

Applications:

- Mechanistic toxicity analysis
- Hypothesis generation
- Validate existing hypotheses
- Biomarker identification

Data Types Supported:

- Gene Expression: microarray, qPCR
- Proteomics
- Metabolomics

Toxicity and Safety

Workflows Supported:

- Routine screening of compounds for compound selection
- Investigative studies of individual compounds with toxicity, unknown MOA
- Pre-clinical models
- In vitro cell-based models

Sign up for a free trial at:

http://pages.ingenuity.com/IPA_Toxicity_Trial.html

IPA-Tox[®] Overview

IPA-Tox[®] is a data analysis capability within IPA[®] software that delivers a focused toxicity and safety assessment of compounds under investigation. IPA-Tox provides a toxicogenomics approach that complements more traditional methods for an integrated systems toxicology approach to safety assessment. It includes key features such as toxicity lists, Toxicity Functions, interactive tox pathways and reports, and analysis summaries that help you best leverage the high quality toxicity knowledge it contains.

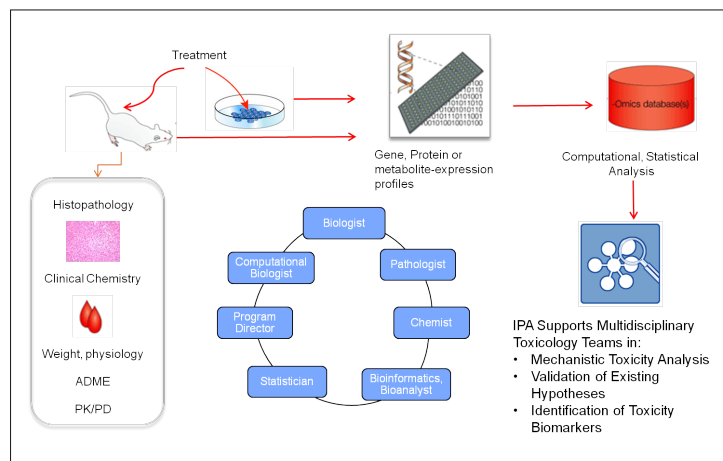
Why Choose IPA-Tox?

- **Adopted and Proven:** In contrast with other data analysis solutions targeted at the tox research community, IPA has the strongest track record of proven success and adoption in pharma, due in large part to the breadth, depth, and quality of molecular toxicity knowledge in IPA. This success is illustrated by the fact that IPA has been cited in more toxicology publications than other similar software.
- **Integrated Content:** The full benefit of toxicogenomics approaches can only be realized when data is examined in the context of extensive knowledge about pathways, gene annotations, functions, and regulatory networks that effectively bridge the gap between molecular profiles and toxicological responses and phenotypes. IPA-Tox is included with a standard IPA license, providing access to integrated biomarker and general molecular biology content that that may not be "flagged" as tox-specific, but is instrumental in teasing out mechanisms of toxicity.
- **Multidisciplinary:** IPA-Tox was designed to support multidisciplinary teams of scientists by providing simple workflows and reporting capabilities, so information can be easily shared and understood between roles. Further, the integrated content helps team members with various areas of expertise collaborate on developing insights.

How Does IPA-Tox Contribute to Tox Programs?

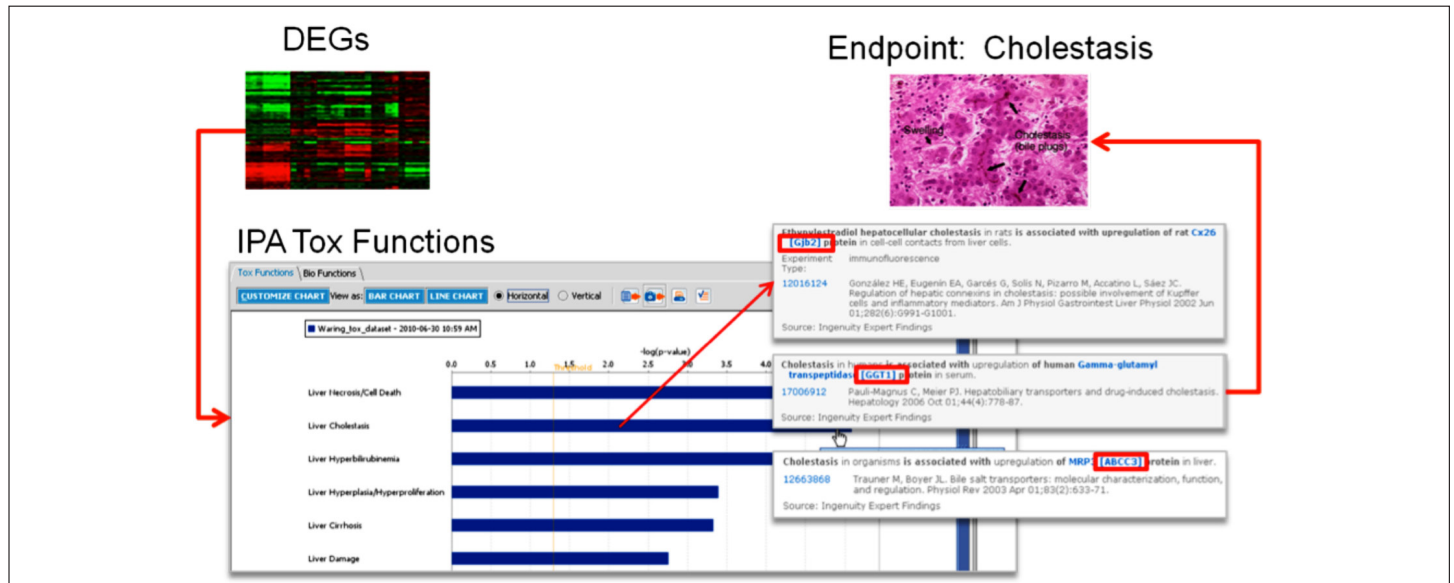
IPA-Tox is an integral component of an integrated systems toxicology approach to toxicity and safety assessment. It brings value by:

- Informing decisions related to lead compound optimization
- Efficiently delivering detailed mechanistic hypotheses underlying tox-specific phenotypes
- Providing pathway content and gene to phenotype associations that accelerate the interpretation of toxicogenomics data and the generation of reports summarizing findings from toxicity studies
- Providing rapid insights into candidate tissue-specific biomarkers through fully integrated biomarker capabilities
- Enabling multi-disciplinary toxicology groups to build a toxicogenomics database



IPA is a key part of an integrated systems toxicology approach, benefiting multiple team members. Graphic adapted from Nature Reviews Genetics 5, 936-948

More information about the content in IPA-Tox is available at <http://www.ingenuity.com/products/ipa-tox.html>.



Tox Functions provide key mechanistic insight into observed tox phenotypes by linking differentially expressed genes to tox endpoints

Other specialized content:

Clinical Chemistry and Hematology Assay Content

- Make connections between toxicogenomics data and chemical changes that are measured in the clinic
- Anchor toxicogenomics data to clinical chemistry and hematology measurements as well as pathology endpoints to provide a more comprehensive understanding of biological effects of a compound
- Tie together data gathered through traditional tox methods (histopathology, clinical chemistry) and toxicogenomics data to support a complete systems toxicology approach

Biomarker Content

- Prioritize candidate markers based on key biological characteristics
- Link directly to clinical trial records
- Identify genes already in use in the clinic as biomarkers of safety



IPA prioritizes biomarker candidates in support of better screening of toxicity

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Try IPA-Tox for free: http://pages.ingenuity.com/IPA_Toxicity_Trial.html

See high-impact toxicology research that has been published using IPA at:
http://www.ingenuity.com/library/pdf/tox_bibliography.pdf

Download our free white paper on how IPA-Tox and best practices for toxicity assessment at:
<http://pages.ingenuity.com/BestPracticesToxicity.html>