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Protein Sequencing - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-06-01 | 114 pages | Mordor Intelligence

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Report description:

Protein Sequencing Market Analysis

The Protein Sequencing Market size is estimated at USD 1.67 billion in 2025, and is expected to reach USD 2.08 billion by 2030, at a CAGR of 4.51% during the forecast period (2025-2030).

Demand growth reflects an ecosystem shift from classical mass-spectrometry workflows toward single-molecule approaches that reveal protein variants and post-translational modifications in real time. Pharmaceutical companies deepen adoption to accelerate target validation, while Contract Research Organizations (CROs) capture incremental outsourcing budgets. Platform developers bundle instruments with consumables and analytics software, turning reagent sales into recurring revenue streams that cushion price pressure on hardware. North America retains spending leadership through entrenched R&D infrastructure, yet Asia-Pacific outpaces all regions in growth as local biopharma investment rises and regulatory pathways align with global norms.

Global Protein Sequencing Market Trends and Insights

Rising Prevalence of Chronic Diseases

Escalating burdens of cancer, cardiovascular disorders, and neurodegeneration push healthcare systems to augment genomic data with proteomic insight. The UK Biobank initiated a 2025 study profiling 5,400 proteins across 600,000 samples, laying the groundwork for large-scale correlation between circulating proteins and clinical outcomes. Early-stage cancer screening shows pronounced benefit: plasma-based multi-cancer tests reached 93% sensitivity in men and 84% in women, eclipsing many current modalities. Combining proteome, genome, and imaging layers fuels AI models that sharpen risk prediction and drive demand within the protein sequencing market. Pharmaceutical companies, already holding 53.78% share, integrate these datasets to prioritise therapeutic targets and stratify trial populations.

Advancements in Sequencing Technologies

Single-molecule innovations are redefining technical limits. Oxford Nanopore Technologies reported >98% accuracy in identifying protein variants with a prototype pore-based system.Quantum-Si commercialised this vision through the Platinum Pro benchtop sequencer launched in 2025, coupling semiconductor chips with machine-learning-guided base-calling. On the software side, deep-learning models such as InstaNovo now deliver 90.5% peptide sequencing accuracy from sparse amino-acid reads, dramatically shortening analysis cycles. Increased analytic power underpins the 7.63% CAGR rise in reagent demand as users run larger sample volumes to exploit newfound resolution.

High Cost of Instruments and Services

Front-end capital remains a gating factor. Flagship single-molecule sequencers list upwards of USD 500,000 per unit, while consumables can add USD 50 per sample for deep proteome coverage. The FDA's 2024 staff reductions inflated review timelines, indirectly raising compliance costs for newcomers. These economics motivate drug developers to engage CROs, whose 8.59% CAGR reflects an outsourcing preference that tempers direct instrument sales. Vendors counter by offering subscription financing and reagent rental plans, yet affordability gaps persist in price-sensitive markets.

Other drivers and restraints analyzed in the detailed report include:

Growing Focus on Target-Based Drug Development / Increased R&D Funding in Proteomics / Complexity of Data Interpretation /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

The segment generated the largest contribution to the protein sequencing market in 2024, with Software & Services accounting for 38.83% of revenue. Instruments remain essential, but value increasingly migrates to cloud analytics subscriptions that translate complex spectra into actionable readouts. Growth accelerates in Reagents & Consumables, which expand at a 7.63% CAGR as single-molecule workflows rely on branded chips and chemistry kits. Integrated ecosystems create vendor lock-in that stabilises recurring turnover and underpins predictable cash flows for suppliers.

Customers now prioritise end-to-end solutions that bundle assay kits, AI algorithms, and workflow automation. Developers embed real-time quality metrics and adaptive chemistries, shortening run times and reducing failed experiments. Over the forecast window, instrument margins may compress as competition rises, while software-as-a-service models and reagent volumes sustain profitability. As a result, the protein sequencing market is expected to experience a broader shift toward service-centred revenue without diluting ongoing hardware innovation.

The Protein Sequencing Market Report Segments the Industry Into by Products and Services (Instruments, Reagents and Consumables, Softwares and Services), Application (Biomarker Discovery, Protein Engineering Studies, and More), End User (Pharmaceutical Companies, and More), and Geography (North America, Europe, Asia-Pacific, Middle East and Africa, South America). The Market Forecasts are Provided in Terms of Value (USD).

Geography Analysis

North America generated 43.63% of revenue in 2024, benefiting from deep venture capital pools, corporate R&D clustering, and established regulatory pathways. Leading suppliers such as Thermo Fisher Scientific and Quantum-Si operate extensive manufacturing and support networks that reinforce regional dominance. Nevertheless, high labour and operational costs temper incremental growth, resulting in a mid-single-digit CAGR across the outlook period.

Asia-Pacific is the fastest mover with an 8.83% CAGR, propelled by government initiatives that underwrite local biomanufacturing capacity and streamline ethics review for multi-centre studies. China finances large-scale biotechnology parks, while Japan, South Korea, and India expand academic-industry collaborations. The influx of multinational clinical trials stimulates demand for high-throughput proteomics, enlarging the regional protein sequencing market.

Europe exhibits steady progress, anchored by long-standing proteomics centres and pan-EU funding mechanisms such as Horizon Europe. Harmonised documentation standards facilitate cross-border sample exchange, which enables consortium-driven discovery efforts. Markets in South America, the Middle East, and Africa remain emergent but show promise as diagnostics programmes expand and public health agencies recognise the value of protein-level surveillance. Collectively, geographic diversification cushions suppliers against cyclical spending patterns and broadens the global protein sequencing market footprint.

List of Companies Covered in this Report:

Thermo Fisher Scientific / Agilent Technologies / Waters Corporation / Bruker / Shimadzu / Rapid Novor / Quantum-Si / Encodia / Erisyon / Charles River / SGS / Selvita / Alphalyse / Creative Proteomics / Proteome Factory / Bioinformatics Solutions / MS Bioworks / Allumiqs / PPD Laboratories / Danaher / Protein Metrics /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

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