



# Axiom™ myDesign™ Genotyping Array Plate

## Intended Use

The Axiom™ myDesign™ Array Plate consists of customized peg arrays for the genotyping of 50,000 to 2.6 million single nucleotide polymorphisms (SNPs) and simple insertion/deletions (in/dels).

Researchers can customize the Axiom myDesign Array using genomic content from two sources:

- Axiom Genomic Database consisting of over 5.4 million validated markers from the International HapMap Initiative and the 1000 Genomes project. These SNPs have been validated across multiple samples, including the original 270 HapMap Phase I samples as well as additional extended HapMap 3 populations.
- Proprietary, target sequence discovered in de novo or candidate gene re-sequencing initiatives.

The Axiom myDesign Array Plates are available in 3 plate configurations:

- 1x96 format: Supports 96 identical microarrays on the same plate. Each array plate is comprised of twelve (12) columns of 8 microarrays in each column. A total of 96 samples can be processed per array plate to genotype between 50k-675k markers per sample.
- 2x48 format: Supports 2 microarray design on the same array plate. Each microarray design consists of six (6) columns of 8 microarrays in each column. A total of 48 samples can be processed per array plate to genotype up to 1.3M markers per sample.
- 4x24 format: Supports 4 microarray design on the same array plate. Each microarray design consists of three (3) columns of 8 microarrays in each column. A total of 24 samples can be processed per array plate to genotype up to 2.6M markers per sample.

The Axiom myDesign Array Plate is compatible with the Axiom Reagent kit and can be implemented in an automated or manual workflow to perform medium and large-scale genotyping studies.

The automated workflow includes instrumentation for sample preparation, and array washing, staining and scanning.

Each SNP is present on short randomly generated fragments of genomic DNA (25 to 125 basepair), and are amplified using the Axiom Reagent Kit. Most reagents for processing Axiom myDesign Array Plates, excluding some plasticware, are included in this reagent kit.

The oligonucleotide probes on Axiom myDesign Array Plate are synthesized in situ with the same Affymetrix photolithographic process used in manufacturing cartridge arrays.

## Instructions for Use

Refer to the following documents for instructions on processing samples using the Axiom™ Genotyping Assay.

- *Axiom™ Assay User Manual*, P/N 702830
- *Axiom™ gDNA Sample Prep Protocol Quick Reference Card*, P/N 702928
- *Axiom™ Automated Target Prep Protocol Quick Reference Cards*, P/N 702831
- *Axiom™ Manual Target Prep Protocol Quick Reference Cards*, P/N 702927
- *GeneTitan™ MC Protocol for Axiom™ Array Plate Processing QRC*, P/N 702929

## Related Documents

The following documents contain information related to the instruments and software required to perform the Axiom Genotyping Assay:

- *GeneTitan™ Multi-Channel Instrument User's Manual*, P/N 08-0306
- *GeneTitan™ Multi-Channel Instrument Site Preparation Guide*, P/N 08-0305
- *Affymetrix GeneChip® Command Console® Software User Manual*, P/N 702569
- *Affymetrix Genotyping Console 4.0 User Manual*
- *Biomek® Liquid Handler User's Manual*, Beckman Coulter P/N 987834
- *Biomek® Software User's Manual*, Beckman Coulter P/N 987835

## Array Specifications

Axiom Array Specifications	
Number of features	1,416,000
Feature size	5 µm
Length of oligonucleotides	35 nt
Number of probes per SNP	1 or 2 depending upon SNP
Number of probes per simple indel	2 or 2 depending upon indel
Hybridization Volume	105 µL

## 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 type. Library files for Axiom myDesign Arrays can be downloaded from the customer's personalized Axiom myDesign NetAFFX workspace. Affymetrix Bioinformatics Services will email a link to the file once the array design is completed.

## Reagents, Instrumentation and Software Required

1. Axiom™ Reagent Kit
2. Biomek FX<sup>P</sup> Target Prep Express by Beckman Coulter
3. GeneTitan™ Multi-Channel Instrument
4. Affymetrix GeneChip® Command Console® Software
5. Affymetrix Genotyping Console

For a complete list of reagents and consumables required, please refer to the *Axiom™ Genotyping Solution Site Preparation Guide*, P/N 702858.

## Ordering Information

Product Name	Description	Part Number
Axiom™ myDesign™ Genotyping Array Plates, 1x96 format	One 96-Array Plate	000780
Axiom™ myDesign™ Genotyping Array Plates, 2x48 format	One 2x48 Array Plate	000786
Axiom™ myDesign™ Genotyping Array Plates, 4x24 format	One 4x24 Array Plate	000787
Axiom GeneTitan Consumables Kit <sup>1</sup>	See below	901606
Axiom Reagent Kit	96 reaction	901281

1. One Hyb Tray, one Scan Tray, and five Stain Trays with covers are included for use with each kit. These consumables are required for processing Axiom array plates on the GeneTitan Multi-Channel instrument.

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## Storage, Handling and Stability

Axiom myDesign Array Plates should be stored at 2 to 8 °C and must not be frozen. Refer to the expiration date on the package label. Do not use arrays or reagents after the expiration date.

### *When Handling the Axiom Array Plate*

Remove the Array Plate from the pouch with gloved hands. The plate is packaged with a blue plastic base. Do not remove the Array Plate from this protective base, or touch the Array Plate directly. Keep the Array Plate in the protective base at all times, including when placed on the GeneTitan Multi-Channel instrument.

### *When Handling the 96 Plate Scan Tray*

Remove the 96 Plate Scan Tray (Scan Tray) from the pouch with gloved hands. The Scan Tray is packaged with a black protective base and cover. Keep the Scan Tray in the protective base with the cover at all times prior to loading into the GeneTitan Multi-Channel Instrument. Do not touch the bottom of the Scan Tray directly.

The Scan Tray has protruding guide posts that may be sharp and can puncture the pouch if not handled carefully. Take the necessary precautions to avoid injury.

## Precautions

1. AXIOM myDesign ARRAY PLATES ARE FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES.
2. Avoid microbial contamination, which may cause erroneous results.
3. 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.
4. CAUTION: Exercise standard precautions when obtaining, handling, and disposing of potentially carcinogenic reagents.
5. Exercise care to avoid cross-contamination of samples during all steps of this procedure, as this may lead to erroneous results.
6. Use powder-free gloves whenever possible to minimize introduction of powder particles into sample or probe array plates.
7. CAUTION: Use care when handling the Scan Tray as it has protruding guiding posts that may be sharp and can stick out of the pouch if not handled carefully.

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