

SYSTEMS



# MassARRAY<sup>®</sup> System

Less Waiting. More Answers.  
Targeted Results.



With the exception of the MassARRAY Dx System, all products are  
For Research Use Only. Not for use in diagnostic procedures.



# The Path to Molecular Testing Begins Here

## Behind Every Genetic Analysis There is a Trusted Platform

The MassARRAY System is an open platform that can grow with your lab and simplify the genetic testing process. Placed at the center of your molecular workflow, you can optimize throughput, turn-around times, and data analysis. As your testing needs evolve, you'll be empowered to adapt more quickly, which ultimately leads to faster decisions and greater productivity.





## Minimal Bioinformatics Analysis

Simplify data analysis by analyzing only specific mutations, unlike other extensive approaches such as whole-genome sequencing. No bioinformatics team needed!



## Broad Multiplexing Range

Target up to 50 specific DNA variants in a single PCR reaction and run up to 96 or 384 samples on a single SpectroCHIP® Array, allowing you to test hundreds of mutations in a single workflow.



## Maximum Productivity

Sample to data in a single day. Run up to eight 96-well or six 384-well plates in a full workday with the flexibility to process two more plates overnight.



## Simple Workflow

Combining automation, minimal hands-on time and onboard data analysis, the MassARRAY System delivers a simple and fast workflow covering a suite of applications.



## Flexible Biomarker Detection

Detect SNPs, insertions, deletions, translocations, copy number variation, and methylation markers with one system.



## Cost-Effective Testing

Multiplexed analysis per sample plus the elimination of fluorescent markers allows for the lowest price per sample.

## TARGETED RESULTS

The MassARRAY System allows labs to focus on a select set of gene regions that have known or emerging associations with disease. This allows targeting of 10s - 100s of genetic markers per sample in a single run.

- **Simplicity** – Delivers instant and easy-to-interpret genetic profiles
- **Minimal bioinformatics analysis** – Generate smaller and more manageable genetic data sets
- **Highly targeted** – Excludes variants of unknown significance
- **High sensitivity** – Detect variants as low as 0.1% allele frequency using minimal DNA input

## SYSTEM WORKFLOW

The MassARRAY System workflow couples mass spectrometry with end-point PCR, enabling highly multiplexed reactions under universal cycling conditions to provide accurate, sensitive and rapid genetic analysis. After nucleic acid extraction, approximately 10-40ng of sample advances through a simple workflow with 3 easy steps:



### PCR/SAP/Extension

Multiplex end-point PCR followed by a single base extension reaction



### Target Sequence Detection

Automated analyte transfer and data acquisition



### Data Analysis

Data display and report generation

#### 96 FORMAT



#### 384 FORMAT



\* Workflow time may vary depending on chemistry and acquisition settings.

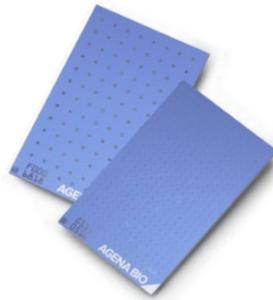


## TECHNOLOGY OVERVIEW

The MassARRAY System uses matrix-assisted laser desorption/ionization - time of flight (MALDI-TOF) mass spectrometry for the precise detection of DNA molecules. Genetic variants are distinguished by analysis of their individual mass, eliminating the need for fluorescence or labeling.

### SpectroCHIP® Arrays

A small amount of DNA analyte is transferred to a single pad where it co-crystalizes with the matrix.



### DNA Ionization

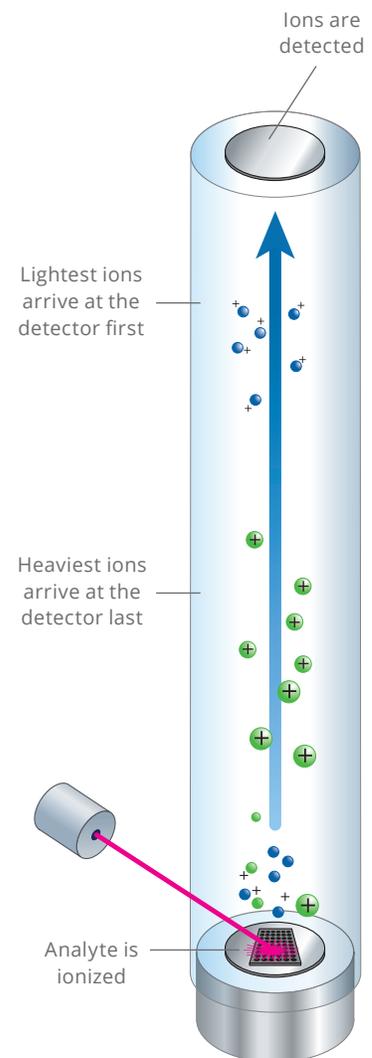
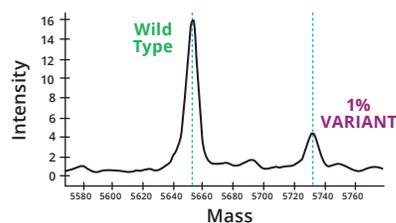
SpectroCHIP Arrays with crystalized analytes are then transferred to the MassARRAY MALDI-TOF analyzer where they are irradiated by a laser, inducing desorption and ionization of molecules within a vacuum chamber.

### DNA Separation

The positively charged DNA ions are accelerated and migrate through the vacuum tube towards a highly sensitive detector at different speeds dependent on the mass of the ions, leading to different arrival times (time of flight).

### DNA Analysis

Using the arrival time of the individual ionized DNA analytes, the MassARRAY System determines the mass and displays a mass spectrum identifying the different genetic targets.



## SPECTROCHIP ARRAYS

Genotype up to 50 genetic variants on each pad: up to 19,200\* genetic variants across the entire array

The SpectroCHIP Array is an exclusive MassARRAY consumable that features 96 or 384 inert matrix pads evenly spaced across an array. Unique DNA analyte mixtures can be deposited onto any pad, enabling side-by-side testing of different assays and sample types in a single run.

**The SpectroCHIP Array allows for flexible biomarker analysis such as SNPs, insertions, deletions, translocations, copy number variation, and methylation markers.**

\*Based on the SpectroCHIP Array 384. The 96 format can genotype up to 4,800 genetic variants.



## FEATURES & CAPABILITIES

Accurate genetic data is just half of the equation; the other half is maintaining an efficient lab workflow that ensures the integrity of your results. The MassARRAY System empowers high-throughput testing while keeping the key quality concerns of laboratories in mind.



- **Automated Sample Transfer** – An internal liquid handler within the sealed system seamlessly performs sample conditioning and transfer to SpectroCHIP Arrays, reducing carry-over contamination.
- **Continuous Sample Loading** – Enables a flexible workflow, minimizes downtime between batches, and optimizes throughput without risking sample integrity.
- **On-Board Stability** – An integrated plate cooler maintains a steady-state temperature, preserving the integrity of your PCR samples during daily or overnight runs.



## A TRUSTED TECHNOLOGY

The MassARRAY technology has been used in genetic research settings for almost 20 years and has been featured in over 4,000 peer-reviewed publications globally. It brings a proven level of technological performance for molecular testing.



*"We brought in the MassARRAY System to have the confidence [and] peace of mind."*

– Sharon Mexal, PhD

*VP of Clinical Operations, Ambry Genetics  
Agena Bioscience's Pharma Services Partner*

## SOFTWARE REPORTING PARTNERS

MassARRAY Insights partners are a network of data interpretation software providers that work seamlessly with the MassARRAY System's molecular data output to deliver reporting advantages to genomic labs. Our partners include:



[molecularhealth.com](http://molecularhealth.com)

Oncology



[molecularmatch.com](http://molecularmatch.com)

Oncology



[n-of-one.com](http://n-of-one.com)

Oncology



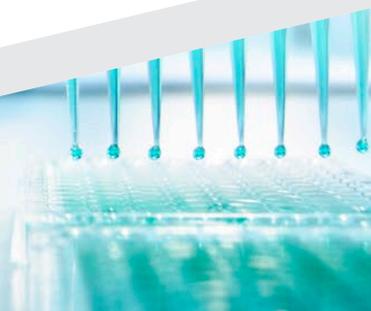
[pathagility.com](http://pathagility.com)

Pharmacogenetics



[translationalsoftware.com](http://translationalsoftware.com)

Pharmacogenetics,  
Carrier Screening, Wellness



## ORDERING INFORMATION

| Catalog No. | Product  |
|-------------|--|
| 10445       | MassARRAY System with Chip Prep Module, 96 Genotyping  |
| 10446       | MassARRAY System with Chip Prep Module, 96 EpiTyper    |
| 10447       | MassARRAY System with Chip Prep Module, 384 Genotyping |
| 10448       | MassARRAY System with Chip Prep Module, 384 EpiTyper   |

## SPECIFICATIONS

### MassARRAY System with CPM 96

|                  |  |
|------------------|--|
| Components:      | MassARRAY Analyzer 4<br>Chip Prep Module 96<br>Integrated computer |
| Dimensions:      | 37W x 43H x 27D in<br>(104W x 110H x 68D cm)                       |
| Capacity:        | 2 x Microtiter plates (96-well)<br>2 x SpectroCHIP CPM 96 Arrays   |
| Processing time: | Approx. 90 minutes per 96-well plate                               |

### MassARRAY System with CPM 384

|                  |   |
|------------------|---|
| Components:      | MassARRAY Analyzer 4<br>Chip Prep Module 384<br>Integrated Computer |
| Dimensions:      | 37W x 43H x 27D in<br>(104W x 110H x 68D cm)                        |
| Capacity:        | 2 x Microtiter plates (384-well)<br>2 x SpectroCHIP CPM 384 Arrays  |
| Processing time: | Approx. 160 minutes per 384-well plate                              |

### Also Available – MassARRAY Dx System (US-IVD)

For laboratories or device manufacturers seeking to develop IVD tests for submitting to the FDA for 510(K) Clearance or PMA Approval and require 21 CFR Part 11 compliant software. Contact Agena Bioscience for more information.

### Get to Know the MassARRAY System



Watch the MassARRAY video: [agenabio.com/videos](https://agenabio.com/videos)

With exception of the MassARRAY Dx, all other products are For Research Use Only. Not for use in diagnostic procedures.

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