

# Mouse Diversity Genotyping Array

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 **WARNING!** Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from [thermofisher.com/support](http://thermofisher.com/support).

## Product use

The Applied Biosystems™ 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 to capture maximum diversity in laboratory mouse strains at the same time 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 Genome-Wide Human SNP Nsp/Sty Assay Kit 5.0/6.0.

SNPs on the Mouse Diversity Genotyping Array were selected 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 nonpolymorphic copy number probes that are targeted to functional elements and regions that are known to harbor segmental duplications. Although there is little information on copy number variation in mice, the copy number detection application is for discovery use only. Thermo Fisher Scientific does not support copy number analysis on the Mouse Diversity Genotyping Array because there are no known informatics tools currently available to analyze the arrays for copy number.

## Instrumentation and software required

- GeneChip™ Scanner 3000 7G
- GeneChip™ Fluidics Station 450
- GeneChip™ Hybridization Oven 645
- Applied Biosystems™ Microarray Power Tools modified BRLMM-P algorithm provides genotype calling for the Mouse Diversity Genotyping Array.

**IMPORTANT!** Genotyping Console™ cannot be used for genotype calling using the data from this array. Applied Biosystems™ Microarray Power Tools 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 Applied Biosystems™ Microarray Power Tools 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, [LSG.DevNet@thermofisher.com](mailto:LSG.DevNet@thermofisher.com). To get email updates about Microarray Power Tools or to view previous Microarray Power Tools announcements see the APT User Forum.

## Instructions for use

See the *Genome-Wide Human SNP Nsp/Sty 6.0 Assay User Guide* (Pub. No. 702504) for procedures on sample preparation, hybridization, fluidics set up, and array scanning.

## Accessory files

### Fluidics scripts

The fluidics script used depends on the array type, labeling protocol, and reagents used for cartridge processing. Refer to the GeneChip Fluidics Station Scripts support page to determine which fluidics script is appropriate for your application. The fluidics scripts can be downloaded from our website.

### Library files

Library files contain information about the probe array design characteristics, probe use and content, and scanning and analysis parameters. These files are unique for each probe array. Additional information can be located under the specific array product on our website.

## Critical specifications

| Item                      | Specification           |
|---------------------------|-------------------------|
| 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                                                                                | Cat. No.               |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------|
| Mouse Diversity Genotyping Array                                      | 30 arrays                                                                                  | 901615                 |
| Genome-Wide Human SNP Nsp/Sty Assay Kit 5.0/6.0                       | 30 reactions                                                                               | 901013                 |
|                                                                       | 50 reactions                                                                               | 901152                 |
|                                                                       | 100 reactions                                                                              | 901015                 |
| Applied Biosystems™ Microarray Power Tools modified BRLMM-P algorithm | Used for converting CEL files into genotype calls for the Mouse Diversity Genotyping Array | Available via download |

## Storage, handling, and stability

This cartridge array consists of a square glass substrate mounted in a plastic cartridge. 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 probe 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 nonabrasive laboratory tissue.

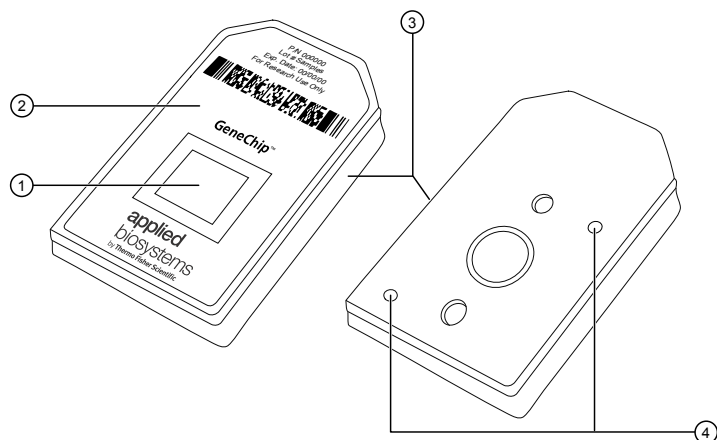


Fig. 1 Cartridge array.

- ① Probes on a glass substrate
- ② Plastic cartridge
- ③ Notch
- ④ Septa

The cartridge array should be stored at 2–8°C. Refer to the expiration date on the package label. Do not use arrays or reagents after the expiration date.

## Customer and technical support

Visit [thermofisher.com/support](http://thermofisher.com/support) for the latest service and support information.

- Worldwide contact telephone numbers
- Product support information
  - Product FAQs
  - Software, patches, and updates
  - Training for many applications and instruments
- Order and web support
- Product documentation
  - User guides, manuals, and protocols
  - Certificates of Analysis
  - Safety Data Sheets (SDSs; also known as MSDSs)

**Note:** For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

## Limited product warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at [www.thermofisher.com/us/en/home/global/terms-and-conditions.html](http://www.thermofisher.com/us/en/home/global/terms-and-conditions.html). If you have any questions, please contact Life Technologies at [www.thermofisher.com/support](http://www.thermofisher.com/support).



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**Revision history:** Pub. No. MAN0017713

| Revision | Date           | Description                                                                                                                                                                                                                                         |
|----------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A.0      | 24 August 2018 | Initial release in Thermo Fisher Scientific document control system.<br>Supersedes legacy Affymetrix publication number 702887.<br>Updated to the current document template, with associated updates to trademarks, logos, licensing, and warranty. |

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