



## Axiom™ Genome-Wide Pan-African Array Set

### Intended Use

The Axiom® Genome-Wide Pan-African Array Set (comprised of three unique array plates) enables the genotyping of ~2.2 million markers per sample. Each set consists of three distinct array plates designed for the genotyping of single nucleotide polymorphisms (SNPs) and in/dels. These array plates, when used with the Axiom® 2.0 Reagent Kit (see **Ordering Information** for further details) enables researchers to perform large-scale genotyping studies with minimal hands-on processing per plate.

Each array plate consists of 96 microarrays and is offered as a part of a complete automated solution from Affymetrix that includes instrumentation for sample preparation, and array washing, staining and scanning.

SNPs on this array were chosen based on their minor allele frequency (MAF) in Yoruba individuals and for the ability to effectively tag both HapMap and 1000 Genomes Content. Additionally, markers on the array have been demonstrated to meet genotyping reproducibility and call rate performance specifications, with accuracy determined using genotypes from the International HapMap Project. These SNPs have been validated across multiple HapMap individuals including individuals from the YRI and ASW HapMap populations.

These markers are amplified using the Axiom 2.0 Reagent Kit and are present on short randomly generated fragments of genomic DNA (25 to 125 basepair) prior to array hybridization. The reagents for processing Axiom arrays are also included in this reagent kit.

Identical to the cartridge array manufacturing process, the oligonucleotide probes on Axiom Genome-Wide Pan-African Array Plates are synthesized *in situ* using Affymetrix' photolithographic process.

### Instructions for Use

Refer to the following documents for instructions on processing samples using the Axiom® 2.0 Genotyping Assay.

- *Axiom® 2.0 Assay Automated Workflow User Guide*, P/N 702963
- *Axiom® 2.0 Assay Manual Workflow User Guide*, P/N 702990
- *Axiom® 2.0 Assay Automated Workflow Site Prep Guide*, P/N 702984
- *Axiom® 2.0 Assay Manual Workflow Site Prep Guide*, P/N 702991
- *Axiom® 2.0 Assay Automated Target Prep Protocol QRC*, P/N 702962
- *Axiom® 2.0 Assay Manual Target Prep Protocol QRC*, P/N 702989
- *GeneTitan® MC Protocol for Axiom 2.0 Array Plate Processing QRC*, P/N 702988
- *Axiom® Genotyping Solution Analysis Guide*, P/N 702961
- *Axiom® 2.0 gDNA Sample Prep Protocol QRC*, P/N 702987

### Related Documents

The following documents contain information related to the instruments and software required to perform the Axiom 2.0 Genotyping Assay:

- *GeneTitan® Multichannel Instrument User's Manual*, P/N 08-0306
- *GeneTitan® Multichannel Instrument Site Preparation Guide*, P/N 08-0305
- *Affymetrix® GeneChip® Command Console® Software User Manual*, P/N 702569
- *Affymetrix® Genotyping Console™ 4.1 User Manual*, P/N 702982
- *Biomek® Liquid Handler User's Manual*, Beckman Coulter P/N 987834
- *Biomek® Software User's Manual*, Beckman Coulter P/N 987835

### 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. Additional information can be located under the specific array product on the Affymetrix web site at [www.affymetrix.com/support/technical/libraryfilesmain.affx](http://www.affymetrix.com/support/technical/libraryfilesmain.affx).

### Reagents, Instrumentation and Software Required

1. Axiom® 2.0 Reagent Kit
2. Axiom® Genome-Wide Pan African Array Set
3. Biomek FX<sup>®</sup> Target Prep Express by Beckman Coulter<sup>®</sup>
4. GeneTitan® Multichannel Instrument
5. Affymetrix GeneChip® Command Console® Software
6. Affymetrix Genotyping Console™

For a complete list of reagents and consumables required, please refer to the *Axiom® 2.0 Assay Automated Workflow Site Prep Guide*, P/N 702984 or the *Axiom® 2.0 Assay Manual Workflow Site Prep Guide*, P/N 702991.

### Ordering Information

Product Name	Description	P/N
Axiom Genome-Wide Pan-African Genotyping Bundle	Bundle consists of: <ul style="list-style-type: none"><li>■ One Axiom Genome-Wide Pan African Array Set (made up of three unique array plates)</li><li>■ Three GeneTitan® Instrument Consumable Kits<sup>1</sup></li><li>■ Three Axiom® 2.0 Reagent Kits (3 x 96 reactions)</li></ul>	901788

1. Each GeneTitan Consumable Kit includes one Hyb Tray, one Scan Tray, and five Stain Trays with covers. These consumables are required for processing an Axiom array plate on the GeneTitan® Multi-Channel Instrument.

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### Storage, Handling and Stability

Axiom Genome-Wide Pan African Array Set 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 Multichannel 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 Multichannel 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™ GENOME-WIDE PAN-AFRICAN 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 with 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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