

# Mass Spectrometry in Precision Medicine Market to Grow at 8.01% CAGR by 2032 | SNS Insider

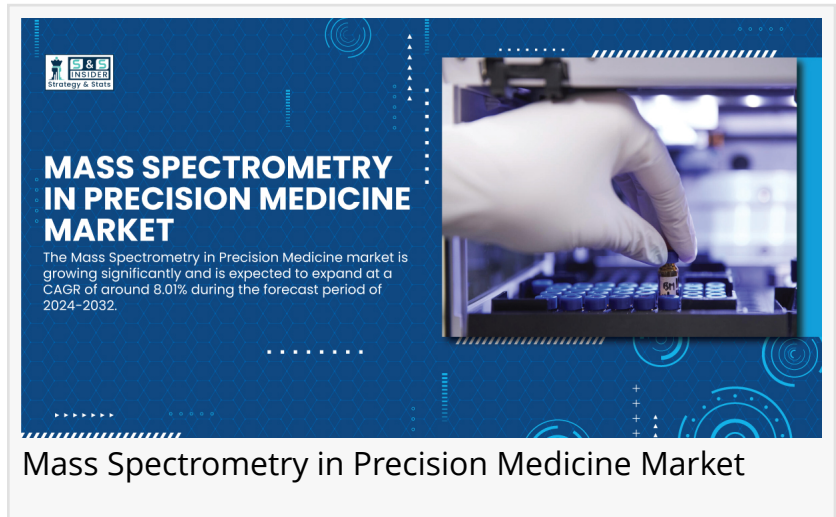
*Mass Spectrometry in Precision Medicine Market to Grow at 8.01% CAGR by 2032*

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According to Research by SNS Insider,

The [Mass Spectrometry in Precision Medicine Market](#) is poised for

substantial growth, with an estimated CAGR of 8.01% during the forecast period of 2024-2032. The increasing demand for personalized healthcare solutions, advancements in high-resolution mass spectrometry, and the rising adoption of biomarker-based diagnostics are key factors propelling market expansion.



## Key Growth Drivers:

- Growth in Precision Medicine Adoption – The shift towards personalized therapies and patient-specific treatment protocols is fueling the demand for highly targeted analysis tools like mass spectrometry.
- Advancements in Mass Spectrometry Technology – Continuous advancements in high-throughput sequencing, tandem mass spectrometry (MS/MS), and hybrid mass spectrometry systems are enhancing diagnostic precision.
- Wider Applications in Drug Discovery – Pharmaceutical and biotech companies are leveraging mass spectrometry for biopharmaceutical analysis, metabolomics, and therapeutic drug monitoring.
- Expenditure – Growing expenditure on biomarker research, proteomics, and genomics is fueling adoption in research institutes and healthcare institutions.

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Segment Analysis

By Type, The LC-MS segment contributed the most to the market in 2023, with a market share of 48% of the entire market.

This is because LC-MS has high sensitivity, and specificity, and can analyze complicated biological samples. LC-MS is applied in proteomics, metabolomics, and pharmacokinetics, and therefore it is critical in drug discovery and precision diagnostics. However, the QTOF segment is anticipated to grow at the maximum CAGR throughout the forecast period. The growth is facilitated by the high resolution provided by QTOF, enhanced mass determination precision, and enhanced ability in the detection of a large number of biomolecules. Researchers and physicians are widely using QTOF mass spectrometry in disease diagnosis, biomarker exploration, and metabolomics analysis.

By Application, the disease diagnosis segment led the market in 2023, with over 50% of the overall market share.

Mass spectrometry has emerged as a critical tool in clinical diagnostics, especially in oncology, infectious disease detection, and metabolic disorder screening. Its capability to deliver rapid, high-resolution molecular analysis allows for early disease detection and more accurate treatment approaches. Hospitals and diagnostic labs are increasingly incorporating mass spectrometry into their operations to enhance diagnostic accuracy and patient outcomes.

The biomarker discovery segment is anticipated to witness the highest growth in the forecast period. The growing need for targeted therapies has spurred research to find new biomarkers that can be used for early disease detection and targeted treatments. Mass spectrometry, with its unmatched capability to examine proteins, metabolites, and nucleic acids, is changing the face of biomarker research. The quick strides in proteomics and metabolomics are also pushing the application of mass spectrometry for biomarker discovery faster.

Pharmaceutical and Biotechnology Companies are the biggest end-users of mass spectrometry, using the technology for drug discovery, pharmacokinetics, and quality control.

Mass spectrometry is critically important in the evaluation of the efficacy of drugs, the identification of possible side effects, and compliance with regulations. The demand for more clinical trials and biopharmaceuticals also increases the adoption of mass spectrometry within this industry. Hospitals and Diagnostic Laboratories are increasingly applying mass spectrometry to clinical uses, especially in disease diagnosis, therapeutic drug monitoring, and forensic toxicology. The application of mass spectrometry in clinical settings is enhancing diagnostic accuracy and patient care.

### Regional Analysis

North America dominated the Mass Spectrometry in Precision Medicine Market in 2023 with 45.10% of the overall market share.

Strong research and development initiatives, cutting-edge healthcare infrastructure, and substantial investment in precision medicine drive the leadership of the region. The presence of top-tier pharmaceutical and biotechnology firms and support from positive government policies have fast-tracked the use of mass spectrometry in research and clinical purposes. The growing incidence of chronic conditions, such as cancer and neurological disorders, has also added to the need for accurate and effective diagnostic tools. Furthermore, regulatory encouragement for mass spectrometry-based diagnostics is also driving market growth in North America.

Asia Pacific is experiencing explosive growth in the mass spectrometry market on account of growing healthcare spending, government initiatives favoring precision medicine programs, and growing adoption of sophisticated diagnostic tools. China, Japan, and India are the key drivers of growth, and they are heavily investing in R&D. The growth in biotechnology companies, rising clinical trial operations, and the growing incidence of chronic diseases are driving demand for mass spectrometry-based diagnostics. Moreover, the rising partnerships among world market players and local research institutions further improve the market's growth in Asia Pacific.

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#### Recent Developments

- June 2024 – Thermo Fisher Scientific introduced the Thermo Scientific Stellar Mass Spectrometer, a next-generation solution for high sensitivity and fast throughput, speeding translational omics research and enabling precision medicine.
- June 2024 – Agilent Technologies launched the Agilent 7010D Triple Quadrupole GC/MS System for food and environmental testing, and the ExD Cell for the 6545XT AdvanceBio LC/Q-TOF system, targeted towards biopharma and life sciences research.

#### Key Market Players

- Thermo Fisher Scientific (Q Exactive HF-X Hybrid Quadrupole-Orbitrap Mass Spectrometer, TSQ Altis Triple Quadrupole Mass Spectrometer)
- Agilent Technologies (6400 Series Triple Quadrupole LC/MS, 6495 Triple Quadrupole LC/MS System)
- Waters Corporation (Xevo TQ-S Micro Mass Spectrometer, SYNAPT G2-Si HDMS System)
- SCIEX (TripleTOF 6600 System, QTRAP 6500+ System)
- PerkinElmer (AxION iQT Mass Spectrometer, Sciex 6500 Series QTRAP)
- Bruker Corporation (timS-TOF Pro Mass Spectrometer, Microflex LRF MALDI-TOF Mass Spectrometer)
- Shimadzu Corporation (LCMS-8060 Triple Quadrupole Mass Spectrometer, MALDI-8030 Mass Spectrometer)
- Horiba Scientific (Scientific XGT-5000, LC-8000 UV-Visible Spectrometer)
- JEOL Ltd. (JMS-T2000GC AccuTOF, JMS-Q1500GC Quadrupole GC/MS)
- Danaher Corporation (AB Sciex 6500+ Series Mass Spectrometer, IonWorks Barracuda System)

- Thermo Fisher Scientific (Orbitrap Fusion Lumos Tribrid Mass Spectrometer, Q Exactive Plus Mass Spectrometer)
- PerkinElmer (Avio 500 ICP-OES, Flexar MS-80 Mass Spectrometer)
- Agilent Technologies (1200 Series High-Performance Liquid Chromatograph (HPLC), 6495B Triple Quadrupole LC/MS)
- Waters Corporation (ACQUITY UPLC H-Class System, Waters Synapt G2-Si Mass Spectrometer)
- Bio-Rad Laboratories (Profinia Protein Purification System, Bio-Plex Pro Human Cytokine 27-plex Assay)
- Bruker Corporation (Compass Open Access, UltrafleXtreme MALDI-TOF Mass Spectrometer)
- MassTech (MAESTRO Mass Spectrometry Software, QTOF Mass Spectrometer)
- Exspect Instruments (Molecule Recognition Mass Spectrometer, LC-MS/MS system for Proteomics)
- LabCorp (Liquid Chromatography-Mass Spectrometry (LC-MS/MS) Services, Proteomics Diagnostic Testing)
- BioMérieux (VITEK MS System, MALDI-TOF Mass Spectrometer)

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