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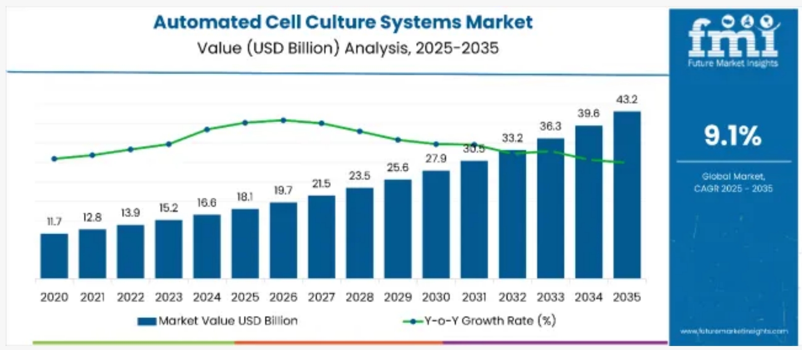
Automated Cell Culture Systems Market to Reach USD 43.2B by 2035, Driven by Growth in USA, Europe, APAC & Saudi Arabia

Global automated cell culture systems market set to grow at 9.1% CAGR, fueled by AI integration, cell therapy expansion, and large-scale biologics demand.



Automated Cell Culture Systems Market

CO, UNITED STATES, November 7, 2025 /EINPresswire.com/ -- The global automated cell culture systems market is experiencing strong growth momentum, projected to expand from USD 18.1 billion in 2025 to USD 43.2 billion by 2035, representing a 9.1% CAGR during the forecast period. The rise is driven by increasing demand for standardized, high-throughput, and contamination-controlled cell cultivation across biologics manufacturing, cell therapy development, regenerative medicine, and advanced research pipelines.

> “Automation is reshaping cell-based manufacturing, ensuring standardization, speed, and scalability for precision medicine and biologics innovation.”
> *Sabyasachi Ghosh*

Automation has become a strategic priority in biopharmaceutical and biotechnology organizations as they scale cell-based production while maintaining regulatory compliance and reproducibility. Automated cell culture systems reduce manual handling errors, optimize resource utilization, and enable consistent product quality — all critical factors in producing therapeutic cell products, vaccines, and monoclonal antibodies.

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AI-Driven Automation Reshaping Laboratory and Bioproduction Workflows

One of the most transformative market forces is the integration of artificial intelligence (AI) and machine learning into automated culture platforms. These technologies enable:

- Predictive scheduling for nutrient media exchanges
- Real-time environmental adjustment of temperature, oxygen, and CO_2 levels
- Automated detection of contamination before visible impact
- Data-driven optimization of cell growth and metabolic efficiency

By enabling decision-making based on live experimental feedback, AI is shifting the industry from manual oversight to self-regulating, intelligent bioprocess management — accelerating timelines in drug discovery and therapeutic manufacturing.

Application Growth Led by Cell Therapy and Regenerative Medicine

Among application segments, cell therapy is forecast to achieve the highest CAGR of 11.5% through 2035, propelled by expanding clinical programs in CAR-T therapy, allogeneic cell therapies, and stem-cell derived therapeutic platforms. Hospitals and clinical research centers adopting personalized treatments increasingly rely on automated systems to ensure batch consistency, scalability, and contamination control.

Drug development and stem cell research remain strong contributors, benefiting from automation's ability to support reproducible, high-throughput assay environments.

Rapid Adoption Across End Users, Particularly Hospitals and CDMOs

The hospital segment, especially those providing regenerative therapies and oncology cell treatments, is expected to experience the fastest growth at 12.1% CAGR. As advanced therapies move from trial stages to clinical practice, healthcare systems need reliable automated workflows to support patient-specific product manufacturing.

Contract Development and Manufacturing Organizations (CDMOs/CMOs) are also expanding investments to support multiple clients simultaneously and reduce production turnaround times.

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Regional Market Outlook: USA, Europe, APAC, and Saudi Arabia

• United States: Expected to grow at 6.6% CAGR, driven by strong pharmaceutical infrastructure and FDA-aligned automation adoption.
• Western Europe (including UK, Germany, France): Growth between 7.1% to 8.3% CAGR, supported by national cell therapy accelerators, biomanufacturing initiatives, and digital lab modernization.
• Japan and East Asia: Among the fastest-growing regions at 10.4% CAGR, led by pioneering iPSC research and government-funded regenerative medicine programs.

• Saudi Arabia & GCC: Increasing healthcare modernization, investments in biotech innovation hubs, and strategic development of localized biomanufacturing capacity position the region as an emerging automation adopter within APAC & MEA growth corridors.

Competitive Landscape and Strategic Initiatives

Key industry players — including Thermo Fisher Scientific, Merck KGaA, Sartorius AG, Lonza Group, Corning, Hamilton Medical, Tecan Group, Biospherix, and PromoCell — are prioritizing:

- Integrated automation-software ecosystems
- Closed, contamination-controlled platforms
- Digital twins and data-traceable workflows
- AI-enabled bioprocess modeling

Recent developments include Hamilton Medical's launch of Cell Care STAR, Merck's acquisition of HUB Organoids Holding B.V., and Lonza's optimization of CHO media systems to enhance monoclonal antibody production.

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