

## **Induced Pluripotent Stem Cells: Global Markets**

Market Research Report | 2024-11-07 | 152 pages | BCC Research

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### **Report description:**

Description

Report Scope

The scope of this study encompasses an investigation of the market. BCC Research analyzes this market based on application type, product function, generation of iPSC and types of iPSC derived cells and species. Application-based market segments include drug development and toxicity testing, academic research and regenerative medicine. Product function-based market segments include molecular and cellular engineering, cellular reprogramming, cell culture, cell differentiation and cell analysis. iPSC-derived cell-type-based market segments include hepatocytes, neurons, cardiomyocytes, endothelial cells and other cell types. Other cell types include astrocytes, fibroblasts and hematopoietic progenitor cells. BCC Research determines the current market status in each segment, examines its impact on future needs and presents growth forecasts through 2028.

The report also provides a detailed analysis of the market's drivers, restraints, challenges and opportunities. In addition, the report includes the company profiles of the key players with detailed information about their business segments, financials, product portfolios and recent developments. It also provides detailed information on this market, emerging technologies and new developments, regulatory landscape, patent analysis, pipeline analysis and investment outlook and deals.

Report Includes

- 28 data tables and 56 additional tables
- An analysis of the global market for induced pluripotent stem cells (iPSCs) or artificial stem cells
- Analyses of global market trends, with market revenue data from 2020 to 2023, and projected CAGRs through 2028
- Estimate of the size and revenue prospects of the global market, along with a market share analysis by reprogramming method, generation method, application, product function, iPSC-derived cell type, species, end use, and region
- Facts and figures pertaining to the market dynamics, technological advances, regulations, and the macroeconomic factors that influence the industry
- A Porter's Five Forces model, as well as global supply chain and PESTLE analyses
- Insights into iPSC research activity, emerging technologies, clinical trials and pipeline products

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- Patent activity and analysis of recent patent grants/publications
- Overview of sustainability trends and ESG developments, with emphasis on consumer attitudes, ESG score analysis, and the ESG practices of leading companies
- Analysis of the industry structure, including company market shares, strategic alliances, M&A activity and a venture funding outlook
- Profiles of market leaders, including Fujifilm Cellular Dynamics (FCDI) Inc., Axol Bioscience Ltd., Merck KGaA, Thermo Fisher Scientific Inc., and Takara Bio Inc.

## Executive Summary

### Summary:

Induced pluripotent stem cells (iPSCs) are artificial stem cells generated from somatic cells through the simultaneous expression of specific factors associated with pluripotency. The discovery of human iPSCs (hiPSCs) and their capacity to differentiate into various cell types of the body has led to significant scientific interest and enthusiasm. In contrast to embryonic stem cells, iPSCs offer an added advantage of being easily derived from human samples without any ethical concerns.

The rapid evolution of human iPSC technology since 2007 led to an exciting new age for the fields of disease modeling, drug discovery, stem cell biology and regenerative medicine. Human iPSCs were rapidly applied to create human "disease-in-a-dish" models and for drug screening to check for potential toxicities as well as efficacy shortly after the technology was developed. With the rise in interest in phenotypic screening and the benefits of using human iPSCs for disease modeling over conventional cellular screens, these methods are currently gaining traction. These benefits include their human origin, ease of use, expandability, capacity to generate nearly any type of cell wanted, avoidance of the moral dilemmas surrounding human embryonic stem cells (ESCs) and the possibility of employing patientspecific iPSCs to create personalized therapeutics. The creation of genetically specified human iPSCbased disease models is becoming easier with current developments in gene-editing tools, particularly CRISPR/Cas9. Additionally, iPSCs play a significant role in a new generation of cellular platforms that are more physiologically similar and have several cell types and three-dimensional (3D) designs.

However, there are certain challenges associated with the use of iPSCs, including issues with clonal selection, in vitro culture, adaptability, and/or cell multiplication. Thus, even though the field of iPSCs has come a long way, there are still many issues that need to be seriously addressed to transform hope to reality regarding the effective clinical application of these cells in regenerative medicine.

The iPSC market was valued at \$3.1 billion in 2022 and is forecasted to grow at a CAGR of 9.1% to reach a value of \$5.2 billion by end of 2028.

### **Table of Contents:**

Table of Contents

Chapter 1 Executive Summary

Market Outlook

Scope of Report

Market Summary

Chapter 2 Market Overview

Introduction

Induced Pluripotent Stem Cells (iPSC) Generation

Chapter 3 Market Dynamics

Global Market Dynamics

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## Market Drivers

Increasing Prevalence of Chronic Diseases

Increasing Investment in Biotechnology Industry

Increasing Demand for Personalized Medicines

Increasing Investments for Drug Research and Development

Demand for Effective Drug Discovery and Development Process

Minimizing Animal Testing

## Market Restraints

High Development Costs and Lack of Skilled Workforce

Challenges Associated with iPSC-based Disease Modeling, Cell Therapy and Drug Discovery

## Market Opportunities

Technological Advances

Growth in iPSC Banking

## Chapter 4 Emerging Technologies and Developments

Advances in the iPSC Research

Reprogramming Technologies

Gene Editing Technologies

3D Organoids

Regenerative Medicine

Evolution and Current Application of Artificial Intelligence (AI) in iPSC Research

## Chapter 5 Clinical Trial Analysis

Clinical Trials

## Chapter 6 Patent Analysis

Patent Analysis

## Chapter 7 Market Segmentation Analysis

Segmentation Breakdown

Overview

Generation of Induced Pluripotent Stem Cells -- Market Analysis, by Reprogramming Method

Market for Induced Pluripotent Stem Cells, by Generation Method

Market for Induced Pluripotent Stem Cells, by Application

Academic Research

Pharmaco-toxicological Screening

Drug Discovery and Development

Disease Modeling

Tissue Engineering

Cell Therapy

Global Market

Regional Markets for iPSCs, by Application

iPSC-derived Tissue Cell Market, by Type

Cardiomyocytes

Neurons

Endothelial Cells

Hepatocytes

Other Cells

iPSC-derived Tissue Cell Market, by Species

Global Market

iPSC-derived Tissue Cell Market, by Application

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Global Market  
Market for Induced Pluripotent Stem Cells, by Product Function  
Global Market  
Regional Markets for iPSCs, by Product Function  
Market for Induced Pluripotent Stem Cells, by End Use  
Induced Pluripotent Stem Cell Contract Service Types  
Major Players  
Global Market  
Geographic Breakdown  
Market for Induced Pluripotent Stem Cells, by Region  
The U.S.  
Europe  
Asia-Pacific  
Rest of the World  
Chapter 8 Competitive Intelligence  
Competitive Landscape -- Overview  
Strategic Analysis  
Agreements  
Collaborations & Strategic Alliances  
Partnerships  
New Product Development and Launches  
Expansions and Acquisitions  
Fund Raising  
Approval and Clinical Trials  
Others  
Major Companies in Induced Pluripotent Stem Cells Market, by Type of Offerings  
Chapter 9 Appendix  
Methodology  
Abbreviations  
Sources  
Company Profiles  
ATCC  
AXOL BIOSCIENCE LTD.  
BIO-TECHNE  
FUJIFILM CELLULAR DYNAMICS INC.  
LONZA  
MERCK KGAA  
NCARDIA  
QIAGEN  
REPROCELL INC.  
STEMCELL TECHNOLOGIES  
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