Agrigenomics Genotyping Solutions

Easy, flexible, automated solutions to accelerate your genomic selection and breeding programs
Agrigenomics genotyping solutions
A single platform for every phase of your study

Agrigenomics genotyping solutions from Affymetrix provide breeders and researchers with a powerful and flexible range of genotyping tools to cost-effectively identify, validate, and screen complex genetic traits in plants and animals.

Affymetrix’ genetic analysis tools give you the power to:

Discover
- Ascertain de novo genetic diversity through genetic analysis technologies
- Analyze population structure

Associate
- Identify genetic markers correlated with desirable traits
- Confirm marker-trait associations
- Understand genetic adaptation to the environment

Manage
- Use genetic information to control desired outcomes
- Screen plants and animals for desired traits
- Expedite genetic progress with high accuracy

Benefits of array-based genotyping:

Affordability
- Cost-effective genotyping tools

Simplified genotyping tools
- Consolidate multiple genotyping applications under a single technology platform
- Easy-to-use and simple workflow
- Obtain accurate genotyping answers in a few hours

Flexibility
- High-throughput genotyping tools for high-density to targeted genotyping applications
- An assay for unconstrained genotyping of all relevant markers of interest
- Low sample commitment

Array-based genotyping products from Affymetrix offer complete solutions for applications ranging from genome-wide analysis to routine screening with the highest accuracy and reproducibility, a straightforward workflow, and the lowest cost.

To learn more about Affymetrix’ agrigenomics products, visit www.affymetrix.com/agrigenomics.
Axiom® Genotyping Solution
Accelerate phenotype-trait association and selection efforts with a robust technology

Axiom® Genotyping Solution delivers arrays with markers that are important for your species of interest or genotype-tested content from the Axiom® Genomic Database.

Powerful
- Genotype any species, genome size, and ploidy level
- The Axiom® Assay can interrogate insertion/deletions (indels) and GUARANTEES inclusion of all candidate SNPs with neighboring SNPs as close as 20 bp away, enabling more effective QTL analysis

Robust
- Go from sample to genotypes with as little as 100 ng of extracted DNA from variable sample types
- Genotype call rates ≥99%

Scalable
- Fully automated workflow with the option to process up to 8 sample plates per week without adding manpower or additional instrumentation
- Interrogate up to 2.6M variants per sample

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**Axiom® myDesign™ Genotyping Arrays**

Flexible, cost-effective customized genotyping arrays

Affymetrix offers affordable custom genotyping arrays for individual researchers or consortia. Partner with our bioinformatics team to design arrays with relevant content for multiple applications from discovery to screening.

**Consistent supply and fast turnaround times**

- Get 100% identical SNP content with every order and for as long as your research necessitates
- No SNP dropouts—all SNPs designed on the array are accessible every time

**Flexible formats**

- Include markers for multiple species on the same array
- Multiplex between 1,500–675,000 SNPs per array at a cost-effective price and get more information for your investment

**Scalable**

- Low sample commitment of 480 samples to fit your budget
- Reorder custom arrays for as few as 192 samples to complete your study

**Designing arrays for your markers**

- Select Gene, Region, Sequence, SNP type
- Provide information on species and SNP list

**Axiom® BioFx Services**

- ~ 3-5 days, initial report

- Start your study in as few as 6 weeks after finalizing array content

- Use in-silico design scores to maximize the number of markers that will genotype for your species

- Develop an array for your consortium with Affymetrix’ Community Array Program

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Animal genotyping solutions
Select arrays or sub-select content from our catalog of high-density agrigenomics products

Axiom® Genome-Wide Chicken Genotyping Array

- Highest density chicken array for unrestricted use
- Designed as part of a public-private partnership that includes BBSRC-funded LINK project between Roslin Institute, Aviagen Ltd, Hy-Line International and Affymetrix and in cooperation with the German Synbreed project funded by BMBF
- Enables variation detection both within and between poultry breeds in broilers, white egg layers, brown egg layers, and outbred non-commercial breeds

“Results from blood on FTA cards were very good, call rates above 99%”

Professor Dave Burt
The Roslin Institute
University of Edinburgh, UK

Axiom® Genome-Wide BOS 1 Bovine Genotyping Array

- Highest genomic coverage for Bos taurus, Bos indicus with more Zebu breeds and more usable SNPs for your application
- Developed in collaboration with 10 leading bovine researchers and Affymetrix' bovine knowledge database of 3 million genotype-tested SNPs
- An intelligent array that uses a SNP selection strategy based on haplotype blocks

To learn more about Affymetrix' agrigenomics products, visit www.affymetrix.com/agrigenomics.
Plant genotyping solutions
Accelerate and manage breeding programs with high accuracy

Affymetrix collaborated with scientists from academic research institutes and commercial seed companies to design arrays for a variety of plants including soybean, watermelon, wheat, and ornamental plants. These arrays enable researchers to identify genes underlying desired phenotypic traits.

Automated genotype-calling for polyploid and diploid genomes

Affymetrix has developed advanced genotype-calling algorithms and software tools that enable the analysis of complex plant genomes. The adaptable clustering algorithm delivers accurate genotype calls in polyploid species. The algorithm offers tunable parameters for accurate genotyping of inbred populations and samples from species whose genomes diverge from reference sequences.

Strawberry
Affymetrix has partnered with the RosBREED Consortia to offer arrays for genotyping strawberries.

Sunflower
The custom sunflower genotyping array was designed to interrogate 200,000 SNPs.

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Software
Streamline your workflow with expert bioinformatics support and user-friendly software

Integrate Microsoft® Windows GUI-based Genotyping Console™ (GTC) Software or automation-friendly command line-based Affymetrix® Power Tools (APT) for completing the primary genotyping analysis. The flexible software workflow with simplified data management allows you to easily share your results and seamlessly integrate with third-party software packages.

Easy to use

- Visualization tools including scatter plots, line graphs, and heat map graphs
- Fully automated high-throughput allele calling of standard and non-standard diploid and polyploid genomes

Integrates with your existing systems

- Automation-friendly option: command line-based Affymetrix® Power Tools (APT)
- Seamlessly integrates with third-party software packages
- Compatible with 32- and 64-bit Windows® 7 and Windows Server 2008 operating systems

Straightforward data analysis

- Includes flexible SNP filtering and export tools into PLINK format
- Supports custom annotation files generated by Affymetrix® Annotation Converter
- Facilitates data sharing with collaborators

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