

Global Human Liver Model Market: Analysis By
Product Type (2D Human Liver Model and 3D
Human Liver Model), End-use (ADME Studies,
Toxicology Testing, Disease Modeling and Others),
By End-use (Pharmaceutical & Biotechnology
Companies, Contract Research Organizations and
Academic and Research Institutes), By Region Size
and Trends with Forecast up to 2030

June 2025



Global Human Liver Model Market: Coverage

Executive Summary and Scope

Introduction/Market Overview

Global Market Analysis

Regional Market Analysis

Dynamics

Competitive Landscape

Company Profiling

Global Human Liver Model Market: Coverage

Scope of the Report

Attributes	Details
Title	Global Human Liver Model Market: Analysis By Product Type (2D Human Liver Model and 3D Human Liver Model), Application (ADME Studies, Toxicology Testing, Disease Modeling and Others), By End-use (Pharmaceutical & Biotechnology Companies, Contract Research Organizations and Academic and Research Institutes), By Region Size and Trends with Forecast up to 2030
Coverage	Global and Regional
Regional Coverage	North America (The US, Canada and Mexico), Europe (Germany, UK, France, Italy, Spain and Rest of Europe), Asia Pacific (China, Japan, India, South Korea and Rest of Asia Pacific), Rest of the World
Market Influencing Variables	Growth Drivers, Challenges, Market Trends
Forecast Period of Market	2025-2030
Competition in the Market	Fragmented
Key Players	Organovo Holdings, InSphero, BioIVT LLC, Emulate Inc., MatTek, Mimetas, CN Bio Innovations Ltd., Cyfuse Biomedical KK, Corning Incorporated, Pheonix Bio, Stemcell Technologies, Pandorum Technologies and Kirkstall Ltd etc.

Global Human Liver Model Market: Coverage

Executive Summary

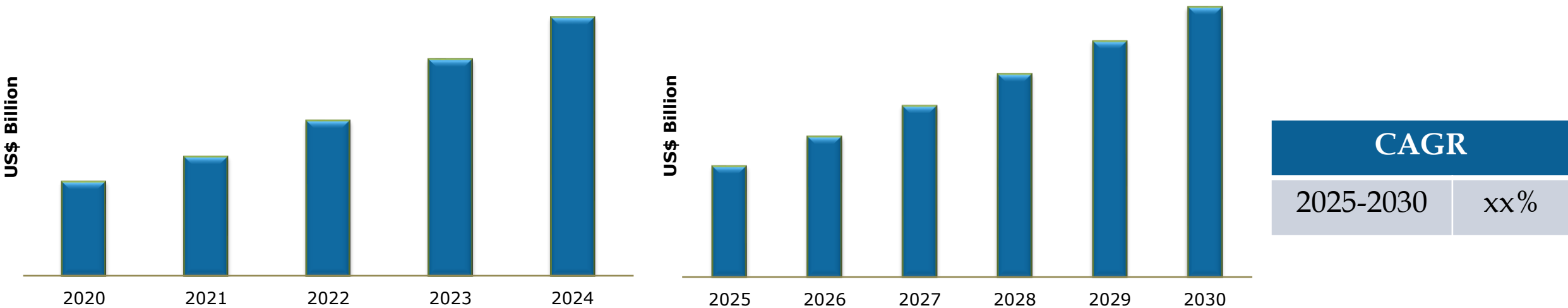
A human liver model is an in vitro system—often using human-derived cells, tissues, or engineered constructs—that replicates key structural and functional aspects of the human liver, enabling researchers to study liver biology, disease mechanisms, drug metabolism, and toxicity outside the human body in a controlled laboratory environment. The global human liver model market value in 2024 stood at US\$1.64 billion, and is expected to grow at a CAGR of 15.03% over the projected period of 2025-2030.

The human liver model market can be segmented on the basis of product type (2D human liver model and 3D human liver model), application (ADME Studies, toxicology testing, disease modeling and others), and end-use (pharmaceutical & biotechnology companies, contract research organizations and academic and research institutes). On the basis of product type, 2D segment dominated the market in 2024 because 2D models are widely adopted in pharmaceutical research and drug development due to their cost-effectiveness, simplicity, ease of use, and well-established protocols. Based on application, toxicology testing segment is expected to grow the fastest during forecasted period because there is a rising demand for more accurate and predictive in vitro human liver models to assess the safety and efficacy of new drugs and chemicals, driven by the need to replace traditional animal testing methods that often fail to predict human-specific responses accurately. On the basis of region, North America dominated the global human liver model market in 2024.

The global human liver model market has increased in 2024 and projections are made that the market would rise in the next five years i.e. 2025-2030 tremendously. The growth is driven by increasing prevalence of liver diseases, growing demand for alternatives to animal testing, increasing focus on personalized medicine, growing investment in liver research, the growing need for early drug toxicity diagnosis etc. Further, the market is expected to grow, owing to integration of AI and machine learning, advancements in organ printing and tissue engineering technologies, shift from 2D to advanced 3D and ex vivo models, rise of hybrid and in silico models etc., yet the market faces some challenges, such as high cost of liver models, dearth of skilled professionals etc.

Human Liver Model Market: Global Analysis

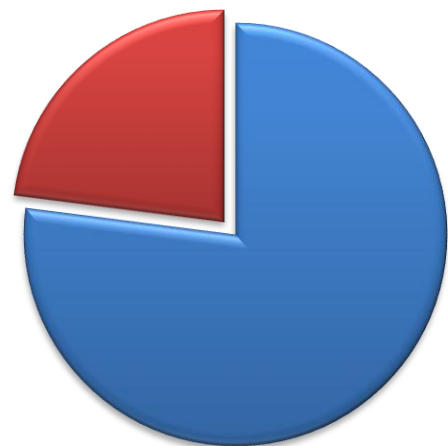
Global Human Liver Model Market by Value



Global Human Liver Model market valued at US\$.... billion in 2024, increased as compared to US\$... billion in 2023. Global Human Liver Model market is anticipated to reach up to US\$... billion by 2030, at a CAGR of%, from US\$... billion in 2025.

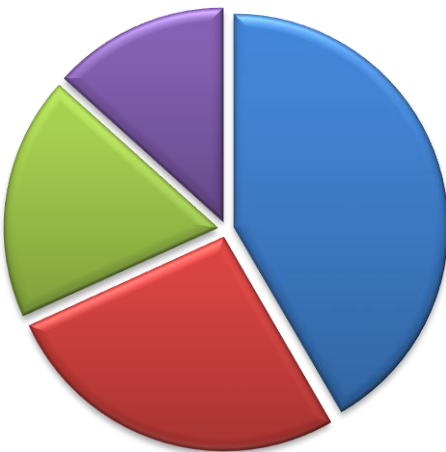
Human Liver Model Market: Global Analysis

Global Human Liver Model Market by Product Type; 2024



Product Type	Share
	(2024)
2D Human Liver Model	xx%
3D Human Liver Model	xx%

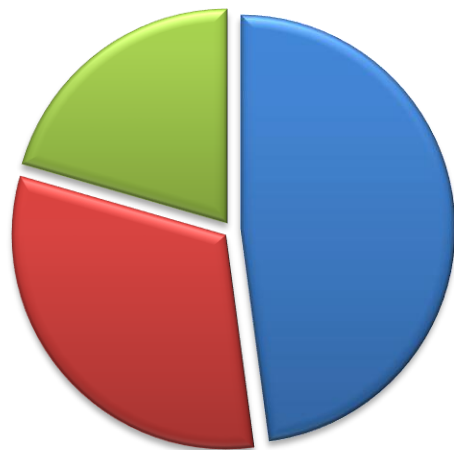
Global Human Liver Model Market by Application; 2024



Application	Share
	(2024)
ADME Studies	xx%
Toxicology Testing	xx%
Disease Modeling	xx%
Others	xx%

Human Liver Model Market: Global Analysis

Global Human Liver Model Market by End-use; 2024



End-use	Share
	(2024)
Pharmaceutical & Biotechnology Companies	xx%
Contract Research Organizations	xx%
Academic & Research Institutes	xx%

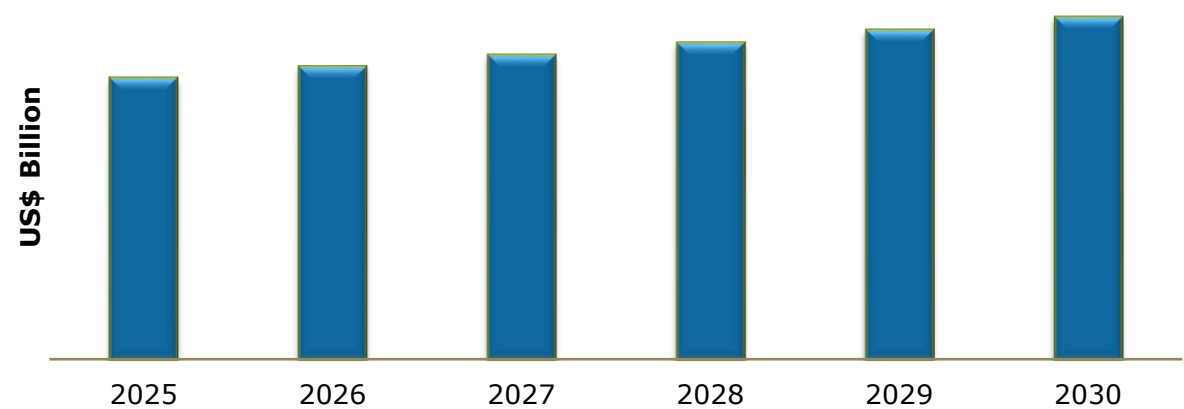
Global Human Liver Model Market by Region; 2024



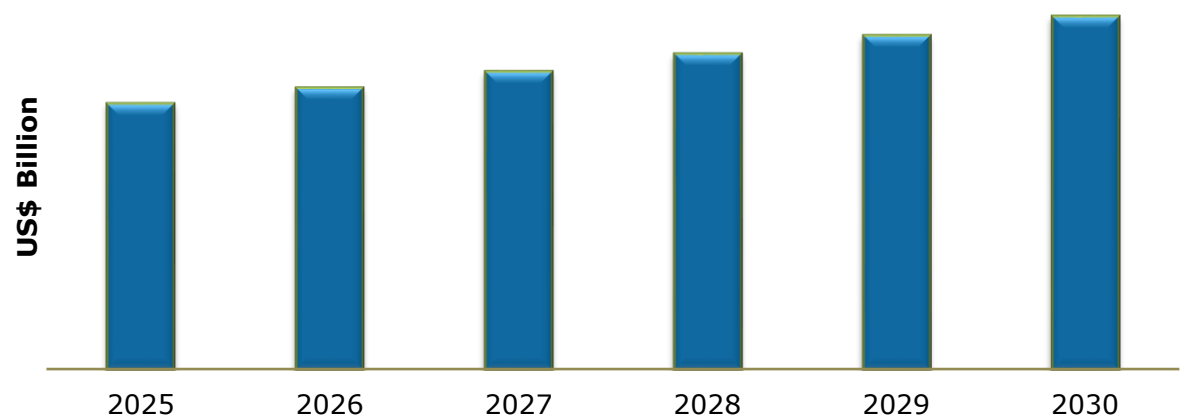
Region	Share
Asia Pacific	xx%
Europe	xx%
North America	xx%
Rest of the World	xx%

Global Human Liver Model Market: Product Type Analysis

Global 2D Human Liver Model Market by Value



Global 3D Human Liver Model Market by Value



Product Type	CAGR
	(202-30)
2D Human Liver Model	xx%
3D Human Liver Model	xx%

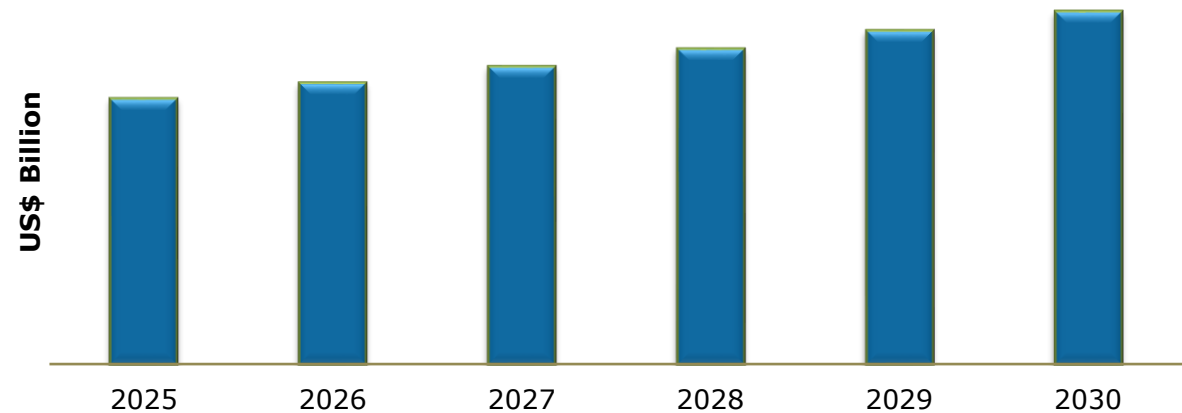
Global Human Liver Model Market: Product Type Analysis

Global 2D Human Liver Model Market by Product Type



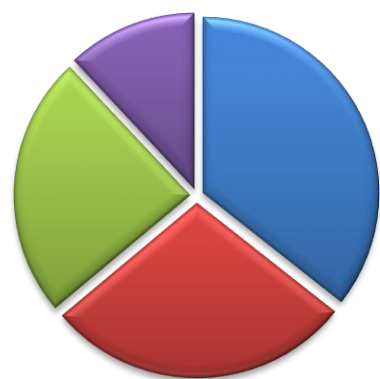
Product Type	CAGR	Share
	(202-30)	(2024)
Cell Lines	xx%	xx%
Primary Human Hepatocytes	xx%	xx%

Global Primary Human Hepatocytes 2D Human Liver Model Market by Value



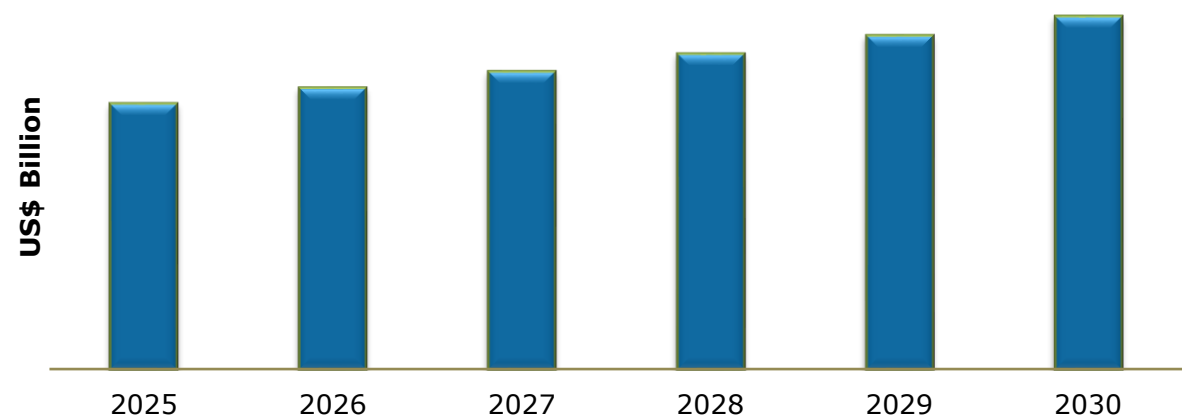
Global Human Liver Model Market: Product Type Analysis

Global 3D Human Liver Model Market by Product Type



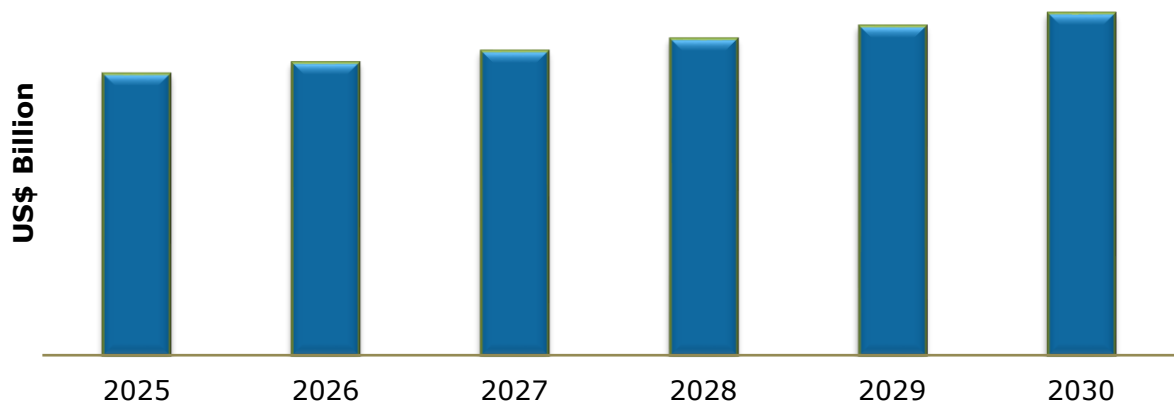
Product Type	CAGR	Share
	(202-30)	(2024)
Liver-on-a-chip	xx%	xx%
Organoids	xx%	xx%
Spheroids	xx%	xx%
3D Bio printed Tissues	xx%	xx%

Global Organoids 3D Human Liver Model Market by Value

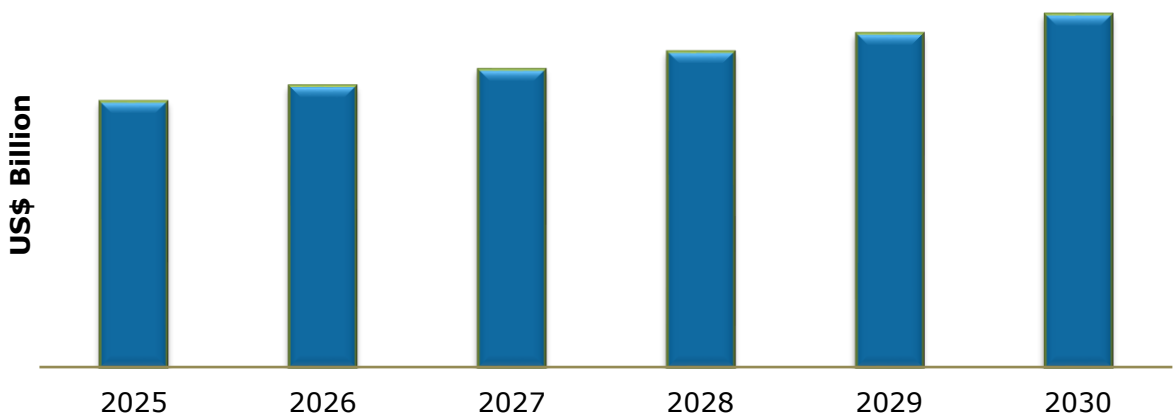


Global Human Liver Model Market: Application Analysis

Global ADME Studies Human Liver Model Market by Value



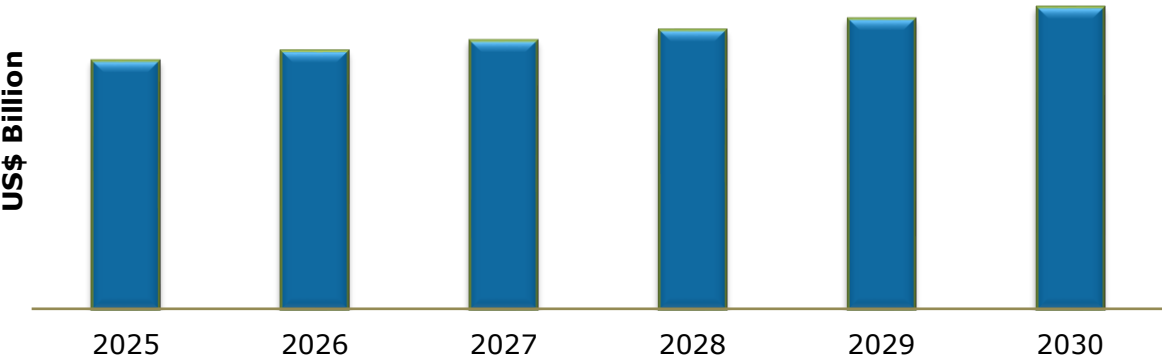
Global Toxicology Testing Human Liver Model Market by Value



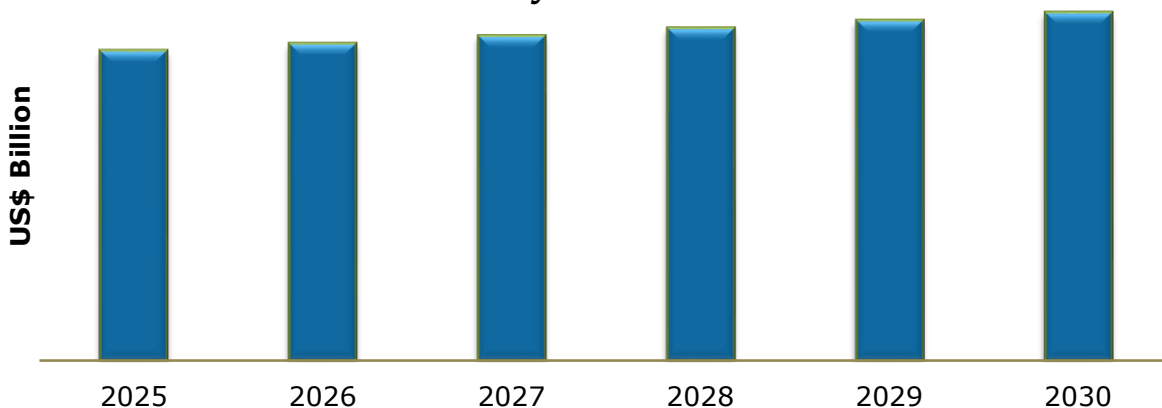
Application	CAGR
	(2025-30)
ADME Studies	xx%
Toxicology Testing	xx%
Disease Modeling	xx%
Others	xx%

Global Human Liver Model Market: End-use Analysis

Global Pharmaceutical & Biotechnology Companies Human Liver Model Market by Value



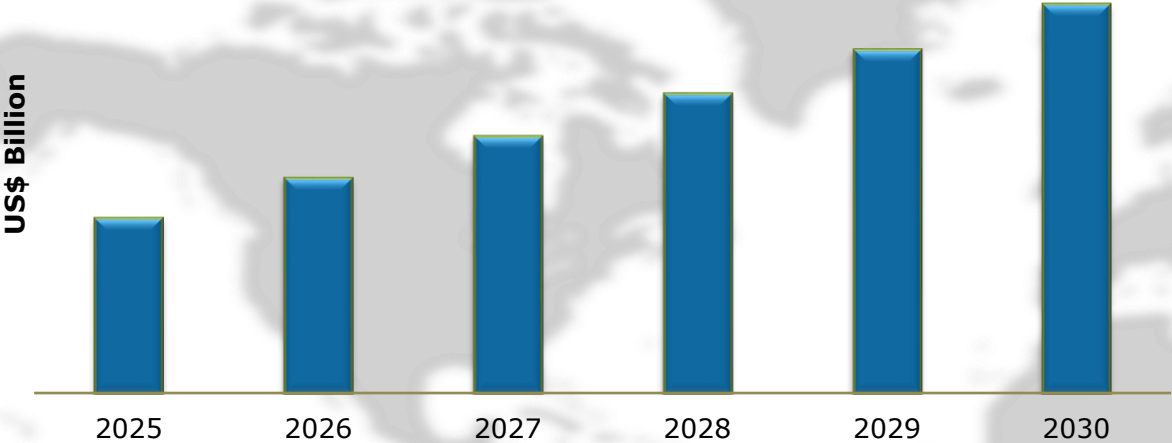
Global Contract Research Organizations Human Liver Model Market by Value



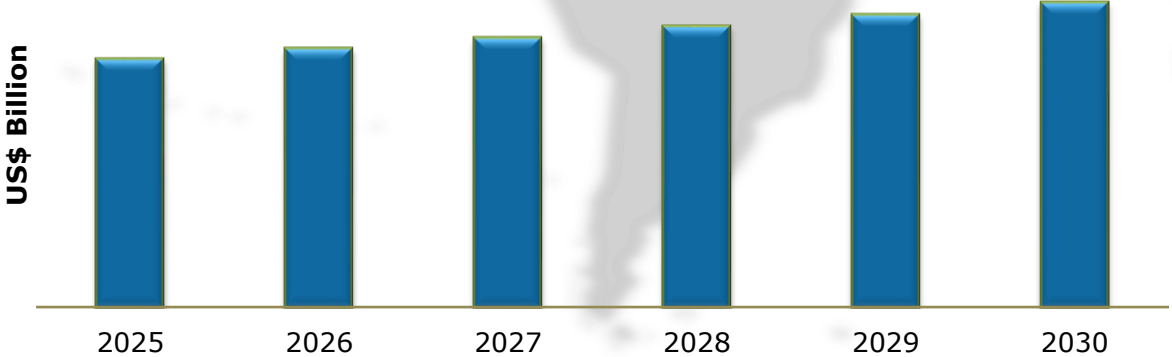
End-use	CAGR
	(2025-30)
Pharmaceutical & Biotechnology Companies	xx%
Contract Research Organizations	xx%
Academic & Research Institutes	xx%

Global Human Liver Model Market: Regional Analysis

North America Human Liver Model Market by Value



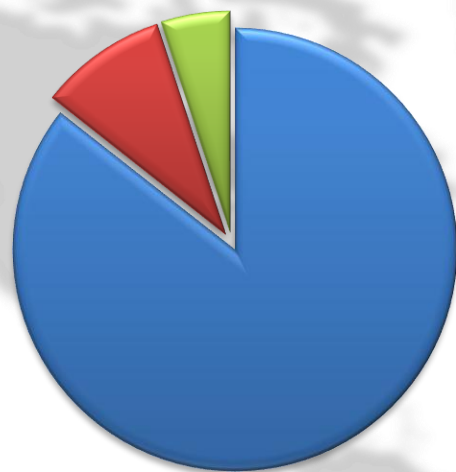
Asia Pacific Human Liver Model Market by Value



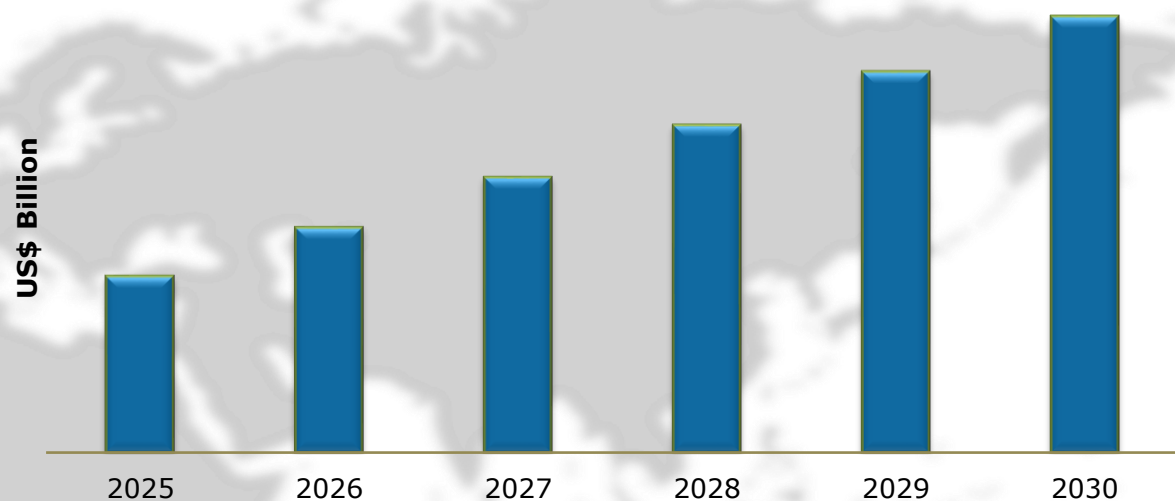
Region	CAGR
	(2025-30)
North America	xx%
Europe	xx%
Asia Pacific	xx%
Rest of the World	xx%

North America Human Liver Model Market: Analysis

North America Human Liver Model Market by Region; 2024



The US Human Liver Model Market by Value



Region	Share	CAGR
		(2025-30)
The US	xx%	xx%
Canada	xx%	xx%
Mexico	xx%	xx%

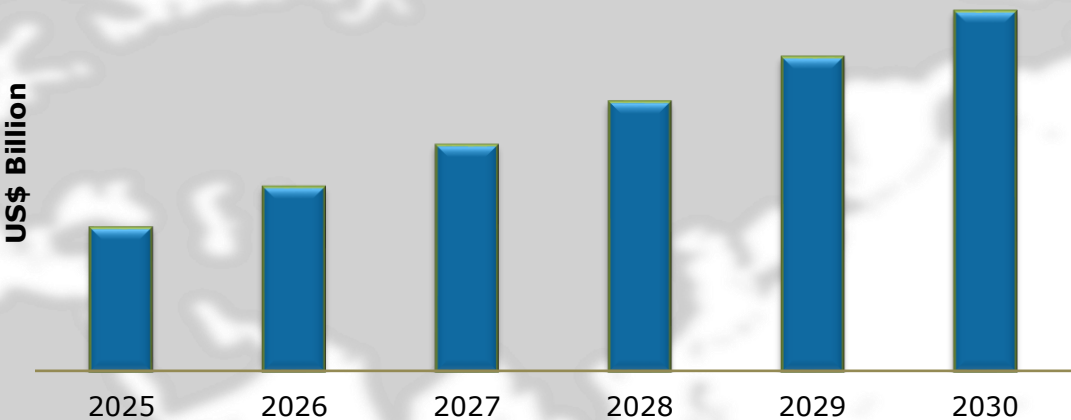
Europe Human Liver Model Market: Analysis

Europe Human Liver Model Market by Region; 2024



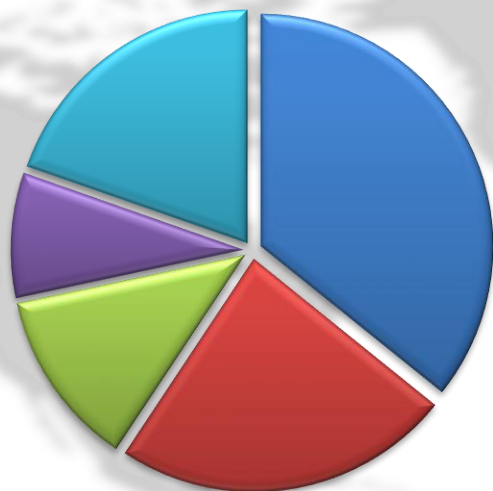
Region	Share	CAGR
		(2025-30)
Germany	xx%	xx%
UK	xx%	xx%
France	xx%	xx%
Italy	xx%	xx%
Spain	xx%	xx%
Rest of Europe	xx%	xx%

Germany Human Liver Model Market by Value

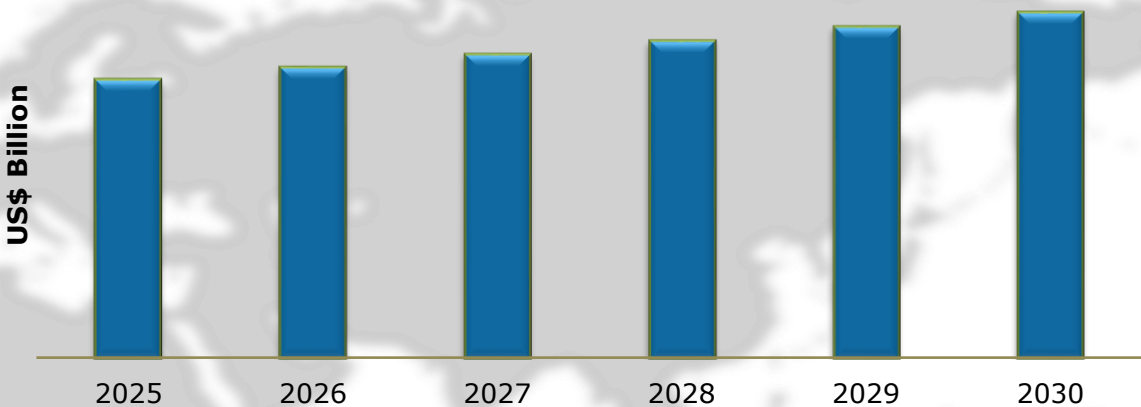


Asia Pacific Human Liver Model Market: Analysis

Asia Pacific Human Liver Model Market by Region; 2024

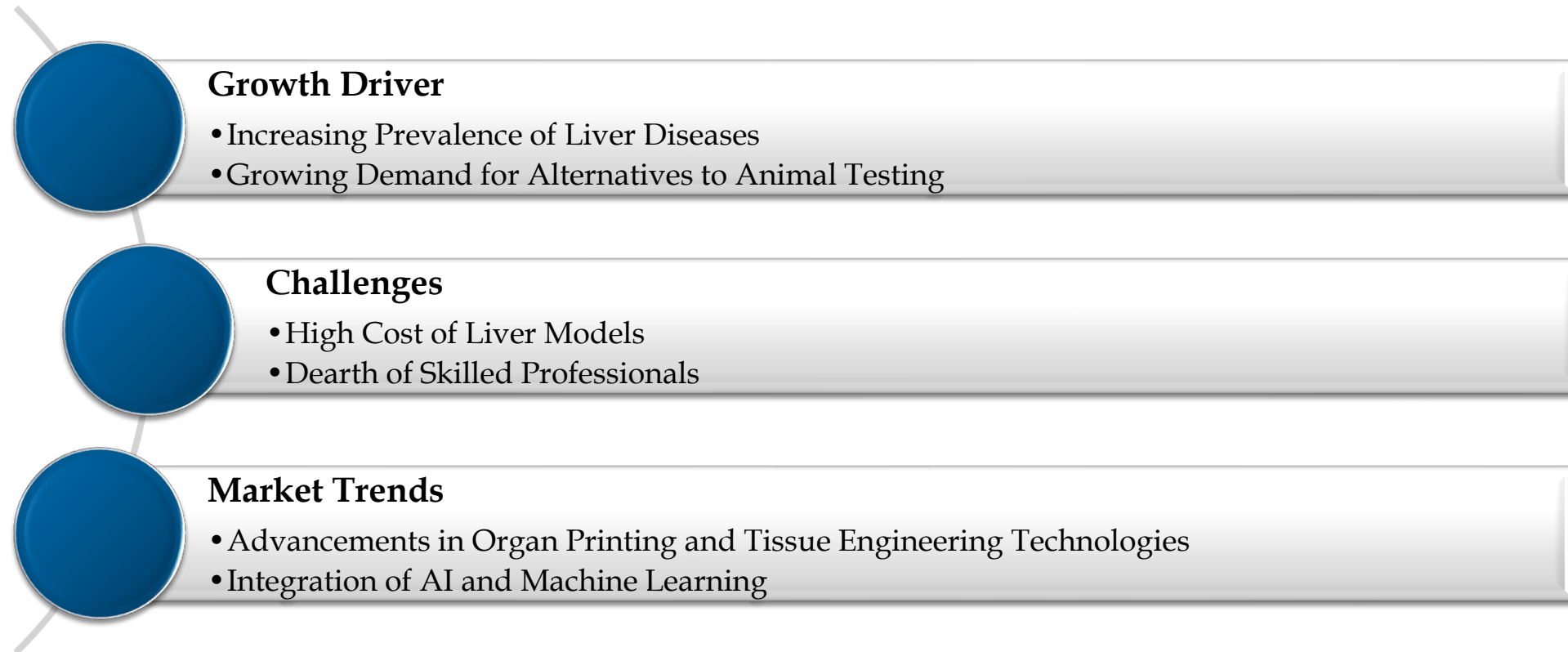


China Human Liver Model Market by Value



Region	Share	CAGR
		(2025-30)
China	xx%	xx%
India	xx%	xx%
Japan	xx%	xx%
South Korea	xx%	xx%
Rest of Asia Pacific	xx%	xx%

Global Human Liver Model Market: Dynamics



Global Human Liver Model Market: Competitive Landscape

Players Profiled

- Organovo Holdings
- InSphero
- BioIVT LLC
- Emulate Inc.
- MatTek
- Mimetas
- CN Bio Innovations Ltd.
- Cyfuse Biomedical KK
- Corning Incorporated
- Pheonix Bio
- Stemcell Technologies
- Pandorum Technologies
- Kirkstall Ltd