Data Sheet

Axiom™ myDesign™ Targeted Genotyping Array Plates

Targeted genotyping, tailored for your study

Axiom™ myDesign™ Targeted Genotyping (TG) Array Plates are fully customizable panels that can be optimized with the most relevant genomic markers for your fine mapping, candidate gene, and SNP validation studies, as well as for developing your own focused panels for routine screening.

Axiom myDesign TG Array Plates enable you to:

- Easily select relevant SNPs from our database of 11 million validated common and rare variants
- Create panels of 1,500 to 500,000 markers per sample
- Generate rapid, robust results
- Conduct genome-wide association studies (GWAS) and candidate gene studies on the same platform
- Receive your array more quickly than any custom array on the market

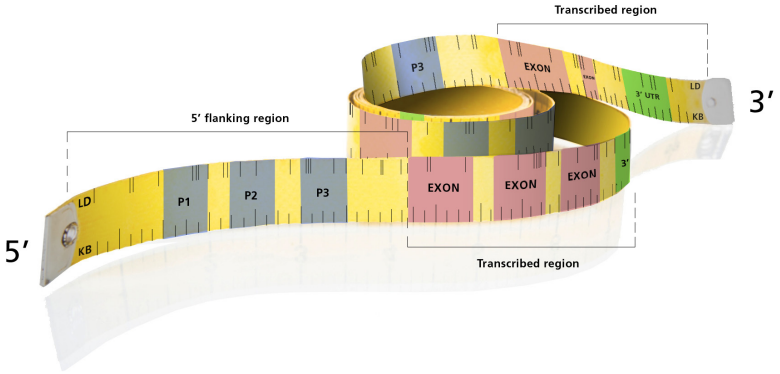
Introduction

Whether exploring interesting regions after your genome-wide association study, validating novel SNPs from your sequencing experiment, or ramping up your candidate gene project, Axiom myDesign TG Array Plates are the newest innovation from Affymetrix to accelerate your focused genotyping studies.

Based on the universal workflow of the Axiom™ Genotyping Solution, Axiom myDesign TG Array Plates offer the confidence of validated genomic content and unprecedented flexibility to design an optimal panel for your study.

Axiom myDesign TG Array Plates provide:

- **The most comprehensive content** – Tailor your custom arrays using the Axiom™ Genomic Database, the world's largest database of validated genomic content from the human genome spanning four major populations (CEU, JPT, CHB, and YRI). The database contains more than 11 million rare and common variants from sources such as the International HapMap Project, the 1000 Genomes Project, the NHGRI Database of Published Associations, and other initiatives.
- **Uniquely relevant markers** – Choose the most relevant markers based on population, linkage disequilibrium (LD, measured by r^2), and minor allele frequency (MAF) to maximize statistical power for the study. Genomic markers are further classified by SNP type, biological process, or previous disease association GWAS.



- **Superior results** – Have confidence in your data with millions of validated markers. Each variant has been extensively validated in a large number of biological samples to ensure that the SNP is not due to sequencing error, the minor allele can be reliably detected, and has undergone rigorous functional testing to ensure highly reliable and reproducible performance. Data quality was assessed against the HapMap 270 diversity panel to confirm call rate, sample pass rate, concordance, and reproducibility.
- **Unmatched scalability** – Create fully customized panels containing 1,500 to 500,000 markers using validated content from Affymetrix, or submit novel target sequence from other sources. This industry-leading scalability provides more options to maximize genetic coverage across the genome or within specific gene regions to support SNP validation, fine mapping, or candidate gene studies.
- **Accelerated discovery** – Process more than 750 samples per week using the fully automated workflow based on the Axiom™ 2.0 Reagent Kit and the GeneTitan® Multi-Channel Instrument.

Easy to select, easy to design

Designing an Axiom myDesign TG Array Plate is easy. Register online at www.affymetrix.com/mydesign to access the Axiom Design Center, your gateway to SNP selection and array design using the Axiom Genomic Database.

All design requests are submitted online, and the Affymetrix Bioinformatics Services team will help you create your custom Axiom panel. You can submit gene, region, sequence, or probe ID. The design and ordering process is outlined in detail in the *Axiom™ myDesign™ Array Plate Design Guide*, available at www.affymetrix.com.

Table 1: Markers in the Axiom™ Genomic Database (millions).

Total polymorphic markers by population		Total markers by population	Total no. of markers by MAF	No. of validated markers	No. of taggable markers with r^2>0.8
CEU	Rare (0<MAF<5%)	6.11	1.67	1.46	0.21
	Common (MAF≥5%)		4.44	3.26	1.18
JPT + CHB	Rare (0<MAF<5%)	5.63	1.61	1.44	0.17
	Common (MAF≥5%)		4.02	2.98	1.04
YRI	Rare (0<MAF<5%)	8.71	2.73	2.43	0.3
	Common (MAF≥5%)		5.99	4.7	1.29
Total			**11.0**	**8.8**	**2.2**

Table 2: Validated markers by biological category.

Marker category	No. of validated markers
By marker type	
Coding SNPs (cSNPs)	88,922
Synonymous cSNPs	43,860
Non-synonymous cSNPs	52,251
Splicing and untranslated regions (UTR)	111,001
Genic	3,991,806
miRNA/mtDNA	405
Chromosome X/chromosome Y	249,608/2,647
Insertions/deletions (in/dels)	34,708
By biological process and disease	
Major histocompatibility complex (MHC)	22,148
Drug metabolizing genes/ADMET	50,455
Inflammation and immunity pathway	57,922
Cardiovascular	68,479
NHGRI disease-associated	3,299
Cancer	107,422

Table 3: Markers by commercially available panel.

Panel	No. of validated markers
Axiom™ Genome-Wide ASI Array Plate	600,307
Axiom™ Genome-Wide CEU Array Plate	587,352
Affymetrix® Genome-Wide Human SNP Array 5.0	384,766
Affymetrix® Genome-Wide Human SNP Array 6.0	769,824
Illumina Infinium Human660W-Quad BeadChip	470,852
Illumina Infinium Human1M-Duo BeadChip	811,252
Illumina HumanOmniExpress BeadChip	586,993
Illumina HumanOmni1 BeadChip	779,796

Ordering information

Part number	Description	Details
Axiom™ myDesign™ Targeted Genotyping Array Plates		
000799	Axiom™ myDesign™ TG Array Plate, 1x96 format	Includes one 96-array plate of one array type containing 1,500 to 500,000 markers per sample
Axiom™ Reagent Kits		
901758	Axiom™ 2.0 Reagent Kit	Includes all reagents (except isopropanol) to process 96 gDNA samples
901606	GeneTitan® Consumables Kit	Includes GeneTitan® plastic consumables to process one 96-array plate
Axiom™ Services		
0000740	Axiom™ Genotyping Services	Sample processing and data generation services for gDNA samples (minimum 1,000 samples) using the Axiom Genotyping Solution

*Reagent kits do not include Beckman plastic consumables required to run the assay on the Beckman Biomek® FX^P Target Prep Express System.

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