

Automated Cell Processing System Market: Focus on Apheresis, Expansion, Harvest, Fill / Finish, Cryopreservation, Thawing, 2020-2030

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Abstracts

The automated cell processing system market is expected to reach USD 220 million in 2020 and anticipated to grow at a CAGR of 16% during the forecast period 2020-2030.

Advanced Therapy Medicinal Products (ATMPs), such as cell and gene therapies, have entered a transformative phase within the healthcare sector. Over the past two decades, regulatory approval has been granted to more than 30 ATMPs. Presently, there are over 1,050 clinical trials undertaken by more than 1,000 global companies dedicated to evaluating cell and gene therapies, as reported by The Alliance for Regenerative Medicine. However, despite advancements in the automated cell processing system market, several challenges impede their commercial success. The current manufacturing process for cell therapy is laborious, time-consuming, and expensive. Specialized therapeutic products often require manual labor in distinct (open processing) settings, making scalability difficult and posing a high risk of contamination. Another concern is the variability between batches, where even slight alterations in production protocols can impact product quality. Consequently, cell therapies are priced significantly, ranging from USD 300,000 to USD 500,000 per dose.

Experts propose that addressing manufacturing challenges in cell therapy can be accomplished by embracing automated and closed cell processing systems. These solutions efficiently oversee multiple aspects of the manufacturing process while complying with global regulatory standards. Their advantages include reduced contamination risk, optimized utilization of facilities and resources, minimized process variation, and consistent product quality. Additionally, these systems offer substantial reductions in labor costs, estimated between 40% to 90%. The potential for cost savings, combined with the streamlining of complex cell therapy processing, has

garnered substantial interest from stakeholders in the automated cell processing system market. With the growing demand for cost-effective personalized medicine and the benefits offered by automated closed systems, it is anticipated that this specialized market will undergo significant growth in the forecasted future.

Report Coverage

The report conducts an examination of the automated cell processing system market based on distinct cell processing stages, operational scope, end-user categories, and geographic regions.

It thoroughly analyzes various factors, including drivers, restraints, opportunities, and challenges, that impact the market's growth trajectory.

It evaluates potential advantages and impediments within the market, providing insights into the competitive landscape for leading market players.

The report offers revenue forecasts for market segments across five different regions.

It conducts an extensive evaluation encompassing more than 60 automated and closed systems currently present in the market. This evaluation is aligned with specific cell therapy processing stages such as apheresis, separation, expansion, harvest, fill/finish, cryopreservation, and thawing. Detailed attributes include essential features like traceability, user-friendliness, configurability, scalability, process monitoring, touch-screen user interface, data management, integration capabilities, and alert systems. Product specifications cover dimensions (length, width, depth, height, and weight), supported cell types (stem cells and immune cells), cell culture types (adherent and suspension), operational scales (pre-clinical, clinical, and commercial), application scopes (research and therapeutic), and end-user categories (hospitals/medical centers/clinics, research institutes/academic institutes, laboratories, commercial organizations), as well as support services offered such as product support, technical assistance, training, installation, validation, maintenance, regulatory compliance, among others.

A comprehensive assessment is conducted considering supplier power based on developer experience/expertise in the industry, portfolio aspects encompassing the number of systems, supported cells, culture types,

operational scales, applications, end-users, support services, regulatory certifications, and key product specifications. Supplier competitiveness is evaluated based on these diverse parameters.

Detailed profiles of industry participants offering automated and closed cell therapy processing systems are provided, including company overviews, financial details (if available), and comprehensive system descriptions. Each profile incorporates recent developments, highlighting achievements, partnership activities, and future growth strategies envisioned by these entities.

A thorough review of partnerships in automated and closed cell therapy processing systems since 2016 is presented, considering parameters such as partnership year, adopted models, therapy types, cell processing steps, systems involved, partner focus areas, major contributors (in terms of partnership quantity), and geographical locations of collaborators.

An exploration is made into recent initiatives undertaken by major pharmaceutical entities in the automated cell processing system market. This assessment evaluates their strategic activities, investments, and engagements within this domain.

Key Market Companies

Cytiva

Pall

Terumo BCT

ThermoGenesis

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