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AI in Life Science Market by Offering (End-to-End, Niche/Point, AI Tech), Application (Drug Discovery, Clinical Trials, Quality Assurance, Regulatory), Tool (Machine Learning, NLP, Computer Vision), End User (Pharma, Biotech) - Global Forecast to 2031

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Abstracts

The AI in life science market is projected to reach USD 69.34 billion by 2031, up from USD 21.58 billion in 2026, at a high CAGR of 26.3% over the forecast period.

The growth rate is further fueled by the growing trend toward data-oriented and agentic AI architectures that help life science companies advance from conventional analytics to self-acting systems. These innovations particularly impact clinical trial optimization, real-world evidence collection, and post-market monitoring, as fragmented and vast data sets have limited the efficiency of these applications. In addition, the adoption of cloud-based services with AI technology allows life science companies to consolidate diverse data sources, ranging from medical and genomics data to patient-specific information, to facilitate predictive modeling and fast-track the drug development process. The emergence of AI agents that automate sophisticated tasks, such as literature search, hypothesis formulation, and patient segmentation, also contributes to increased operational efficiency and accelerated innovation cycles. For example, Oracle Corporation (US) released the Oracle Life Sciences AI Data Platform in January 2026, which combines more than 129 million de-identified medical records with generative AI and agentic intelligence solutions to speed up research and clinical trials. In addition, IQVIA Holdings Inc. (US) introduced AI agents in June 2025 to optimize workflows in clinical and commercial operations, including target identification and clinical data analytics.

Based on region, the AI in life science market is segmented into North America, Europe,

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Asia Pacific, Latin America, and the Middle East & Africa. North America is the dominant region in the global AI in life science market owing to the presence of sophisticated research networks, high levels of digitalization, and considerable investment in innovations in biotechnology and pharma. The region leverages its strengths in terms of synergies between universities, hospitals, and tech companies, helping to implement AI-driven advancements more quickly. Moreover, a positive regulatory environment and rapid adoption of sophisticated analytics in drug discovery and clinical trials have helped to consolidate the region's position as a leader in this market. Europe is the second-largest market in the segment due to the growing interest of governments and companies in AI technology and AI products compliant with data privacy requirements.

Based on offerings, the AI in life science market is divided into end-to-end solutions, niche/point solutions, AI technology, and services. In 2025, end-to-end solutions had the largest market share due to increasing demand for integrated platforms that support data ingestion, model building, validation, and deployment across the entire life sciences value chain. These solutions make the life sciences workflow more efficient and cohesive, from target identification to clinical and commercial levels. Companies in the industry now tend to prefer full-stack AI platforms over stand-alone software for their ability to scale, comply with regulations, and enable collaboration across functions. This shift reflects a broader market trend moving from experimental AI applications toward enterprise-level implementation that requires consistent, repeatable, and auditable processes for research and development and clinical trials. For example, in October 2025, the Italian organization expert.ai launched AI-powered solutions to optimize clinical trial design and regulatory and research workflows. Additionally, in June 2025, ArisGlobal (US) implemented its LifeSphere NavaX AI platform at a leading pharmaceutical company globally, enabling automated analysis of roughly 350,000 safety cases annually.

Based on application, the AI in life science market is divided into clinical applications and non-clinical applications. The clinical applications segment is expected to see the fastest growth in this market. This is attributed to the rise in the use of AI to improve patient experiences, conduct clinical trials more effectively, and adopt precision medicine through real-time data analysis. AI-powered software is helping to improve patient enrollment, trial management, and protocol optimization, thereby reducing trial periods and improving success rates. In addition, the transition toward patient-focused, decentralized clinical trials is driving the adoption of AI-powered software. This trend was reflected in the following development. By March 2026, IQVIA had deployed over 150 AI agents, which were used by 19 of the top 20 pharmaceutical firms. In June 2025,

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IQVIA Holdings Inc. (US) released AI agents to streamline clinical operations.

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List Of Tables

LIST OF TABLES

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List Of Figures

LIST OF FIGURES

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