

Global ADME Toxicology Testing Market - Technologies, Methods and Applications

Market Report | 2025-06-05 | 269 pages | Industry Experts

AVAILABLE LICENSES:

- Single user licence (PDF) \$4500.00
- Enterprise Electronic (PDF) \$7200.00

Report description:

Global ADME Toxicology Testing Market Trends and Outlook

Absorption, Distribution, Metabolism, and Excretion (ADME) toxicology testing plays a vital role in drug development by evaluating how substances are absorbed, distributed, metabolized, and eliminated from the body, along with their potential toxic effects. These pharmacokinetic and toxicokinetic processes affect drug concentration, tissue exposure, safety, and effectiveness. The main goal of ADME testing is to deliver essential information regarding absorption rates, distribution in tissues, metabolism, elimination routes, and toxicity, thereby supporting early drug development, preclinical safety evaluations, and risk management. With the increasing demand for safer and more effective medications and stricter regulatory standards, pharmaceutical companies heavily depend on ADME testing to estimate drug behavior and toxicity, mitigate late-stage drug failures, and expedite drug discovery.

Global market size for ADME Toxicology Testing is estimated at US\$6.3 billion in 2024 and is projected to reach US\$11.2 billion by 2030, with a CAGR of 10.13% during the forecast period 2024-2030. The global ADME toxicology testing market is experiencing rapid growth, fueled by the rising rates of drug failures in late-stage clinical trials, the growing demand for innovative and personalized therapies, and more stringent regulatory conditions worldwide. With the pharmaceutical industry expanding, particularly in the Asia-Pacific region, and a global need for safe, effective, and rising affordable treatments, the ADME toxicology testing market is poised for significant growth in the coming years.

ADME Toxicology Testing Regional Market Analysis

North America dominates the global ADME toxicology testing market with a 43.7% share in 2024, owing to its advanced healthcare infrastructure, strict FDA regulations, and substantial investment in R&D. The presence of leading pharmaceutical companies and contract research organizations (CROs), along with early adoption of high-throughput screening, in silico modeling, and AI-driven platforms, bolsters its market leadership. The emphasis on reducing late-stage drug failures and the rising demand for personalized medicine further drives market growth. Conversely, the Asia-Pacific region is experiencing the fastest growth, anticipated to grow at a CAGR of 12.3% from 2024 to 2030. This growth is fueled by increased pharmaceutical R&D, supportive government policies, and enhanced regulatory oversight in countries such as China and India. The region benefits from its

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

improving healthcare infrastructure, a rising prevalence of chronic diseases, and an increasing outsourcing by global pharmaceutical companies. The integration of automated and high-throughput technologies, along with reduced costs for drug development, positions the Asia-Pacific region as a vital player in the expansion of the global market.

ADME Toxicology Testing Market Analysis by Technology

Cell culture technology leads the ADME toxicology testing market, capturing a 42.6% market share in 2024 due to its ability to closely replicate human physiological conditions. Innovative solutions such as 3D cell cultures, organ-on-chip technologies, and fluorometric imaging assays enhance predictive precision, minimize reliance on animal testing, and speed up the drug development process. The integration of AI and machine learning enhances efficiency and decision-making, while Ultra ADME testing supports the shift from 2D to 3D systems. This segment's growth is driven by automated platforms, expanded chemical libraries, and molecular imaging and biochemical testing for thorough analysis of drug interactions. Meanwhile, the High-Throughput Screening (HTS) segment is projected to record the fastest growth rate at a CAGR of 11.7% from 2024 to 2030, owing to its capability to quickly assess extensive compound libraries during the early stages of drug discovery. By automating toxicity evaluations and cellular response assessments, HTS accelerates the process of hit-to-lead conversion, lowers costs and development time, and improves overall efficiency in drug development.

ADME Toxicology Testing Market Analysis by Method

In 2024, the cellular assay segment dominates the ADME toxicology testing market by method with a 44.6% share, due to its provision of real-time, high-throughput data on drug metabolism, toxicity, and cellular responses. This method enables the rapid evaluation of numerous compounds, improving the selection of drug candidates at an early stage while lowering the risk of late-stage failures. Its precision, dependability, and synergy with high-throughput technologies have led to its widespread use in pharmaceutical research. Innovations in cell culture and imaging techniques, along with ethical issues surrounding animal testing, further bolster the growth of this segment. Cellular assays accurately simulate human biological reactions, connecting laboratory experiments with clinical trials while reducing potential risks. On the other hand, the in silico testing segment is the fastest-growing, projected to expand at an 11.8% CAGR over 2024 to 2030, driven by advancements in computational technologies and artificial intelligence. This cost-effective approach speeds up drug discovery by employing predictive modeling and machine learning to identify possible drug failures earlier, thus cutting down on time and expenses. Increasing regulatory acceptance and enhanced software capabilities are driving the adoption of in silico methods, establishing them as essential tools in contemporary toxicology testing.

ADME Toxicology Testing Market Analysis by Application

In 2024, systemic toxicity leads the ADME toxicology testing market with a 49.4% share, driven by its essential role in assessing drug effects across multiple organs. The need for comprehensive safety assessments driven by regulatory requirements increases the demand for precise early-stage testing. Advances in cell culture techniques and high-throughput screening methods have improved the efficiency and accuracy of testing. Systemic toxicity evaluations are vital for identifying long-term toxic impacts, particularly in cardiology, renal, and hepatotoxicity, making them critical for fulfilling regulatory requirements and reducing the risk of drug failures in later stages. In contrast, the renal toxicity segment is anticipated to register the fastest growth with a CAGR of 11.9%, propelled by increased awareness of adverse drug reactions associated with kidney function. Innovations in molecular imaging technologies, in vitro assays, and AI-driven predictive modeling are advancing the early identification of nephrotoxicity, promoting its inclusion in drug development processes. This expansion underscores a growing emphasis on averting expensive failures and promoting safer therapeutic options.

ADME Toxicology Testing Market Report Scope

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

This global report on ADME Toxicology Testing analyzes the market based on technology, method, and applications for the period 2021-2030 with projection from 2024 to 2030 in terms of value in US\$. In addition to providing profiles of major companies operating in this space, the latest corporate and industrial developments have been covered to offer a clear panorama of how and where the market is progressing.

Key Metrics

Historical Period: 2021-2023

Base Year: 2024

Forecast Period: 2024-2030

Units: Value market in US\$

Companies Mentioned: 13

ADME Toxicology Testing Market by Geographic Region

- North America (The United States, Canada, and Mexico)
- Europe (Germany, France, the United Kingdom, Italy, Spain, and Rest of Europe)
- Asia-Pacific (Japan, China, India, South Korea, and Rest of Asia-Pacific)
- South America (Brazil, Argentina, and Rest of South America)
- Rest of World

ADME Toxicology Testing Market by Technology

- Cell Culture
- High-Throughput Screening (HTS)
- Molecular Imaging
- OMICS Technology

ADME Toxicology Testing Market by Method

- Cellular Assay
- Biochemical Assay
- In Silico
- Ex vivo

ADME Toxicology Testing Market by Application

- Systemic Toxicity
- Renal Toxicity
- Hepatotoxicity
- Neurotoxicity
- Other Applications (Including Respiratory, Cardiovascular, Reproductive, Skin and other toxicities)

Table of Contents:

PART A: GLOBAL MARKET PERSPECTIVE

1. INTRODUCTION

- Product Outline
- ADME Toxicology Testing Defined
- Respiratory Care Device Technologies
 - o□Cell Culture
 - o□High-Throughput Screening (HTS)

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- o□Molecular Imaging
- o□OMICS Technology
- Respiratory Care Device Methods
- o□Cellular Assay
- o□Biochemical Assay
- o□In Silico
- o□Ex vivo
- Respiratory Care Device Applications
- o□Systemic Toxicity
- o□Renal Toxicity
- o□Hepatotoxicity
- o□Neurotoxicity
- o□Other Applications (Including Respiratory, Cardiovascular, Reproductive, Skin and other toxicities)

2. Key Market Trends

3. Key Global Players

4. Key Business & Technology Trends

5. Global Market Overview

- Global ADME Toxicology Testing Market Overview by Technology
- o□ADME Toxicology Testing Technology Market Overview by Global Region
- Cell Culture
- High-Throughput Screening (HTS)
- Molecular Imaging
- OMICS Technology
- Global ADME Toxicology Testing Market Overview by Method
- o□ADME Toxicology Testing Method Market Overview by Global Region
- Cellular Assay
- Biochemical Assay
- In Silico
- Ex vivo
- Global ADME Toxicology Testing Market Overview by Application
- o□ADME Toxicology Testing Application Market Overview by Global Region
- Systemic Toxicity
- Renal Toxicity
- Hepatotoxicity
- Neurotoxicity
- Other Applications

PART B: REGIONAL MARKET PERSPECTIVE

Global ADME Toxicology Testing Market Overview by Geographic Region

REGIONAL MARKET OVERVIEW

6. North America

- North American ADME Toxicology Testing Market Overview by Geographic Region
- North American ADME Toxicology Testing Market Overview by Technology
- North American ADME Toxicology Testing Market Overview by Method
- North American ADME Toxicology Testing Market Overview by Application
- Country-wise Analysis of North American ADME Toxicology Testing Market
- o□The United States
- United States ADME Toxicology Testing Market Overview by Technology

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- [] United States ADME Toxicology Testing Market Overview by Method
- [] United States ADME Toxicology Testing Market Overview by Application
- o [] Canada
 - [] Canadian ADME Toxicology Testing Market Overview by Technology
 - [] Canadian ADME Toxicology Testing Market Overview by Method
 - [] Canadian ADME Toxicology Testing Market Overview by Application
- o [] Mexico
 - [] Mexican ADME Toxicology Testing Market Overview by Technology
 - [] Mexican ADME Toxicology Testing Market Overview by Method
 - [] Mexican ADME Toxicology Testing Market Overview by Application

7. Europe

- [] European ADME Toxicology Testing Market Overview by Geographic Region
- [] European ADME Toxicology Testing Market Overview by Technology
- [] European ADME Toxicology Testing Market Overview by Method
- [] European ADME Toxicology Testing Market Overview by Application
- [] Country-wise Analysis of European ADME Toxicology Testing Market
- o [] Germany
 - [] German ADME Toxicology Testing Market Overview by Technology
 - [] German ADME Toxicology Testing Market Overview by Method
 - [] German ADME Toxicology Testing Market Overview by Application
- o [] France
 - [] French ADME Toxicology Testing Market Overview by Technology
 - [] French ADME Toxicology Testing Market Overview by Method
 - [] French ADME Toxicology Testing Market Overview by Application
- o [] The United Kingdom
 - [] United Kingdom ADME Toxicology Testing Market Overview by Technology
 - [] United Kingdom ADME Toxicology Testing Market Overview by Method
 - [] United Kingdom ADME Toxicology Testing Market Overview by Application
- o [] Italy
 - [] Italian ADME Toxicology Testing Market Overview by Technology
 - [] Italian ADME Toxicology Testing Market Overview by Method
 - [] Italian ADME Toxicology Testing Market Overview by Application
- o [] Spain
 - [] Spanish ADME Toxicology Testing Market Overview by Technology
 - [] Spanish ADME Toxicology Testing Market Overview by Method
 - [] Spanish ADME Toxicology Testing Market Overview by Application
- o [] Rest of Europe
 - [] Rest of Europe ADME Toxicology Testing Market Overview by Technology
 - [] Rest of Europe ADME Toxicology Testing Market Overview by Method
 - [] Rest of Europe ADME Toxicology Testing Market Overview by Application

8. Asia-Pacific

- [] Asia-Pacific ADME Toxicology Testing Market Overview by Geographic Region
- [] Asia-Pacific ADME Toxicology Testing Market Overview by Technology
- [] Asia-Pacific ADME Toxicology Testing Market Overview by Method
- [] Asia-Pacific ADME Toxicology Testing Market Overview by Application
- [] Country-wise Analysis of Asia-Pacific ADME Toxicology Testing Market
- o [] Japan

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- [] Japanese ADME Toxicology Testing Market Overview by Technology
- [] Japanese ADME Toxicology Testing Market Overview by Method
- [] Japanese ADME Toxicology Testing Market Overview by Application
- o [] China
- [] Chinese ADME Toxicology Testing Market Overview by Technology
- [] Chinese ADME Toxicology Testing Market Overview by Method
- [] Chinese ADME Toxicology Testing Market Overview by Application
- o [] India
- [] Indian ADME Toxicology Testing Market Overview by Technology
- [] Indian ADME Toxicology Testing Market Overview by Method
- [] Indian ADME Toxicology Testing Market Overview by Application
- o [] South Korea
- [] South Korean ADME Toxicology Testing Market Overview by Technology
- [] South Korean ADME Toxicology Testing Market Overview by Method
- [] South Korean ADME Toxicology Testing Market Overview by Application
- o [] Rest of Asia-Pacific
- [] Rest of Asia-Pacific ADME Toxicology Testing Market Overview by Technology
- [] Rest of Asia-Pacific ADME Toxicology Testing Market Overview by Method
- [] Rest of Asia-Pacific ADME Toxicology Testing Market Overview by Application
- 9. South America
- [] South American ADME Toxicology Testing Market Overview by Geographic Region
- [] South American ADME Toxicology Testing Market Overview by Technology
- [] South American ADME Toxicology Testing Market Overview by Method
- [] South American ADME Toxicology Testing Market Overview by Application
- [] Country-wise Analysis of Asia-Pacific ADME Toxicology Testing Market
- o [] Brazil
- [] Brazilian ADME Toxicology Testing Market Overview by Technology
- [] Brazilian ADME Toxicology Testing Market Overview by Method
- [] Brazilian ADME Toxicology Testing Market Overview by Application
- o [] Argentina
- [] Argentine ADME Toxicology Testing Market Overview by Technology
- [] Argentine ADME Toxicology Testing Market Overview by Method
- [] Argentine ADME Toxicology Testing Market Overview by Application
- o [] Rest of South America
- [] Rest of South American ADME Toxicology Testing Market Overview by Technology
- [] Rest of South American ADME Toxicology Testing Market Overview by Method
- [] Rest of South American ADME Toxicology Testing Market Overview by Application
- 10. Rest of World
- [] Rest of World ADME Toxicology Testing Market Overview by Technology
- [] Rest of World ADME Toxicology Testing Market Overview by Method
- [] Rest of World ADME Toxicology Testing Market Overview by Application

PART C: GUIDE TO THE INDUSTRY

PART D: ANNEXURE

1. RESEARCH METHODOLOGY
2. FEEDBACK

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Global ADME Toxicology Testing Market - Technologies, Methods and Applications

Market Report | 2025-06-05 | 269 pages | Industry Experts

To place an Order with Scotts International:

- Print this form
- Complete the relevant blank fields and sign
- Send as a scanned email to support@scott's-international.com

ORDER FORM:

Select license	License	Price
	Single user licence (PDF)	\$4500.00
	Enterprise Electronic (PDF)	\$7200.00
		VAT
		Total

*Please circle the relevant license option. For any questions please contact support@scott's-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*	<input type="text"/>	Phone*	<input type="text"/>
First Name*	<input type="text"/>	Last Name*	<input type="text"/>
Job title*	<input type="text"/>		
Company Name*	<input type="text"/>	EU Vat / Tax ID / NIP number*	<input type="text"/>
Address*	<input type="text"/>	City*	<input type="text"/>
Zip Code*	<input type="text"/>	Country*	<input type="text"/>
		Date	<input type="text" value="2026-02-22"/>
		Signature	<input type="text"/>

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scott's-international.com

www.scott's-international.com