

Non-animal Alternative Testing Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2024 – 2032

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Abstracts

The Global Non-Animal Alternative Testing Market, valued at USD 1.8 billion in 2023, is projected to expand at a CAGR of 11.9% from 2024 to 2032. This growth is driven by rising investments and research grants advancing alternative testing methods.

Heightened ethical concerns surrounding animal testing, alongside regulatory initiatives from agencies such as the U.S. FDA and European Union, have accelerated the shift toward humane testing alternatives. These policies foster investment in innovative technologies that offer viable, ethical testing solutions. In recent years, technological advancements have allowed researchers to simulate human physiological responses with more accuracy than traditional animal testing methods.

These innovations transform drug development and safety testing, providing predictive insights into human biology. The market, categorized by product type, includes organ-on-chips, cell lines, and tissue models. Cell lines emerged as the leading segment in 2023, capturing a market value of USD 1.2 billion. These models have become invaluable in fields like drug efficacy and toxicity testing due to their adaptability in mimicking various human physiological functions.

Their capability for high-volume production also makes them a preferred choice for high throughput screening processes, ensuring consistent, reproducible results essential for regulatory and scientific validation. By technology, the non-animal alternative testing market segments into cell culture technology, high-throughput technology, molecular imaging, and omics. Cell culture technology led the market in 2023, with a 49.4% share, due to its capacity to grow and manipulate human cells in vitro, offering a more relevant biological model for studying diseases and drug responses. This technology not only enhances the reliability of test outcomes but also supports the scalable production of cell lines, streamlining the testing of vast numbers of compounds essential for drug discovery.

U.S. non-animal alternative testing market is expected to reach USD 1.9 billion by 2032, led by high public awareness and mounting ethical concerns over animal testing. In 2023, the U.S. accounted for the largest revenue share in North America, totaling USD 656.6 million. Public demand for humane research practices has prompted pharmaceutical companies to adopt non-animal testing, backed by robust funding and research grants, including contributions from the National Institutes of Health (NIH). This influx of funding is fueling both research and application of non-animal testing methods across sectors, supporting a sustainable transition away from animal-based models.

Contents

Report Content

CHAPTER 1 METHODOLOGY & SCOPE

- 1.1 Market scope & definition
- 1.2 Research design
 - 1.2.1 Research approach
 - 1.2.2 Data collection methods
- 1.3 Base estimates & calculations
 - 1.3.1 Base year calculation
 - 1.3.2 Key trends for market estimation
- 1.4 Forecast model
- 1.5 Primary research and validation
 - 1.5.1 Primary sources
 - 1.5.2 Data mining sources

CHAPTER 2 EXECUTIVE SUMMARY

- 2.1 Industry 360° synopsis

CHAPTER 3 INDUSTRY INSIGHTS

- 3.1 Industry ecosystem analysis
- 3.2 Industry impact forces
 - 3.2.1 Growth drivers
 - 3.2.1.1 Technological advances in drug development
 - 3.2.1.2 Growing investments and research grants for developing alternative technologies
 - 3.2.1.3 Increasing ban on using animal models for research purposes
 - 3.2.2 Industry pitfalls & challenges
 - 3.2.2.1 Stringent regulations related to safety, efficacy and quality
- 3.3 Growth potential analysis
- 3.4 Regulatory landscape
 - 3.4.1 U.S.
 - 3.4.2 Europe
- 3.5 Porter's analysis
- 3.6 PESTEL analysis

CHAPTER 4 COMPETITIVE LANDSCAPE, 2023

- 4.1 Introduction
- 4.2 Company matrix analysis
- 4.3 Competitive analysis of major market players cell line
- 4.4 Competitive analysis of major market players tissue line
- 4.5 Competitive analysis of major market players organ-on-chips
- 4.6 Competitive positioning matrix
- 4.7 Strategy dashboard
- 4.8 Strategy outlook matrix

CHAPTER 5 MARKET ESTIMATES AND FORECAST, BY PRODUCT TYPE, 2021 – 2032 (\$ MN)

- 5.1 Key trends
- 5.2 Organ-on-chips
- 5.3 Cell lines
- 5.4 Tissue lines

CHAPTER 6 MARKET ESTIMATES AND FORECAST, BY METHOD, 2021 – 2032 (\$ MN)

- 6.1 Key trends
- 6.2 Ex vivo testing
- 6.3 Computer modelling
- 6.4 Cellular assay
- 6.5 Biochemical assay

CHAPTER 7 MARKET ESTIMATES AND FORECAST, BY TECHNOLOGY, 2021 – 2032 (\$ MN)

- 7.1 Key trends
- 7.2 Cell culture technology
- 7.3 High throughput technology
- 7.4 Molecular imaging technology
- 7.5 Omics technology

CHAPTER 8 MARKET ESTIMATES AND FORECAST, BY APPLICATION, 2021 –

2032 (\$ MN)

- 8.1 Key trends
- 8.2 Infectious diseases
- 8.3 Immunological diseases
- 8.4 Oncology
- 8.5 Cardiovascular diseases
- 8.6 Diabetes
- 8.7 Genetic diseases
- 8.8 Neurological diseases

CHAPTER 9 MARKET ESTIMATES AND FORECAST, BY END USE, 2021 – 2032 (\$ MN)

- 9.1 Key trends
- 9.2 Pharmaceutical companies
- 9.3 Biotechnological companies
- 9.4 Research institutes and academics
- 9.5 CROs
- 9.6 Other End Use

CHAPTER 10 MARKET ESTIMATES AND FORECAST, BY REGION, 2021 – 2032 (\$ MN)

- 10.1 Key trends
- 10.2 North America
 - 10.2.1 U.S.
 - 10.2.2 Canada
- 10.3 Europe
 - 10.3.1 Germany
 - 10.3.2 UK
 - 10.3.3 France
 - 10.3.4 Italy
 - 10.3.5 Spain
- 10.4 Asia Pacific
 - 10.4.1 China
 - 10.4.2 Japan
 - 10.4.3 India
 - 10.4.4 Australia

- 10.4.5 South Korea
- 10.5 Latin America
 - 10.5.1 Brazil
 - 10.5.2 Mexico
- 10.6 Middle East and Africa
 - 10.6.1 South Africa
 - 10.6.2 Saudi Arabia

CHAPTER 11 COMPANY PROFILES

- 11.1 AlveoliX
- 11.2 BICO GROUP
- 11.3 CN Bio Innovations
- 11.4 Emulate
- 11.5 Hesperos
- 11.6 InSphero
- 11.7 Lonza Group
- 11.8 Merck
- 11.9 MIMETAS
- 11.10 Thermo Fisher Scientific
- 11.11 TissUse
- 11.12 VITROCELL Systems

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