

Human genotyping

Axiom SwiftArray Assay

Delivering key insights in 2 days—designed for exceptional robustness and time-to-results

The Applied Biosystems™ Axiom™ SwiftArray™ Assay is a next-generation genotyping solution designed to deliver comprehensive genome-wide insights, with results in just 2 days from sample to data. Built for flexibility, it supports both high-throughput and smaller-scale studies, enabling efficient use across multiple applications. With as little as 100 ng of DNA input, the Axiom SwiftArray Assay provides high-resolution detection of single-nucleotide polymorphisms (SNPs), copy number variants (CNVs), and HLA alleles in a single, cost-effective assay with integrated, ready-to-use analysis tools.

- **Rapid results:** from DNA sample to data in 2 days
- **Low DNA input:** requires as little as 100 ng of gDNA
- **Flexible throughput:** supports both large-scale and smaller cohort studies without compromising data quality
- **Compatibility:** works with both catalog and custom array formats
- **Enhanced sustainability:** achieves approximately a 40% reduction in plastics and other consumables compared to previous generations
- **High-precision concordance and reproducibility:** helps ensure accuracy across replicates
- **Automated analysis with Applied Biosystems™ Axiom™ Analysis Suite:** automates data analysis with allele-calling algorithms, integrated CNV detection, and intuitive visualization tools

Assay and workflow

The Axiom SwiftArray Assays are powered by Applied Biosystems™ Axiom™ SwiftArray™ reagents that help deliver results in just 2 days from DNA sample to data. The workflow includes:

1. Whole-genome amplification
2. Array hybridization
3. Automated array processing on the Applied Biosystems™ SwiftArrayStudio™ Microarray Analyzer

For challenging pharmacogenes in highly homologous regions (e.g., *CYP2D6*), the Axiom SwiftArray Plus Assay incorporates a gene-specific amplification step. A workflow schematic is shown in Figure 1.

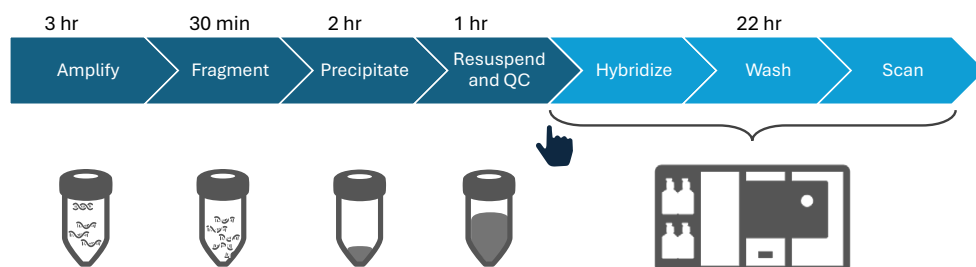


Figure 1. Axiom SwiftArray reagents for target preparation power Axiom SwiftArray Assays and help deliver results in just 2 days from DNA sample to data.

Performance

The Axiom SwiftArray Assay has been rigorously tested using International HapMap Project samples, with performance metrics including:

- High sample call rates
- Excellent concordance and reproducibility across replicates
- Robust accuracy in regions of high sequence homology (e.g., *CYP2D6* markers verified using the Axiom SwiftArray Plus Assay)

The high level of performance helps ensure trusted, reproducible results for researchers aiming to generate inclusive, representative datasets and make a difference in the field of genomics.

Analysis solution

Axiom Analysis Suite automates data analysis with allele-calling algorithms, integrated CNV detection, and intuitive visualization tools, enabling researchers to extract the most informative content for each study with minimal manual intervention.

Sustainability and simplified workflow

The Axiom SwiftArray Assay was engineered to deliver results faster while reducing material use and environmental impact compared to legacy workflows. Every stage of the assay—from reagent preparation to hybridization—has been optimized for sustainability, operational efficiency, and ease of use.

Efficiency and time savings

- Turnaround time: complete workflow in 2 days (~30 hours) from DNA to data
- Hands-on time: reduced by 50% compared to legacy workflows, requiring only ~2 hours of manual handling
- Stopping points: two convenient workflow pauses for increased flexibility in scheduling

Reduced environmental impact

- Plastics: approximately 40% fewer tubes and bottles, lowering laboratory plastic waste
- Buffer volume: reduced by ~50%, minimizing chemical use and storage requirements
- Stain layers: simplified chemistry with 66% fewer stain layers, decreasing reagent consumption and waste

Simplified, user-friendly design

- Universal trays: “pour and go” universal trays enable rapid setup without dedicated consumables
- Room temperature stability: reagents maintain 10 hours of stability at room temperature (excluding enzymes), supporting flexibility and reduced cold storage needs
- Freeze/thaw resilience: verified for up to 2 freeze/thaw cycles, helping to ensure reagent integrity and flexible usage
- Verified pipetting: compatible with Thermo Scientific™ ClipTip™ pipettes, enhancing reproducibility and ergonomic handling

Sustainability and lab efficiency

Thermo Fisher Scientific is committed to environmental responsibility through process optimization and material reduction.

- Reduced reagent waste through consolidated steps and precise dispensing
- Automated array processing with the SwiftArrayStudio System
- Compact workflow design minimizes consumables and packaging compared to legacy systems

By streamlining operations and reducing environmental impact, the Axiom SwiftArray Assay helps laboratories achieve sustainability goals without sacrificing performance.

Conclusion

The Axiom SwiftArray Assay is designed for exceptional robustness, fast time-to-results, and a reduced carbon footprint, enabling key insights to be obtained in just 2 days. Its flexible throughput and compatibility with various array formats make it an ideal choice for researchers looking to advance their genomic studies efficiently and effectively.

Ordering information

Product	Kit format	Cat. No.
Axiom SwiftArray Reagent Kit	1x	952634
Axiom SwiftArray Plus Reagent Kit	1x	952635
Axiom SwiftArray Reagent Kit	2x	952636
Axiom SwiftArray Plus Reagent Kit	2x	952637
Axiom SwiftArrayStudio Buffer Kit	2x	952638
Axiom SwiftArray Reagent Kit, with Wash	1x	952639
Axiom SwiftArray Plus Reagent Kit, with Wash	1x	952640
Axiom SwiftArray Reagent Kit, with Wash	2x	952641
Axiom SwiftArray Plus Reagent Kit, with Wash	2x	952642

 Learn more at thermofisher.com/swiftarraystudio

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