



## Mouse Diversity Genotyping Array

### Intended Use

The Affymetrix® Mouse Diversity Genotyping Array, designed by The Jackson Laboratory, is a single array that enables genotyping of more than 623,600 single nucleotide polymorphisms (SNPs).

The SNPs on this array originated from multiple sources in order to capture maximum diversity in laboratory mouse strains while enabling discrimination among classical inbred strains. These sources primarily stem from NIEHS/Perlegen, the Ken Paigen lab, B6 and MSM strain singletons, wild-derived strains, chromosomes X and Y and mitochondria. SNPs on the array are present on 200 to 1,100 base pairs (bp) Nsp I or Sty I digested fragments in the mouse genome, and are amplified using the Affymetrix Genome-Wide Human SNP Nsp/Sty Assay Kit 5.0/6.0.

SNPs on the Mouse Diversity Genotyping Array were chosen for representation on the array based their performance during a screen of 84 distinct samples by The Jackson Laboratory and validated in a screen of 148 samples. These samples included classical inbred laboratory strains, F1 crosses of classical inbred laboratory strains, and F1 crosses of classical strains with wild-derived strains.

The Mouse Diversity Genotyping Array also contains over 916,000 non-polymorphic copy number probes that are targeted to functional elements and regions known to harbor segmental duplications. Since there is very little information on copy number variation in mice, the copy number detection application is for discovery use only. Copy number analysis on the Mouse Diversity Genotyping Array is not supported by Affymetrix as there are no known informatics tools currently available to analyze the arrays for copy number.

This product is for research purposes only.

### Instrumentation and Software Required

- Affymetrix GeneChip® Scanner 3000 7G
- Affymetrix GeneChip® Fluidics Station 450
- Affymetrix GeneChip® Hybridization Oven 645
- Affymetrix Power Tools (APT) modified BRLMM-P algorithm provides genotype calling for the Mouse Diversity Genotyping Array.

#### Important note:

Genotyping Console cannot be used for genotype calling using the data from this array. APT must be used for this purpose. This tool is command line driven and requires some level of informatics or similar analysis expertise to use it. Support for APT is handled through the Affymetrix Developer Network. Questions, problems, feature requests and other issues can be addressed in the *APT User Forum* or the Developer Network email address, [devnet@affymetrix.com](mailto:devnet@affymetrix.com). To get email updates about APT or to view previous APT announcements see the *APT User Forum*.

### Instructions for Use

Refer to the *Affymetrix® Genome-Wide Human SNP Nsp/Sty 6.0 User Guide* (P/N 702504) and the set of Quick Reference Cards (P/N 702458) for procedures on sample preparation, hybridization, fluidics set up and array scanning.

### Accessory Files

#### Fluidics Script

Use the GenomeWideSNP6\_450 protocol with the GeneChip® Fluidics Station 450. The fluidics script can be downloaded from:

[http://www.affymetrix.com/support/technical/fluidics\\_scripts.affx#1\\_1](http://www.affymetrix.com/support/technical/fluidics_scripts.affx#1_1)

#### Library Files

Library files contain information about probe array design layout, probe use and content, scanning and analysis parameters, and other characteristics. These files are unique for each probe array type. The library files may be downloaded from <http://www.affymetrix.com/support/technical/libraryfilesmain.affx>. The files that are required for the Mouse Diversity Array are called MouseDiv.

### Critical Specifications

Critical Specifications	
Array Format	49 (extra large format)
Feature Size	5 µm
Hybridization Volume	200 µL
Fluidics Station Protocol	GenomeWideSNP6_450
Library Files	MouseDiv

### Ordering Information

Product Name	Description	P/N
Affymetrix® Mouse Diversity Genotyping Array	Contains 30 arrays. Minimum initial order size is 60 arrays. Subsequent order size is 30 arrays.	901615

Supporting Products	Description	P/N
Affymetrix Genome-Wide Human SNP Nsp/Sty Assay Kit 5.0/6.0	Sufficient for 30 reactions	901013
Affymetrix Genome-Wide Human SNP Nsp/Sty Assay Kit 5.0/6.0	Sufficient for 50 reactions	901152
Affymetrix Genome-Wide Human SNP Nsp/Sty Assay Kit 5.0/6.0	Sufficient for 100 reactions	901015
Affymetrix Power Tools modified BRLMM-P algorithm	Used for converting CEL files into genotype calls for the Mouse Diversity Genotyping Array	Available Via Download
Affymetrix GeneChip® Fluidics Station 450		00-0079
Affymetrix GeneChip® Hybridization Oven 645		00-0331
Affymetrix GeneChip® Scanner 3000 7G		00-0211

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### Precautions

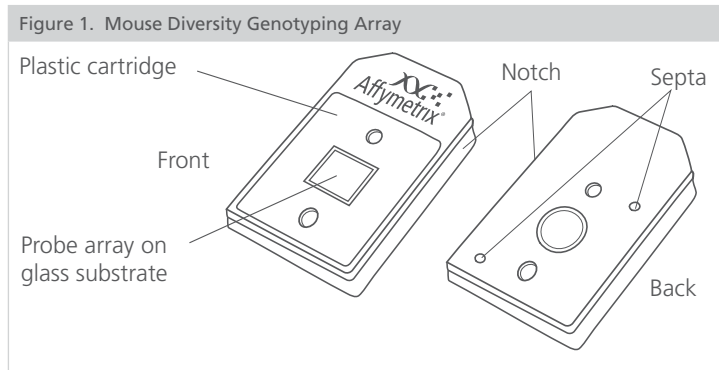
1. MOUSE DIVERSITY GENOTYPING ARRAYS ARE FOR RESEARCH USE ONLY; NOT FOR DIAGNOSTIC PROCEDURES.
  - a. Avoid microbial contamination, which may cause erroneous results.
2. **WARNING: All biological specimens and materials with which they come into contact should be handled as if capable of transmitting infection and disposed of with proper precautions in accordance with federal, state, and local regulations. This includes adherence to the OSHA Bloodborne Pathogens Standard (29 CFR 1910.1030) for blood-derived and other samples governed by this act. Never pipet by mouth. Avoid specimen contact with skin and mucous membranes.**
3. **CAUTION:** Exercise standard precautions when obtaining, handling, and disposing of potentially carcinogenic reagents.

- Exercise care to avoid cross-contamination of samples during all steps of this procedure, as this may lead to erroneous results.
- Use powder-free gloves whenever possible to minimize introduction of powder particles into sample or probe array cartridges.

### Storage, Handling and Stability

The Mouse Diversity Genotyping Array consists of a square glass substrate mounted in a plastic cartridge (Figure 1). The glass contains an array of oligonucleotides that, when mounted, is on the inner glass surface. A chamber in the plastic housing directly under the glass acts as a reservoir where hybridization and washing occur.

Although the inner glass surface of the array is protected, any contamination or scratches on the outer surface of the glass can compromise the accuracy of the scan. Avoid touching the surface of the glass with your fingers. Skin oils and other substances, such as lotions or ink, can fluoresce. If the surface of the glass is noticeably dirty, it can be carefully cleaned with a non-abrasive laboratory tissue.



Store these arrays at 2° to 8°C. Refer to the expiration date on the package label. Do not use arrays or reagents after the expiration date.

### Warranty Information

#### *The Mouse Diversity Genotyping Array and Reagents*

Any claims for damaged, missing or defective Product must be reported in writing to Affymetrix by Buyer within five (5) days from the date of receipt of Product. For any valid claim made, Affymetrix shall repair or replace the Product. The foregoing shall be Buyer's sole and exclusive remedy for damaged or missing Products, and, except for express warranty rights, for defective Products.

Probe Arrays or reagents reasonably determined by Affymetrix to be defective, independent of user error, shall be replaced by Affymetrix on a 1:1, like-kind basis at no cost to Buyer provided that such defective probe arrays or reagents were used by Buyer prior to their expiration date, and the defect was promptly reported with appropriate detail to Affymetrix' technical support.

#### *Affymetrix Power Tools*

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### Contact Information

#### **Affymetrix, Inc.**

3420 Central Expressway  
Santa Clara, CA 95051 USA  
E-mail: [support@affymetrix.com](mailto:support@affymetrix.com)  
Tel: 1-888-362-2447 (1-888-DNA-CHIP)  
Fax: 1-408-731-5441

#### **Affymetrix UK Ltd**

Voyager, Mercury Park,  
Wycombe Lane, Wooburn Green,  
High Wycombe HP10 0HH  
United Kingdom  
E-mail: [supporteurope@affymetrix.com](mailto:supporteurope@affymetrix.com)  
UK and Others Tel: +44 (0) 1628 552550  
France Tel: 0800919505  
Germany Tel: 01803001334  
Fax: +44 (0) 1628 552585

#### **Affymetrix Japan, K. K.**

Mita NN Bldg, 16 Floor  
4-1-23 Shiba, Minato-ku  
Tokyo 108-0014, Japan  
E-mail: [supportjapan@affymetrix.com](mailto:supportjapan@affymetrix.com)  
Tel: +81-(0)3-5730-8200  
Fax: +81-(0)3-5730-8201

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### Patents

Products may be covered by one or more of the following patents: U.S. Patent Nos. 5,445,934; 5,744,305; 5,945,334; 6,140,044; 6,261,776; 6,291,183; 6,346,413; 6,399,365; 6,420,169; 6,551,817; 6,610,482; 6,733,977; 6,955,915 and D430,024 and other U.S. or foreign patents. Products are manufactured and sold under license from OGT under 5,700,637 and 6,054,270.

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