

# Early Toxicology: Markets and Approaches

<https://marketpublishers.com/r/E910C1E504FEN.html>

Date: September 2012

Pages: 180

Price: US\$ 3,995.00 (Single User License)

ID: E910C1E504FEN

## Abstracts

Early toxicology testing is emerging as one of the most significant areas of drug discovery. Toxicity is no longer something that can be left to the development stage, or just a small part of ADMET. Toxicity determinations are an integral part of all aspects of drug discovery & development.

This report, **Early Toxicology Markets and Approaches**, focuses on markets for early toxicology testing services. The objective of this report is to focus the reader's attention on the issues and opportunities related to early toxicology testing in drug discovery. It begins with an overview of drug discovery, ADMET, and early toxicology testing. It continues with some of the ways big pharmaceutical developers deal with early toxicology. Several areas are covered, including:

For the purposes of reporting market size and growth forecasts, the report segments the market into the following:

In Silico Approaches

Databases

Data Mining Tools

Modeling

In Vitro Assays and Platforms

Biochemical Assays

Cellular Assays

Instruments & Platforms

In Vivo Testing  
Mice & Traditional Animals

Zebrafish Models

Other Animals

Human Microdosing

Early Tox Services  
In Silico Services

In Vitro Services

In Vivo Services

Market analysis in this report considers primarily the availability of products, number and type of clinical trials active, primary endpoints, and development of new products. The market focuses on the United States region and, where available, discusses the market globally. All sales are displayed at the manufacturers' level in U.S. dollars. Although the sales figures are displayed at the manufacturers' level, in many instances, this figure represents a close comparison to the retail level as many end users are purchasing directly from the manufacturer. The base year is 2011, with forecasts provided for each year through 2016.

Early toxicology is done not only to discover problem compounds, but provide directions for compound development. Early toxicology gives more than just a yes/no answer. It provides predictions of how the compound will interact with cells, tissues, organs, systems, and the whole human. It can also show how a cell responds to a candidate compound. Various in vivo, in vitro, and in silico approaches have been evolving ever since. The objective of this report is to focus the reader's attention on the issues and opportunities related to early tox testing in drug discovery, including:

Market Size of Segments and Subsegments within Toxicology

Forecasts of Expected Future Revenue Growth

Review of R&D Spending Trends

Discussion of Various Big Pharma Approaches to Early Toxicology Testing

Consideration of Emerging Tools and Techniques

Revenues of Top Toxicology Service Companies

The Views of Interviewed Experts in the Field

The Key Competitors and their Product and Service Offerings.

At first glance, drug discovery can appear to be a straightforward process of screening compound candidates, optimizing leads, performing pre-clinical evaluations and then, with these steps completed, clinical trials can begin. The reality is not so neat. These activities often overlap, merge, and conflict with each other. So ADME (Absorption, Distribution, Metabolism, Excretion) and Toxicology are not simply a step in lead optimization, they are actually an integral part of an ongoing process.

The report begins with an overview of drug discovery, ADMET, and early tox testing. It continues with some of the ways big pharma deal with early tox. The next four chapters deal with the markets for in-silico, in-vitro, and in-vivo early tox products, and with the suppliers of early tox services. Product, company and market information are provided in each of these chapters. Opinions of the experts on basic issues are provided in Chapter Seven. The report concludes with profiles of 30 representative suppliers, the products they provide and their approach to the market.

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