaque Genome Array is a powerful tool to investigate the underlying genetic mechanisms and complex genetic traits important in human health.

Array profile

The Rhesus Macaque Genome Array is a 49-format, 11 µm array design and contains a combination of 11- or 16-probe pair probe sets that allow for cross-species expression detection. The sequence information for this array was selected from public data sources including data from the University of Nebraska, the Baylor School of Medicine's rhesus macaque whole-genome shotgun assembly, and GenBank STSs, ESTs, and mRNAs. Additionally, probe sets were designed

Specifications

Number of probe sets	52,024 rhesus probe sets, 683 viral probe sets, 13 rhesus control probe sets
Number of transcripts	~47,000 rhesus transcripts, 3 rhesus control transcripts
Number of arrays in set	One
Array format	49
Feature size	11 µm
Oligonucleotide probe length	25-mer
Probe pairs per sequence	11 or 16
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	beta-actin, elongation factor 1, GAPDH
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.

to interrogate rhesus transcripts orthologous to the 3' end of human transcripts (Human Genome U133 Plus 2.0 Array and RefSeq sequences).

The array contains 52,024 *M. mulatta* probe sets to monitor gene expression of approximately 47,000 *M. mulatta* transcripts.

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Instrument/software requirements

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

Ordering information

Part number	Description
GeneChip® Rhesus Macaque Genome Array	
900655	Contains 2 arrays
900656	Contains 6 arrays
900657	Contains 30 arrays

Supporting products

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

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