

3D Microfluidic Cell Culture Market Size Estimated at USD 393.95 Million, with 15.8% CAGR From 2024-2032 - PMR

Progression in tissue engineering is a major factor driving the 3D microfluidic cell culture market growth.

NEW YORK CITY, NY, UNITED STATES, October 1, 2024 /EINPresswire.com/ -- The 3D microfluidic cell culture market report by Polaris Market Research offers a comprehensive analysis of the market, covering all the major aspects to help stakeholders make informed decisions.

[3D Microfluidic Cell Culture Market Size](#) is estimated at USD 393.95 million in 2023, with a CAGR of 15.8% from 2024 to 2032. The market is projected to reach USD 105.21 billion by 2032.



3D Microfluidic Cell Culture Market

3D cell culture is a culture environment that permits cells to evolve and communicate with bordering extracellular structures in three dimensions. This contrasts with conventional 2D cell cultures in which cells are grown in a flat monolayer or a plate. 3D cell cultures can be extended with or without a reinforcing scaffold. In the scaffold 3D cultures, 3D cells might be cultured within a reinforcing scaffold to permit growth universally. Polymeric substances entail a framework of interconnected polymer chains that can soak up and preserve water. Hydrogels can be emanated from animals or plants or synthesized from chemicals.

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3D cell cultures have become growingly favored as they are more physiologically pertinent and better constitute in vivo tissue. No cell types within the body develop as monolayers autonomous of other cells or tissue. Rather, most cells organically prevail in intricate 3D frameworks involving varied cell types within an extracellular matrix. The innumerable cell-to-cell and cell-matrix interplay all have a sizeable impact on the behavior. The surge in detrimental



Growing demand for more precise and physiologically pertinent cell culture models is propelling the market ahead."

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illnesses and the push for customized medicines are impacting the 3D microfluidic cell culture market growth favorably.

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What are the key players in the 3D microfluidic cell culture market?

- Emulate Inc.
- TissUse GmbH
- MIMETAS BV
- InSphero AG
- CN Bio Innovations Ltd.
- Kirkstall Ltd.
- Hurel Corporation
- AIM Biotech
- Elveflow
- Blacktrace Holdings Ltd.
- Tara Biosystems Inc.
- Ascendance Biotechnology Inc.
- Synthecon Incorporated
- Fluidigm Corporation
- Organovo Holdings Inc.

are some of the leading players in the 3D microfluidic cell culture market.

The firms are spearheading the market through ongoing invention, sizeable research and development ventures, and deliberate alliances to progress the potential of 3D microfluidic technologies. Some of the latest developments in the market are:

- In May 2023, Emulate Inc. declared an alliance with the US Food and Drug Administration (FDA) to assess their liver chip platform for toxicology testing. It is a notable stride towards the administrative approval of organ-on-a-chip technologies in drug security evaluation.
- In March 2023, MIMETAS declared the instigation of the contemporary category of their organoplate 3 lane, which permits even more intricate tissue culture models, improving the platform's usage in organ-on-a-chip and illness research entreaties.

What are the technological progressions in the 3D microfluidic cell culture market?

Technological Progressions: The amalgamation of artificial intelligence and machine learning into

3D microfluidic cell culture systems is converting the topography of biomedical research and drug advancement. These technologies sanction the automation and maximization of exploratory procedures permitting for real-time investigation and translation of intricate biological data.

Productive Drug Detection Procedures: High throughput screening platforms are becoming increasingly frequent in the market, pushed by the requirement for more productive drug detection procedures. Conventional drug screening practices are often tedious and need extensive proportions of reagents and specimens. This, in turn, is having a favorable impact on 3D microfluidic cell culture market sales.

Progression in Tissue Engineering: The market is witnessing sizeable growth due to progressions in tissue engineering and regenerative medicines. These procedures offer a more precise portrayal of human tissues and organs, sanctioning researchers to consider intricate biological procedures in a regulated environment.

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North America: North America accounted for the largest 3D microfluidic cell culture market share. The region's robust growth is primarily due to its robust existence of pharmaceutical and biotechnology firms, sizeable research and advancement ventures, and sizeable funding in progressive medical technologies.

Europe: Europe is anticipated to witness significant growth from 2024 to 2032. This can be attributed to speedy growth due to growing funding in healthcare framework and research capabilities.

By Component Outlook:

- 3D Microfluidic Devices
- Media
- Reagents
- Consumables

By Application Outlook:

- Drug Discovery & Development
- Tissue Engineering
- Regenerative Medicine
- Cancer Research
- Stem Cell Research

- Organ-on-a-Chip
- Toxicology Testing
- Disease Modeling
- Others

By End-User Outlook:

- Pharmaceutical & Biotechnology Companies
- Academic & Research Institutes
- Hospitals & Diagnostic Centers
- Contract Research Organizations (CROs)
- Others

By Region Outlook:

- North America (US, Canada)
- Europe (France, Germany, UK, Italy, Netherlands, Spain, Russia)
- Asia Pacific (Japan, China, India, Malaysia, Australia, Indonesia, South Korea)
- Latin America (Brazil, Mexico, Argentina)
- Middle East & Africa (Saudi Arabia, UAE, Israel, South Africa)

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Q&A:

How much is the global 3D microfluidic cell culture market?

The market size was valued at USD 105.21 million in 2023 and is projected to grow to USD 393.95 million by 2032.

What is the 3D microfluidic cell culture market growth rate?

The global market is projected to register a CAGR of 15.8% during the forecast period, 2023-2032.

Which region held the largest market share?

North America had the largest share of the global market.

Which application dominates the market?

The drug discovery and development segment dominated the market in 2023.

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