

## **Ingenuity Pathway Analysis (IPA) Training Resources**

### **Free Trial for Ingenuity Pathway Analysis:**

<http://www.ingenuity.com/products/ipa/try-ipa-for-free>

### **Ingenuity Pathway Webinars:**

<https://www.ingenuity.com/science/webinars>

### **IPA Self-Help Portal and Online Manual:**

<http://ingenuity.force.com/ipa/IPATutorials>

In the search box enter any term ('Regulator effects', 'network legend', etc.) to access all relevant documentation.

### **Ingenuity Knowledge Base:**

FAQ's: <http://ingenuity.force.com/ipa/IPATutorials?id=kA25000000TNA2CAO>

This 4 part series is from our Blog and goes into some additional details on our Ingenuity Knowledge Base and content curation:

Manual Curation (Part 1 of 4)

<http://www.ingenuity.com/blog/news/getting-know-ingenuity-knowledge-base-manual-curation-part-1-4>

Timely Comprehensive Content Coverage (Part 2 of 4)

<http://www.ingenuity.com/blog/products/getting-know-ingenuity-knowledge-base-timely-comprehensive-content-coverage-part-2-4>

Content Integration (Part 3 of 4)

<http://www.ingenuity.com/blog/products/getting-know-ingenuity-knowledge-base-content-integration-part-3-4>

Analysis Tools (Part 4 of 4)

<http://www.ingenuity.com/blog/products/getting-know-ingenuity-knowledge-base-analysis-tools-part-4-4>

### **Data Upload and Core Analysis Tutorial:**

The tutorial is found at <http://ingenuity.force.com/ipa/IPATutorials>. From here go to the menu on the left and select the top option: 'Tutorials and Training'. There select the third option: 'Upload and Analyze Example Data Tutorial'. Use the dataset provided: Example Prostate Data.xls

\*If you do not have this file, please email me at [kwendelsdorf@ingenuity.com](mailto:kwendelsdorf@ingenuity.com).

### **Compare Tool for molecule set comparisons:**

<http://ingenuity.force.com/ipa/IPATutorials?id=kA250000000TN5RC AW>

## **IPA SELF-PACED TRAINING VIDEOS**

### **Search and Explore Series:**

**Title : Search and Explore**

**Abstract:** Explore how IPA's knowledge and discovery tools allow you to relate the most recent literature findings to your experimental data, create interactive and customized pathways using tools such as species/tissue highlights and complex searches, and help in hypothesis generation.

**Video Link:** <http://youtu.be/25zVGoRT3kY>

**Title: Searching and Accessing the Knowledge Base**

**Abstract:** This short video is about how to use the search functionalities of IPA for a molecule, a function and disease, a canonical pathway and how to use the advanced search. You will also learn where and how to retrieve your molecule information and how to access Ingenuity finding from the knowledge base.

**Video Link:** <http://youtu.be/iU9ihqzfeEY>

**Title: Building a Pathway: Filtering and Growing**

**Abstract:** This short video is the first of two videos about how to use the tools under "Build" when you are building your pathway or editing an existing pathway. The Option "Grow" is discussed intensively along with all the filtering option that are in common with the other tools under "Build".

**Video Link:** <http://youtu.be/8rYEs8FOCws>

**Title: Building a Pathway: Exploring the Path of interaction**

**Abstract:** This short video is the second of two videos about how to use the tools under "Build" when you are building your pathway or editing an existing pathway. The tool "Path Explorer" as well as "Add Molecule" is discussed intensively.

**Video Link:** <http://youtu.be/--TRmuMVP9E>

**Title: Overlay Contextual Information**

**Abstract:** This short video is about how to use the tools under "Overlay" when you are building your pathway or editing an existing pathway.

**Video Link:** <http://www.youtube.com/watch?v=rSp8X6Y6Wlc>

**Title: Editing a Pathway for Publication**

**Abstract:** In this training, you will learn to use the Path Designer features that are available in IPA.

- Learn to customize your pathways
- Modify shapes with customized coloring, weighting, and labeling
- Add Cell Art to your pathways to represent various organelles
- Customize the background for your pathway
- Add text to your pathway and modify existing text
- Add a custom legend to your pathway

**Video Link:** <http://youtu.be/yEJqIU4So>

### **IPA Data Analysis Series (Core Analysis):**

#### **Title: Data Analysis : Part 1 (Data Upload in depth – 45 min)**

Abstract: Learn how to format your own data and analyze it in IPA. IPA can upload your experimental data to enable you to perform pathways visualization, and literature searches on the molecules in the dataset.

- Format the incoming data to be analyzed by IPA
- Upload the data to be analyzed
- Set filter parameters and other core setting options
- Run analysis

Video Link: [http://youtu.be/DtxqK\\_nL4lw](http://youtu.be/DtxqK_nL4lw)

#### **Title: Data Analysis : Part 2 (Results Interpretation- 1 hr)**

Abstract: Learn how to view and interpret your analysis results in IPA. How to focus on the Core Analysis and the multiple ways of relating the molecules in your dataset to the body of information in the Ingenuity Knowledge Base

- Biological functions and diseases that are over-represented in your data, and the predicted directional effects on these functions and diseases.
- Signaling and metabolic canonical pathways enriched in your data.
- Predicted upstream regulators that might explain the changes observed in your data.
- Molecular networks (algorithmically generated pathways describing potential molecular interactions in your experimental system)

Video Link: <http://www.youtube.com/watch?v=K3vMJFVvNBA>

#### **Title: Canonical Pathways**

Abstract: Use Canonical Pathways Analysis to understand the well-characterized metabolic and cell signaling pathways that are found in our Ingenuity Knowledgebase and that are also significant in your dataset.

Video Link: <http://youtu.be/5hEmwxnif4>

#### **Title: Statistical Calculation**

Abstract: IPA calculates the statistical values displayed in Functions, Canonical Pathways, and Transcription Factors. P-value and Z-score calculations are discussed.

Video Link: <http://www.youtube.com/watch?v=0oxCQ9dOQIE>

#### **Title: Regulator Effects**

Abstract: Use Regulator Effects to gain insights into your data by integrating Upstream Regulator results with Downstream Effects results to create causal hypotheses that explain what may be occurring upstream to cause particular phenotypic or functional outcomes downstream.

Video Link: <http://www.youtube.com/watch?v=J1oNEJ7Jpg&feature=youtu.be>

#### **Title: Network Analysis**

Abstract: Networks are collections of interconnected molecules assembled by a network algorithm. Each connection represents known relationships between the molecules, found in

the Ingenuity Knowledge Base. The most highly connected molecules in your dataset, search results, or lists and the knowledge base are consolidated into Networks. A network of molecules with characterized interactions (based on findings) may be biologically significant in your experimental system.

Video Link: <http://youtu.be/eReZrNE2bWY>

**Title: Downstream Effects Analysis**

Abstract: Use Downstream Effects Analysis to quickly Visualize biological trends in your experiment and Predict the effect of gene expression changes in your dataset on biological processes and disease or on toxicological functions.

Video Link: <http://youtu.be/CYMrhwuvVKs>

**Title: Upstream Regulator Analysis**

Abstract: Use IPA Upstream Regulator Analysis to identify the transcription regulators that may be responsible for gene expression changes observed in your experimental dataset. IPA predicts which transcription regulators are activated or inhibited to explain the upregulated and downregulated genes observed in your dataset. Knowledge of this regulatory cascade can help you understand the biological activities occurring in the tissues or cells that you are studying.

Video Link: <http://www.youtube.com/watch?v=X2bStYNJXm4>

**Title: Comparison Analyses**

Abstract: Comparison Analyses allows you to analyze changes in biological states across observations. After running a Core, Tox, or Metabolomics Analysis on your multiple datasets that represent timepoints or dosage treatments, run a Comparison Analysis to understand which biological processes, clinical pathology endpoints, diseases, and pathways are relevant to each timepoint or dose.

Video Link: <http://youtu.be/JCanWpyfvQE>