



Data Sheet

GeneChip® Mouse Genome Arrays

The Most Comprehensive Coverage of Well-Substantiated Genes in the Mouse Genome

The GeneChip® Mouse Genome Arrays provide the most comprehensive coverage of the mouse genome in multiple array formats to meet your specific research requirements. Whether you want to view the entire genome on a single array (GeneChip Mouse Genome 430 2.0 Array) or focus on a smaller well-annotated data set (GeneChip Mouse Genome 430A 2.0 Array), the GeneChip Mouse Genome Arrays provide gene expression data for a multitude of applications, including:

- Discovering genes and characterizing gene function
- Understanding biological mechanisms
- Analyzing toxicological responses
- Building robust databases

Power of the Probe Set—The key advantage of GeneChip technology is that each high-density array contains multiple probe pairs per probe set, providing several independent measurements for every transcript.

Exclusively from Affymetrix, this powerful family of arrays enables you to reliably and reproducibly examine the expression of the mouse genome.

- GeneChip Mouse Genome 430 2.0 Array
- GeneChip Mouse Genome 430A 2.0 Array
- GeneChip Mouse Expression Set 430 (Mouse 430A and Mouse 430B)

GeneChip® Mouse Genome 430 2.0 Array

The GeneChip® Mouse Genome 430 2.0 Array offers comprehensive analysis of genome-wide expression on a single array.

- Provides coverage of the transcribed mouse genome on a single array
- 45,000 probe sets analyze the expression level of over 39,000 transcripts and variants from over 34,000 well-characterized mouse genes
- Use the Power of the Probe Set and get multiple independent measurements for each transcript that deliver the greatest accuracy and reproducibility of any microarray platform

ARRAY PROFILE

All probe sets represented on the GeneChip Mouse Expression Set 430 are included on the GeneChip Mouse Genome 430 2.0 Array. The probe sets were selected from sequences derived from GenBank®, dbEST, and RefSeq. The sequence clusters were created from the UniGene database

(Build 107, June 2002) and then refined by analysis and comparison with the publicly available draft assembly of the mouse genome from the Whitehead Institute Center for Genome Research (MSCG, April 2002).

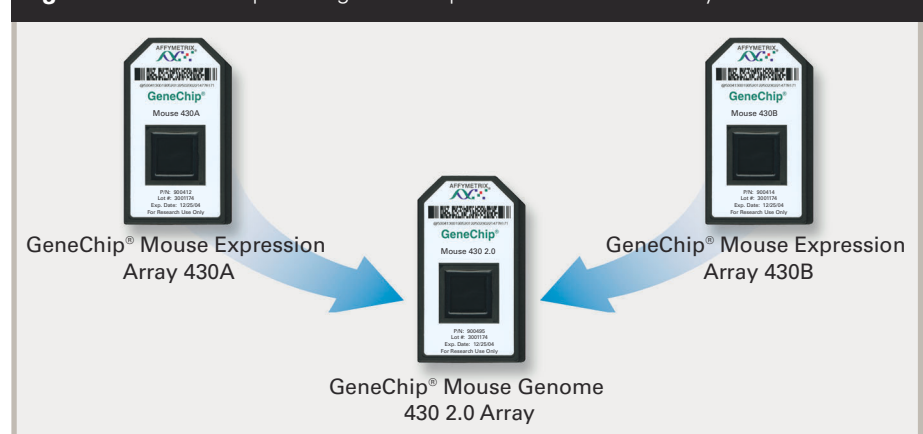
Oligonucleotide probes complementary to each corresponding sequence are synthesized *in situ* on the array. Eleven pairs of oligonucleotide probes, including a perfect match and mismatch probe, are used to measure the level of transcription of each sequence represented on the GeneChip® Mouse Genome 430 2.0 Array (Mouse 430 2.0).

INSTRUMENT/SOFTWARE REQUIREMENTS

- GeneChip® Scanner 3000, enabled for High-Resolution Scanning*
- GeneChip® Operating Software (GCOS) v1.1.1, contains the High-Resolution Scanning Update.

*GeneChip Scanner 3000 High-Resolution Update is standard on all instruments shipped starting in September 2003 with serial number series 502. Previous versions, serial number series 501, will require the 00-0110 GeneChip Scanner 3000 High-Resolution Update to be installed.

Figure 1. Relationship Among GeneChip® Mouse Genome Arrays



GeneChip® Mouse Genome 430A 2.0 Array

The GeneChip® Mouse Genome 430A 2.0 Array is a single array that contains over 22,600 probe sets representing transcripts and variants from over 14,000 well-characterized mouse genes that can be used to explore mechanisms behind biological and disease processes. New design and reduced feature size mean you can obtain the same high-quality information in a more cost-effective manner.

- All probe sets on the GeneChip Mouse Expression Array 430A are represented on the GeneChip Mouse Genome 430A 2.0 Array
- Provides coverage of well-substantiated genes in the transcribed mouse genome on a single array
- 22,600 probe sets analyze the expression level of over 14,000 well-characterized mouse genes
- Leverages the Power of the Probe Set to obtain multiple independent measurements for each transcript, delivering the greatest accuracy and reproducibility of any microarray platform

ARRAY PROFILE

Sequences used in the design of the array were selected from GenBank®, dbEST, and RefSeq. The sequence clusters were created from the UniGene database (Build 107, June 2002) and then refined by analysis and comparison with the publicly available draft assembly of the mouse genome from the Whitehead Institute Center for Genome Research (MSCG, April 2002).

Oligonucleotide probes complementary to each corresponding sequence are synthesized *in situ* on the array. Eleven pairs of oligonucleotide probes are used to measure the level of transcription of each sequence represented on the GeneChip Mouse Genome 430A 2.0 Array (Mouse 430A 2.0).

INSTRUMENT/SOFTWARE REQUIREMENTS

- GeneChip® Scanner 3000, enabled for High-Resolution Scanning*
- GeneChip® Operating Software (GCOS) v1.1.1 or v1.0 with High-Resolution Scanning Patch.

*GeneChip Scanner 3000 High-Resolution Update is standard on all instruments shipped starting in September 2003 with serial number series 502. Previous versions, serial number series 501, will require the 00-0110 GeneChip Scanner 3000 High-Resolution Update to be installed.

RELATIONSHIP TO THE GENECHIP MOUSE GENOME 430 2.0 ARRAY

All probe sets on the GeneChip Mouse Genome 430A 2.0 Array are identically represented on the GeneChip Mouse Genome 430 2.0 Array.

GeneChip® Mouse Expression Set 430

The GeneChip® Mouse Expression Set 430 provides comprehensive coverage, on two arrays, of well-substantiated genes in the mouse genome.

- Provides comprehensive coverage of the transcribed mouse genome on a two-array set
- 45,000 probe sets analyze the expression level of over 39,000 transcripts and variants from over 34,000 well-characterized mouse genes
- Use the Power of the Probe Set and get multiple independent measurements for each transcript that deliver the greatest accuracy and reproducibility of any microarray platform

ARRAY PROFILE

Sequences used in the design of the array were selected from GenBank®, dbEST, and RefSeq. The sequence clusters were created from the UniGene database (Build 107, June 2002) and then refined by analysis and comparison with the publicly available draft assembly of the mouse genome from the Whitehead Institute Center for Genome Research (MGSC, April 2002).

Oligonucleotide probes complementary to each corresponding sequence are synthesized *in situ* on the arrays. Eleven pairs of oligonucleotide probes are used to measure the level of transcription of each sequence represented on the GeneChip Mouse Expression Set 430 (Mouse Set 430).

RELATIONSHIP TO THE GENECHIP MOUSE GENOME 430 2.0 ARRAY

All probe sets on the GeneChip Mouse Expression Set 430 are identically represented on the GeneChip Mouse Genome 430 2.0 Array.

NORMALIZATION CONTROLS

All GeneChip Mouse Genome Arrays include a set of mouse maintenance genes to facilitate the normalization and scaling of array experiments. These probe sets are identical on all Mouse Genome Arrays.

This set of genes serves as a tool to normalize and scale your data prior to performing data comparisons. This set of normalization genes shows consistent levels of expression over a diverse set of tissues.

Critical Specifications for GeneChip® Mouse Genome Arrays

	Mouse Genome 430 2.0 Array	Mouse Genome 430A 2.0 Array	Mouse Expression Set 430
Number of arrays in set	1	1	2
Number of probe sets	>45,000	>22,000	>45,000
Feature size	11 µm	11 µm	18 µm
Oligonucleotide probe length	25-mer	25-mer	25-mer
Probe pairs/sequence	11	11	11
Control sequences included:			
Hybridization controls	<i>bioB, bioC, bioD, and cre</i>	<i>bioB, bioC, bioD, and cre</i>	<i>bioB, bioC, bioD, and cre</i>
Poly-A controls	<i>dap, lys, phe, and thr</i>	<i>dap, lys, phe, and thr</i>	<i>dap, lys, phe, and thr</i>
Normalization control set	100 probe sets	100 probe sets	100 probe sets
Housekeeping/Control genes	GAPDH, beta-Actin, transferrin receptor, pyruvate carboxylase	GAPDH, beta-Actin, transferrin receptor, pyruvate carboxylase	GAPDH, beta-Actin, transferrin receptor, pyruvate carboxylase
Detection sensitivity	1:100,000*	1:100,000*	1:100,000*

*As measured by detection of pre-labeled transcripts derived from murine cDNA clones in a complex mouse background.

Supporting Products for GeneChip® Mouse Genome Arrays

Part Number	Product Name	Description
900493	One-Cycle Target Labeling and Control Reagents ¹	Sufficient for 30 reactions Contains: <ul style="list-style-type: none"> • IVT Labeling Kit • One-Cycle cDNA Synthesis Kit • Sample Cleanup Module • Poly-A RNA Control Kit • Hybridization Controls
900494	Two-Cycle Target Labeling and Control Reagents ^{1,2}	Sufficient for 30 reactions Contains: <ul style="list-style-type: none"> • IVT Labeling Kit • Two-Cycle cDNA Synthesis Kit • Sample Cleanup Module • Poly-A RNA Control Kit • Hybridization Controls

¹ Individual Kit components may be ordered separately.

² For the intermediate IVT step with unlabeled nucleotides, please order the MEGAscript® T7 Kit directly from Ambion.

RELATED PUBLICATIONS

Busch, Anna K. *et al.* Expression Profiling of Palmitate- and Oleate-Regulated Genes Provides Novel Insights Into the Effects of Chronic Lipid Exposure on Pancreatic [beta]-Cell Function. *Diabetes* **51**(4): 977-987 (2002).

Han, S. Y. *et al.* Differential gene regulation by specific gain-of-function JNK1 proteins expressed in Swiss 3T3 fibroblasts. *J Biol Chem* **26**: 26 (2002).

Ueda, H. R. *et al.* A transcription factor response element for gene expression during circadian night. *Nature* **418**(6897): 534-9 (2002).

Instrument/Software for GeneChip® Mouse Genome Arrays

Arrays	Instrument/Software Compatibility
Mouse 430 2.0	GeneChip® Scanner 3000, enabled for High-Resolution Scanning,* and GeneChip Operating Software (GCOS) with the GeneChip Scanner 3000 High-Resolution Scanning Patch
Mouse 430A 2.0	GeneChip® Scanner 3000, enabled for High-Resolution Scanning,* and GeneChip Operating Software (GCOS) with the GeneChip Scanner 3000 High-Resolution Scanning Patch
Mouse 430A	GeneArray® 2500 Scanner or newer and Affymetrix® Microarray Suite version 5.0 or newer
Mouse 430B	GeneArray® 2500 Scanner or newer and Affymetrix® Microarray Suite version 5.0 or newer

*GeneChip Scanner 3000 High-Resolution Update is standard on all instruments shipped starting in September 2003 with serial number series 502. Previous versions, serial number series 501, will require the 00-0110 GeneChip Scanner 3000 High-Resolution Update to be installed.

Ordering Information

GeneChip® Mouse Genome Arrays

Mouse Genome 430 2.0 Array

- 900495** Contains 2 Mouse 430 2.0 arrays
900496 Contains 6 Mouse 430 2.0 arrays
900497 Contains 30 Mouse 430 2.0 arrays

Mouse Genome 430A 2.0 Array

- 900498** Contains 2 Mouse 430A 2.0 arrays
900499 Contains 6 Mouse 430A 2.0 arrays
900500 Contains 30 Mouse 430A 2.0 arrays

Mouse Expression Set 430

- 900443** Contains 30 Mouse 430A and
30 Mouse 430B arrays
900416 Contains 5 Mouse 430A and
5 Mouse 430B arrays
900412 Contains 5 Mouse 430A arrays
900413 Contains 30 Mouse 430A arrays
900414 Contains 5 Mouse 430B arrays
900415 Contains 30 Mouse 430B arrays

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