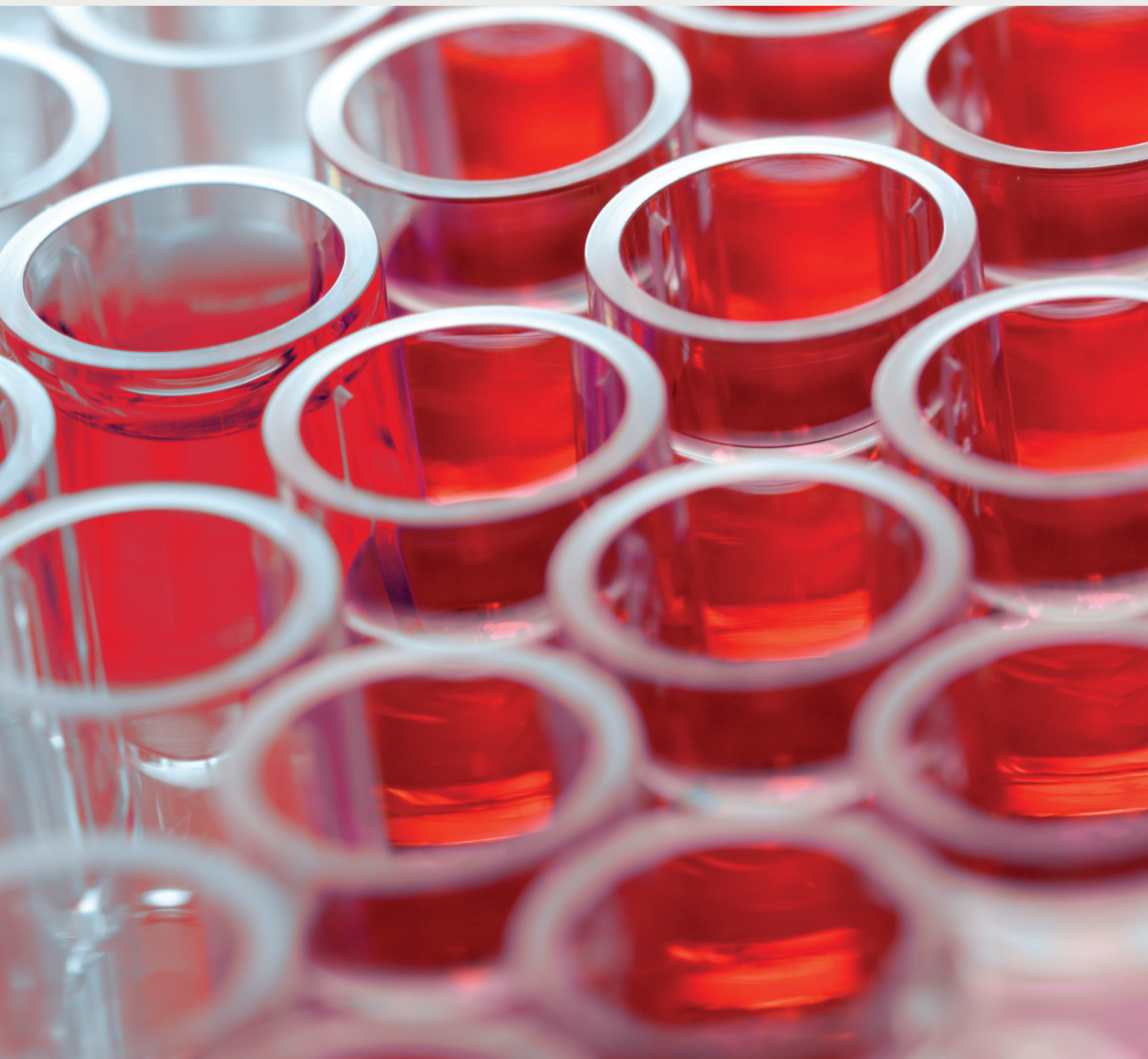




# Predictive Toxicology

Innovative Solutions for  
Early Safety Assessment



[enzolifesciences.com](http://enzolifesciences.com)

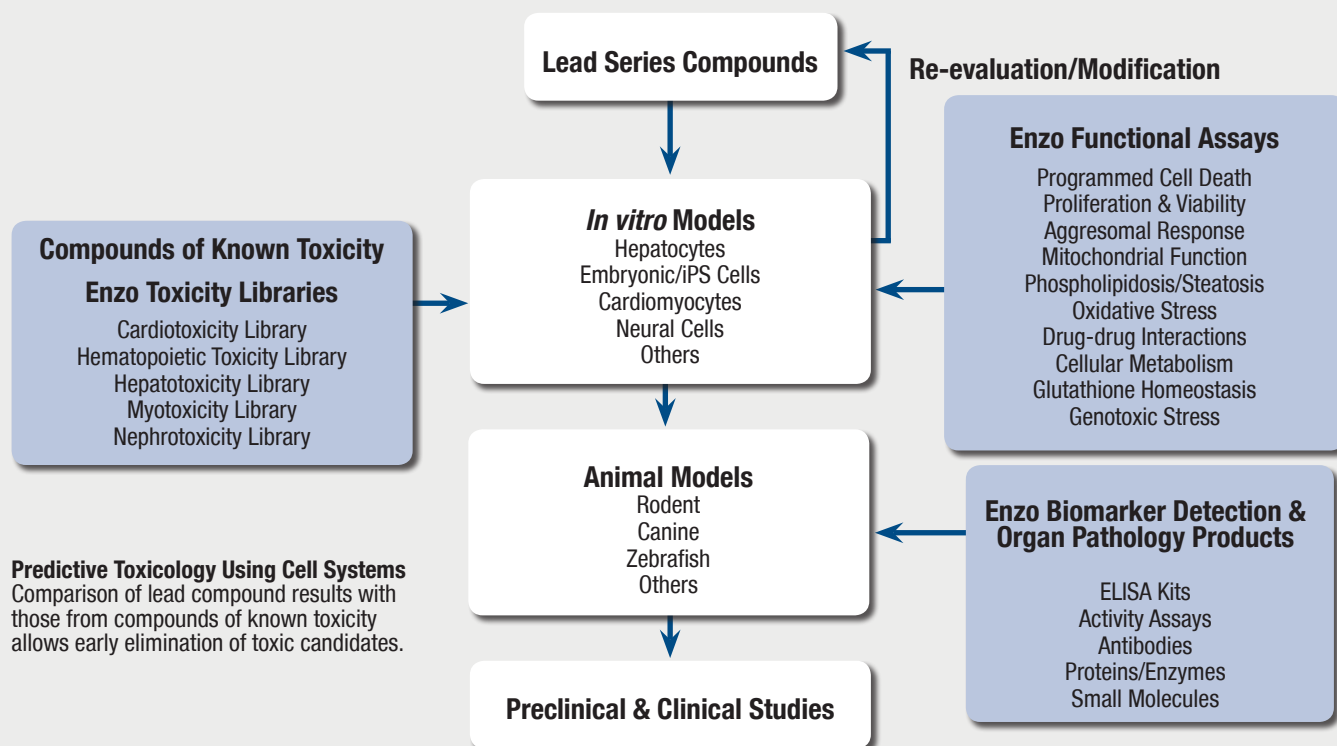


FIND YOUR TOXICOLOGY SOLUTION

# SOLUTIONS FOR PREDICTIVE TOXICOLOGY

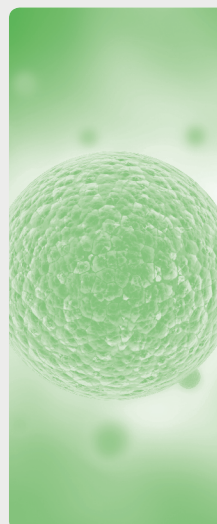
## Enabling a Data-Driven Approach

The drug development industry has undertaken significant efforts to identify toxic events at the earliest opportunity during the development process, moving from predominantly long-term, disease-specific observational models to a more predictive model focused on target-specific, mechanism-based biological investigations. The growth in such early safety assessment initiatives has driven the need for reliable, cost-effective, high throughput *in vitro* toxicity assays capable of predicting toxic liabilities prior to investment in more costly pre-clinical and clinical trials.



**Predictive Toxicology Using Cell Systems**  
Comparison of lead compound results with those from compounds of known toxicity allows early elimination of toxic candidates.

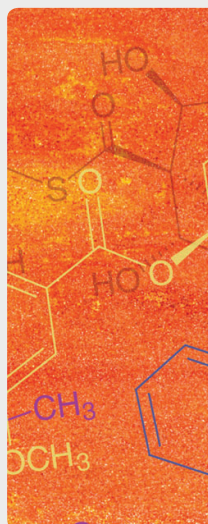
Through our broad range of scientific expertise and industry-proven manufacturing capabilities, Enzo Life Sciences provides a comprehensive set of solutions for the toxicology market, including cell-based assays and focused compound libraries, as well as assay kits and reagents for biomarker detection and pathway analysis.



### Cell-Based Assays & Biomarker Detection

Enzo's panel of fluorescence-based live cell assays are designed to assess the impact of toxic agents on overall cell function, with particular emphasis on the plasma membrane, lysosomal, mitochondrial and nuclear compartments. Many of the assays have been optimized for analysis by flow cytometry, while others are geared towards microplate-based cytometry.

Our portfolio of over 300 ELISA & detection kits includes sensitive, specific assays for relevant markers of cell viability, signaling pathways, and organ-specific toxicity. Over 40 years of assay development experience and state-of-the-art manufacturing facilities ensure time-tested reproducibility.



### Compound Libraries

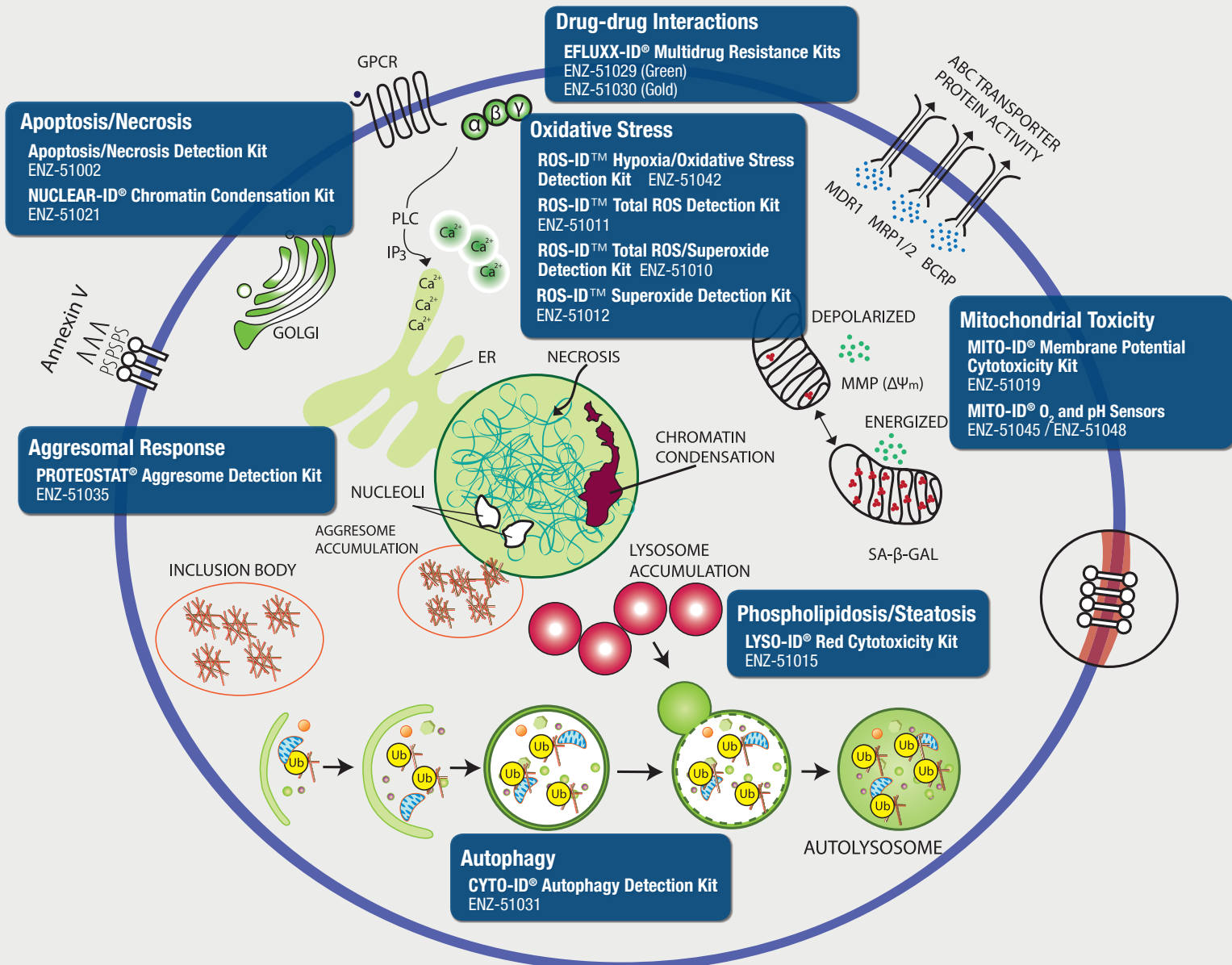
Our long-standing, flagship SCREEN-WELL® Compound Library product family offers an easy, ready-to-use method to streamline compound screening. We have a unique offering of focused compound libraries for organ-specific toxicology, as well as FDA approved drugs, natural products, chemical genomics, pathway targeting, and more.

Our in-house chemical production capabilities, combined with our supplier network built over a 40 year history, gives us the ability to rapidly and inexpensively source traditional, custom, and bulk compounds in the gram to kilogram scale. We complete our sourcing using stringent quality control standards with state-of-the-art methods.

# VISUALIZE TOXIC EVENTS *IN VITRO*

## CELLESTIAL® Assay Kits

Our fluorescence-based live cell assays and probes are designed to help assess the impact of toxic agents on overall cell function, and have been developed to produce dyes that are sensitive, specific, and convenient. CELLESTIAL® Assay Kits offer increased photostability, reduce false positives by eliminating non-specific dye-associated artifacts, and are compatible with common dyes and fluorescent markers for multiplex analysis. These optimized dyes are for the most demanding imaging applications, including microplate-based high content screening, flow cytometry, confocal microscopy, and wide-field fluorescence microscopy.



## Additional Cell Analysis Assays

### Programmed Cell Death

Comet SCGE Assay Kit  
 Cytochrome C, p53, Survivin & Bcl-2 ELISAs  
 p62 & NBR1 ELISAs

### Genotoxic Stress

aCGH Labeling Kits  
 BIOARRAY™ RNA Expression Analysis Kits  
 DNA Damage (8-OHdG) ELISA

### Cell Viability & Proliferation

ApoSENSOR™ Cell Viability Assay Kit  
 Cell Counting Kit-8  
 CYTO-ID® Long-term Tracer Kits  
 NUCLEAR-ID® Cell Viability/Cell Cycle Kits  
 p21 & p27<sup>kip1</sup> ELISAs

### Oxidative Stress

Heme Oxygenase ELISAs  
 ROS-ID™ NO Detection Kits  
 ROS-ID™ ROS/RNS Detection Kit

# PROFILE ORGAN-SPECIFIC TOXICITY

## SCREEN-WELL® Toxicity Libraries

The SCREEN-WELL® Libraries for cardiotoxicity, hepatotoxicity, hematopoietic toxicity, myotoxicity, and nephrotoxicity contain compounds with defined and diverse organ-associated toxicity profiles. A variety of structurally and mechanistically different compound classes are included, as well as non-toxic controls. Compounds are dissolved in DMSO at 10mM and aliquoted into deep-well plates at 100 or 500 µl per well. The libraries are useful for predictive toxicology screening, including high-content protocols.

- Better understand mechanisms of toxicity with your small molecule or candidate-drug of interest
- Compare your compound with known references for investigative toxicity
- Optimize formulation efficacy and safety

PRODUCT	COMPOUNDS	MAJOR TOXICITY CATEGORIES INCLUDED
<b>Cardiotoxicity Library</b> BML-2850	130	Ion channel blockage, cardiomyocyte apoptosis, mitochondrial toxicity, thrombosis, arrhythmia, hypotension/hypertension, fibrosis & carditis, non-cardiotoxic controls
<b>Hepatotoxicity Library</b> BML-2851	238	Steatosis, cholestatic effects, mitochondrial toxicity, CYP450 inactivation, toxic metabolites, Mallory body formation, elevation of liver enzymes, non-hepatotoxic controls
<b>Hematopoietic Toxicity Library</b> BML-2852	115	Myelosuppression, leukopenia, neutropenia, anemia, thrombocytopenia, hematopoietically non-toxic controls
<b>Nephrotoxicity Library</b> ENZ-LIB100	86	Analgesic nephropathy, interstitial nephritis, glomerulopathy, proximal and distal tubulopathy, nephrogenic diabetes insipidus, acute renal failure, chronic kidney disease, non-nephrotoxic controls
<b>Myotoxicity Library</b> ENZ-LIB101	60	Myalgia, colchicine-induced myopathy, rhabdomyolysis, atrophy, necrosis, thrombocytopenia, non-myotoxic controls

### Cardiotoxicity

Cardiotoxicity Library  
Angiotensin & Bradykinin ELISA Kits  
cGMP ELISAs  
FLUOFORTE® Calcium Assay Kits

### Hematotoxicity

Hematopoietic Toxicity Library

### Hepatotoxicity

Hepatotoxicity Library  
Cytochrome P450 Antibodies & Modulators

### Myotoxicity

Myotoxicity Library

### Nephrotoxicity

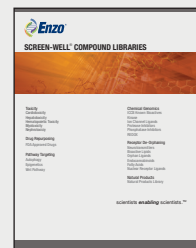
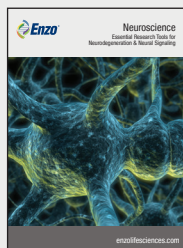
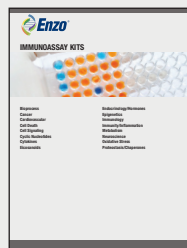
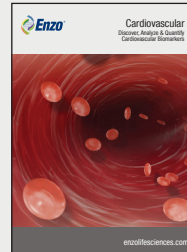
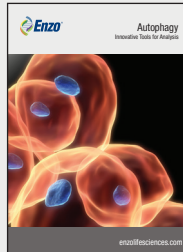
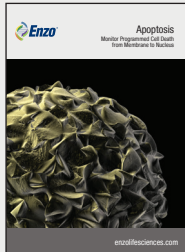
Nephrotoxicity Library  
Creatinine Detection Kit  
NGAL ELISA Kits

### Neurotoxicity

cAMP ELISA Kits  
PROTEOSTAT® Aggresome Detection Kit  
SMN ELISA Kit  
Substance P & Serotonin ELISA Kits

*Streamline investigation of mechanistic relationships  
between compounds and toxicity*

*You may also be interested in:*



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**[www.enzolifesciences.com](http://www.enzolifesciences.com)**

**Put our experience to work for you!**  
Our broad range of scientific expertise and industry-proven manufacturing capabilities enables us to provide a comprehensive set of solutions for toxicology research.