

# **Rat Model Market Outlook 2025-2034: Market Share, and Growth Analysis By Type (Knockout, Outbred, Inbred, Hybrid, Immunodeficient, Conditioned), By Service (Cryopreservation, Breeding, Re-derivation, Genetic Testing, Quarantine Depending, Other Services), By Technology, By Application**

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## **Abstracts**

The Rat Model Market is valued at USD 2.2 billion in 2025 and is projected to grow at a CAGR of 7.7% to reach USD 4.3 billion by 2034.

### Market Overview

The rat model market is an essential component of preclinical research, playing a pivotal role in understanding human diseases and testing new therapeutics. Rats are commonly used in scientific studies due to their physiological similarities to humans, making them ideal subjects for experiments in various fields, including oncology, pharmacology, and neurology. These animal models help researchers explore disease mechanisms, test drug efficacy, and evaluate safety before human trials. The market for rat models is driven by the increasing demand for innovative treatments and the need for more effective preclinical testing methods. Rat models are widely used in pharmaceutical and biotechnology industries to accelerate drug discovery and development processes. Moreover, advancements in genetic engineering and the creation of genetically modified rat models have expanded their use in research. These models are now being employed for more specific studies, such as understanding genetic diseases, immunology, and cancer research. Despite their importance, the rat model market faces ethical concerns and regulations surrounding animal testing, which may restrict the use of these models in some regions. However, as long as they remain

crucial for scientific discovery, the demand for rat models will continue to grow. The rat model market experienced significant growth, fueled by the increasing number of pharmaceutical and biotech companies involved in drug discovery and development. The adoption of genetically modified rats to study specific diseases and test personalized treatments became more widespread, particularly in cancer and neurological research. Advancements in CRISPR-Cas9 and other gene-editing technologies allowed for more precise modifications in rat models, enabling the creation of more accurate disease models. This enhanced the ability to study complex diseases such as Alzheimer's, Parkinson's, and various forms of cancer. Additionally, the use of rat models in immunology and vaccine development saw an uptick, particularly in the wake of the COVID-19 pandemic, where preclinical testing was critical for vaccine and therapeutic development. The growing emphasis on precision medicine and the need for more tailored treatments further contributed to the demand for advanced rat models. However, the market also faced challenges, including regulatory hurdles surrounding animal testing, rising ethical concerns, and the push for alternative models, which sometimes slowed the adoption of rat models in research and development processes. The rat model market is expected to continue expanding, driven by innovations in genetic modification and a growing focus on personalized medicine. Advances in technology will enable researchers to create even more precise and disease-specific rat models, further enhancing the quality and relevance of preclinical research. With an increasing focus on genetic disorders, immunotherapy, and cancer research, rat models will remain indispensable for understanding disease mechanisms and testing new treatments. The integration of artificial intelligence and machine learning into drug discovery processes will also contribute to the growth of the market, as these technologies can help process vast amounts of data generated by studies involving rat models. However, challenges related to ethical concerns, animal welfare regulations, and the push for non-animal testing methods will continue to impact the market. The rat model market's future will depend on balancing the need for reliable preclinical testing with the growing demand for ethical and humane alternatives in research.

### Key Insights Rat Model Market

Increased adoption of genetically modified rat models to study complex diseases and test personalized treatments in fields like oncology and neurology.

Growth in precision medicine, driving demand for more tailored and accurate rat models to study genetic disorders and immunotherapy.

Advancements in gene-editing technologies such as CRISPR-Cas9, enhancing

the ability to create disease-specific rat models for targeted research.

Use of rat models in immunology and vaccine development, especially in response to global health crises like the COVID-19 pandemic.

Rising pressure for ethical research practices, pushing for the development of non-animal testing methods alongside traditional animal models.

Increasing investment in pharmaceutical and biotechnology sectors, driving the demand for preclinical research models such as rats.

Technological advancements in genetic modification and gene-editing technologies, enabling more precise and relevant disease models.

Growing demand for personalized medicine and precision therapies, necessitating the use of tailored rat models for drug discovery and testing.

Expansion of research in oncology, neurology, immunology, and vaccine development, further driving the need for reliable animal models.

Ethical concerns and stringent regulations surrounding animal testing, along with increasing pressure to develop non-animal alternatives, pose significant challenges to the growth of the rat model market.

## Rat Model Market Segmentation

### By Type

Knockout

Outbred

Inbred

Hybrid

Immunodeficient

Conditioned

### By Service

Cryopreservation

Breeding

Re-derivation

Genetic Testing

Quarantine Depending

Other Services

### By Technology

Nuclear Transferase

Microinjection

Embryonic Stem Cell

Other Technologies

### By Application

Oncology

Neurology

Immunology

Toxicology

Other Applications

## Key Companies Analysed

Genoway S.A.

Biomere

Transposagen Biopharmaceuticals Inc.

Horizon Discovery Group PLC

Transviragen Inc.

Charles River Laboratories International Inc.

Taconic Biosciences Inc.

Envigo Ltd.

Laboratory Corporation of America Holdings

Janvier Labs

Harlan Laboratories Inc.

Sage Path Labs

Applied StemCell Inc.

Regenera Pharma Ltd.

Cyagen Biosciences Inc.

Ozgene Pty Ltd

Yecuris Corporation

Hera BioLabs Inc.

Beijing Biocytogen Co. Ltd.

Ingenious Targeting Laboratory

InVivos Pte Ltd.

Kymab Limited

Mirimus Inc.

Pharmaron Beijing Co. Ltd.

PolyGene AG

Shanghai Model Organisms Center Inc.

Sino Biological Inc.

Synthego Corporation

Transgenic Inc.

ViGene Biosciences Inc.

Viva Biotech Holdings

WuXi AppTec Co. Ltd.

## Rat Model Market Analytics

The report employs rigorous tools, including Porter's Five Forces, value chain mapping, and scenario-based modeling, to assess supply–demand dynamics. Cross-sector influences from parent, derived, and substitute markets are evaluated to identify risks and opportunities. Trade and pricing analytics provide an up-to-date view of international flows, including leading exporters, importers, and regional price trends.

Macroeconomic indicators, policy frameworks such as carbon pricing and energy security strategies, and evolving consumer behavior are considered in forecasting scenarios. Recent deal flows, partnerships, and technology innovations are incorporated to assess their impact on future market performance.

### Rat Model Market Competitive Intelligence

The competitive landscape is mapped through OG Analysis' proprietary frameworks, profiling leading companies with details on business models, product portfolios, financial performance, and strategic initiatives. Key developments such as mergers & acquisitions, technology collaborations, investment inflows, and regional expansions are analyzed for their competitive impact. The report also identifies emerging players and innovative startups contributing to market disruption.

Regional insights highlight the most promising investment destinations, regulatory landscapes, and evolving partnerships across energy and industrial corridors.

### Countries Covered

North America — Rat Model market data and outlook to 2034

United States

Canada

Mexico

Europe — Rat Model market data and outlook to 2034

Germany

United Kingdom

France

Italy

Spain

BeNeLux

Russia

Sweden

Asia-Pacific — Rat Model market data and outlook to 2034

China

Japan

India

South Korea

Australia

Indonesia

Malaysia

Vietnam

Middle East and Africa — Rat Model market data and outlook to 2034

Saudi Arabia

South Africa

Iran

UAE

Egypt

South and Central America — Rat Model market data and outlook to 2034

Brazil

Argentina

Chile

Peru

*\* We can include data and analysis of additional countries on demand.*

## Research Methodology

This study combines primary inputs from industry experts across the Rat Model value chain with secondary data from associations, government publications, trade databases, and company disclosures. Proprietary modeling techniques, including data triangulation, statistical correlation, and scenario planning, are applied to deliver reliable market sizing and forecasting.

## Key Questions Addressed

What is the current and forecast market size of the Rat Model industry at global, regional, and country levels?

Which types, applications, and technologies present the highest growth potential?

How are supply chains adapting to geopolitical and economic shocks?

What role do policy frameworks, trade flows, and sustainability targets play in shaping demand?

Who are the leading players, and how are their strategies evolving in the face of global uncertainty?

Which regional “hotspots” and customer segments will outpace the market, and what go-to-market and partnership models best support entry and expansion?

Where are the most investable opportunities—across technology roadmaps, sustainability-linked innovation, and M&A—and what is the best segment to

invest over the next 3–5 years?

## Your Key Takeaways from the Rat Model Market Report

Global Rat Model market size and growth projections (CAGR), 2024-2034

Impact of Russia-Ukraine, Israel-Palestine, and Hamas conflicts on Rat Model trade, costs, and supply chains

Rat Model market size, share, and outlook across 5 regions and 27 countries, 2023-2034

Rat Model market size, CAGR, and market share of key products, applications, and end-user verticals, 2023-2034

Short- and long-term Rat Model market trends, drivers, restraints, and opportunities

Porter's Five Forces analysis, technological developments, and Rat Model supply chain analysis

Rat Model trade analysis, Rat Model market price analysis, and Rat Model supply/demand dynamics

Profiles of 5 leading companies—overview, key strategies, financials, and products

Latest Rat Model market news and developments

## Additional Support

With the purchase of this report, you will receive

An updated PDF report and an MS Excel data workbook containing all market tables and figures for easy analysis.

7-day post-sale analyst support for clarifications and in-scope supplementary

data, ensuring the deliverable aligns precisely with your requirements.

Complimentary report update to incorporate the latest available data and the impact of recent market developments.

*\* The updated report will be delivered within 3 working days*

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