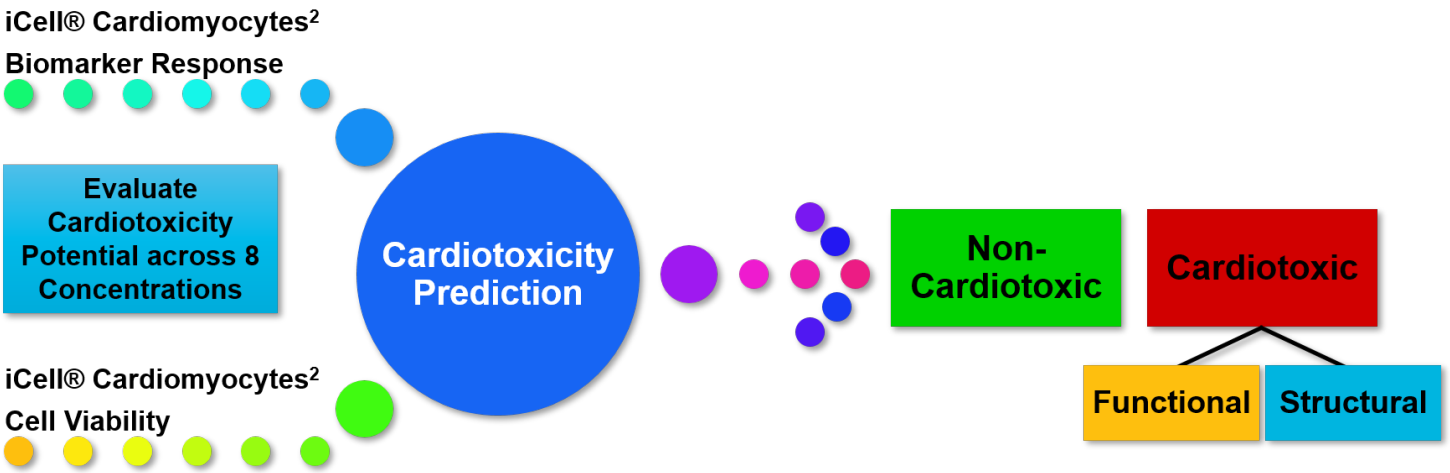
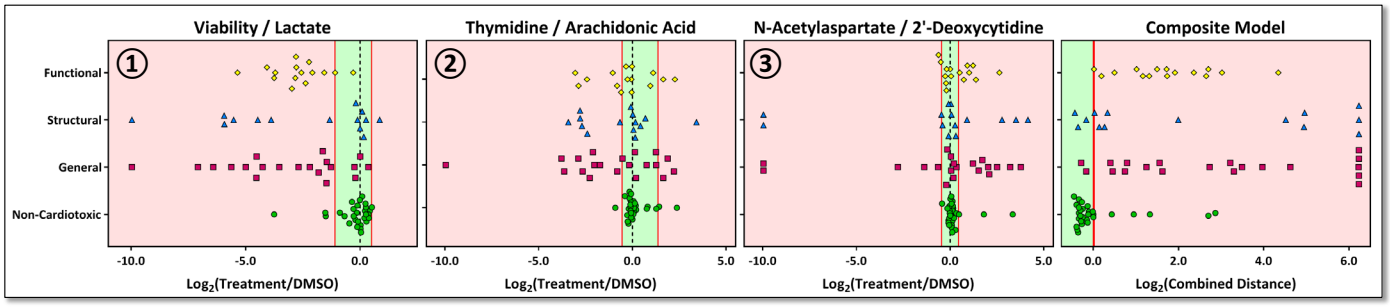
cardio*quick*PREDICT™

The Cardio *quick*Predict assay indicates the cardiotoxicity potential of drug candidates and other lead compounds, based on changes in human induced pluripotent stem cell-derived cardiomyocyte (iPSC-CM) metabolism and viability.

Cardio *quick*Predict provides an indication of cardiotoxicity and identifies functional or structural cardiotoxicants with a single assay. We plan to offer electrophysiological endpoints in the future. Stay tuned!



METABOLITE RATIOS ARE COMPLEMENTARY AND COMBINATION LEADS TO HIGHLY ACCURATE PREDICTION OF CARDIOTOXICITY POTENTIAL



Ratio	Accuracy	Sensitivity	Specificity	PPV	NPV	Functional*	Structural*	"General"*
1	82%	78%	90%	93%	70%	93%	57%	80%
2	72%	59%	93%	94%	57%	53%	50%	70%
3	72%	59%	93%	94%	57%	60%	50%	65%
Composite Model	**87%**	**90%**	**83%**	**90%**	**83%**	**100%**	**79%**	**90%**

*Percent of Subclass Correctly Predicted at Cardiotoxic

Continued >

Stemina BIOMARKER DISCOVERY

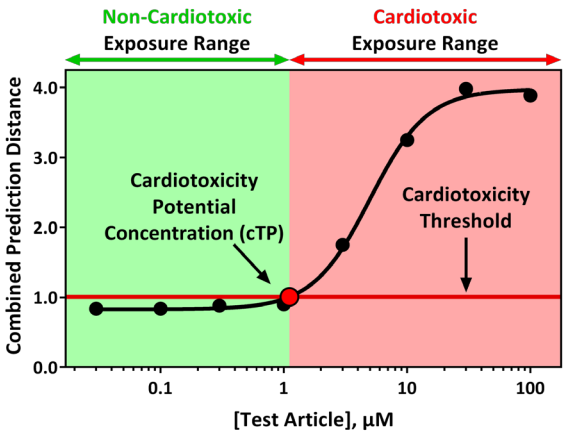
cardio qP quick PREDICT PROCESS

Stemina BIOMARKER DISCOVERY

How it Works

- Human iPSC-derived cardiomyocytes are treated with eight concentrations of each test article.
- Spent media is collected and cell viability is measured. The FIVE cardiotoxicity biomarkers are analyzed via LC-MS.
- Biomarkers are used in three ratios. The results from the three ratios are combined into a single composite value for cardiotoxicity prediction.
- Non-linear dose-response analysis of the the composite model response.
- A test article shows cardiotoxicity potential where the curve crosses the Cardiotoxicity Threshold.

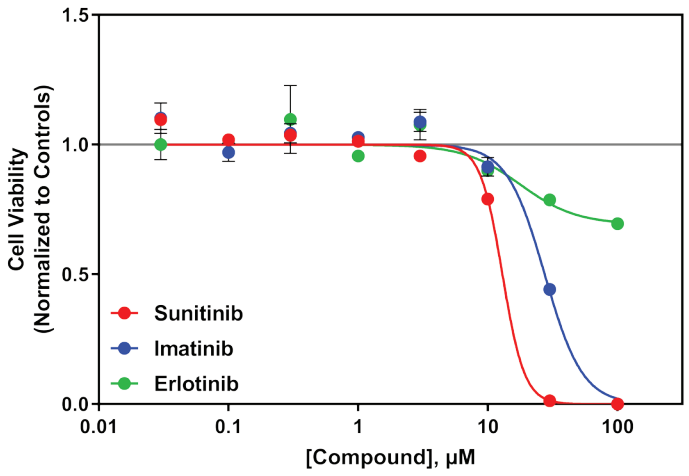
Assay Output



Cell Culture

The cardiotoxicity assay is performed using human iPSC-derived cardiomyocytes.

Cell Viability



Ultra Performance Liquid Chromatography-Mass Spectrometry

Samples are analyzed using UPLC-HRMS methods that have been optimized for the cardiotoxicity biomarkers of interest, yielding selective and reproducible biomarker measurement.

Data Analysis & Reporting

- SOP-driven analysis
- LIMS-controlled data analysis pipeline
- Identification of critical exposure where cellular metabolism is altered
- Uniform reporting for rapid turnaround
- Custom reporting available

Quality

From start to finish, Stemina has a well-defined, quality program that ensures the integrity of our data.

Flexibility

Our assays can be **customized** for your test articles and testing requirements. Ask us how!

Experience Counts

Our team has extensive experience in screening a wide variety of proprietary compounds including pharmaceuticals, agri-chemicals, tobacco products, consumer products, and cosmetic ingredients. Stemina was founded in 2006; its state-of-the-art facilities are located in the United States.

Extending Our Global Reach

CiToxLAB

Stemina has partnered with CiToxLAB, which has facilities in Canada, France, Denmark, and Hungary, to provide worldwide service.

EPA ToxCast™ Contractor

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