

Description

**IPA Legend**

This legend provides a key of the main features of Network Explorer and Canonical Pathways, including molecule shapes and colors as well as relationship labels and types.

Molecule Shapes

**Path Designer Shapes**

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Complex/Group/Other



Chemical/Toxicant



Cytokine/Growth Factor



Disease



Drug



Enzyme



Function



G-protein Coupled Receptor



Ion Channel



Kinase










Ligand-dependent Nuclear Receptor








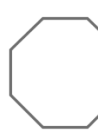




Mature microRNA














-  microRNA
-  Peptidase
-  Phosphatase
-  Transcription Regulator
-  Translation Regulator
-  Transmembrane Receptor
-  Transporter

## Network Shapes

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-  Complex/Group
-  Chemical/Drug/Toxicant
-  Cytokine
-  Disease
-  Enzyme
-  Function
-  G-protein Coupled Receptor
-  Growth Factor
-  Ion Channel
-  Kinase

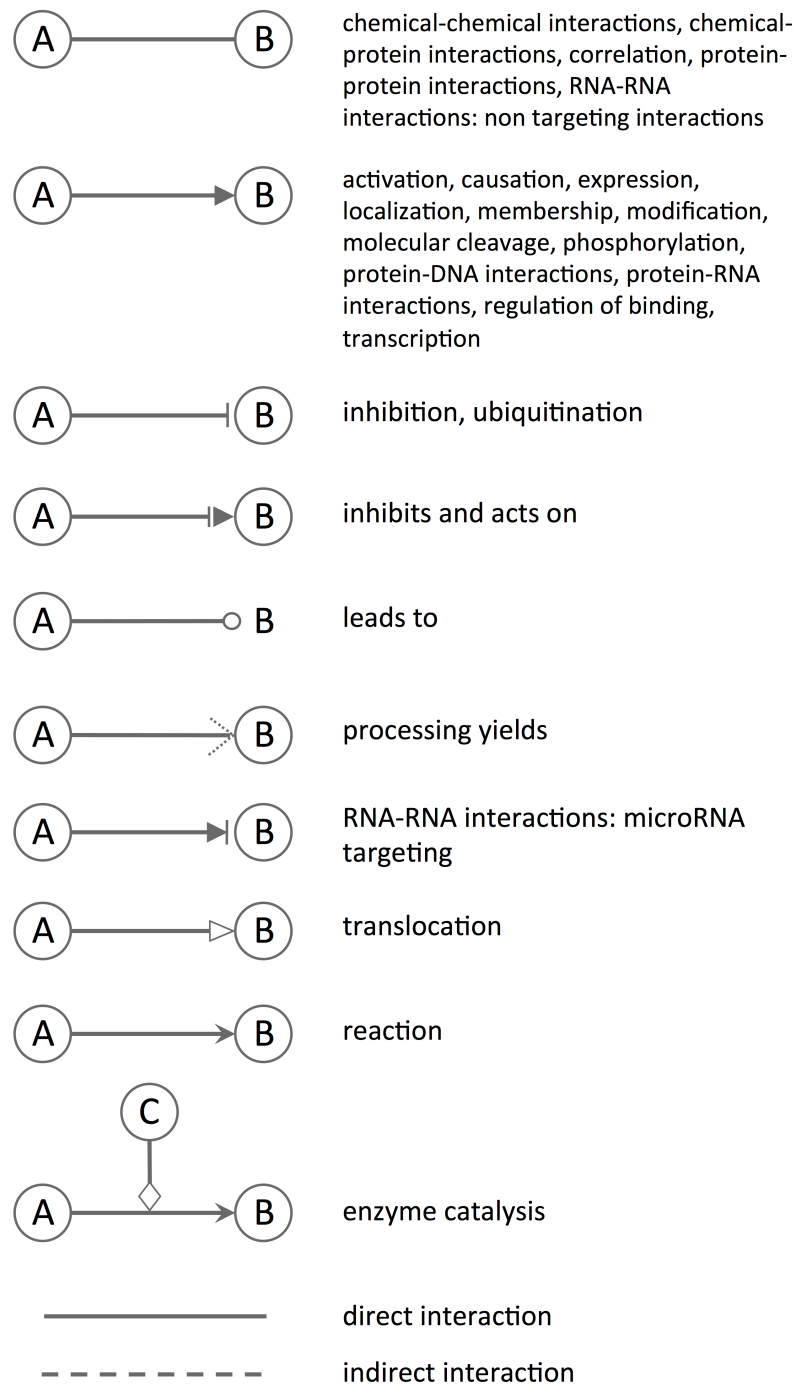
-  Kinase
-  Ligand-dependent Nuclear Receptor
-  Mature microRNA
-  microRNA
-  Other
-  Peptidase
-  Phosphatase
-  Transcription Regulator
-  Translation Regulator
-  Transmembrane Receptor
-  Transporter

**Relationship Types**

## Relationship Labels

<b>A</b>	<b>Activation</b>
<b>B</b>	<b>Binding</b>
<b>C</b>	<b>Causation/Leads to</b>
<b>CO</b>	<b>Correlation</b>
<b>CC</b>	<b>Chemical-Chemical interaction</b>
<b>CP</b>	<b>Chemical-Protein interaction</b>
<b>E</b>	<b>Expression (includes metabolism/ synthesis for chemicals)</b>
<b>EC</b>	<b>Enzyme Catalysis</b>
<b>I</b>	<b>Inhibition</b>
<b>L</b>	<b>Proteolysis (includes degradation for Chemicals)</b>
<b>LO</b>	<b>Localization</b>
<b>M</b>	<b>Biochemical Modification</b>
<b>miT</b>	<b>microRNA Targeting</b>
<b>MB</b>	<b>Group/complex Membership</b>
<b>nTRR</b>	<b>Non-Targeting RNA-RNA Interaction</b>
<b>P</b>	<b>Phosphorylation/Dephosphorylation</b>
<b>PD</b>	<b>Protein-DNA binding</b>
<b>PP</b>	<b>Protein-Protein binding</b>
<b>PR</b>	<b>Protein-RNA binding</b>
<b>PY</b>	<b>Processing Yields</b>
<b>RB</b>	<b>Regulation of Binding</b>
<b>RE</b>	<b>Reaction</b>
<b>RR</b>	<b>RNA-RNA Binding</b>
<b>T</b>	<b>Transcription</b>
<b>TR</b>	<b>Translocation</b>
<b>UB</b>	<b>Ubiquitination</b>

## Relationships



A relationship with an X over it indicates that the interaction does not occur. These relationships are only used in Disease pathways to indicate an interaction that would normally happen in the absence of the disease, but does not happen in the disease context.

An arrow pointing from A to B signifies different actions for different circumstances, as described below:

### For signaling pathways:

An arrow pointing from A to B signifies that A causes B to be activated (includes any direct interaction: e.g. binding, phosphorylation, dephosphorylation, etc).

### For metabolic pathways:

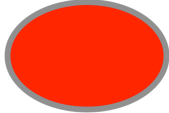
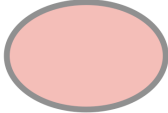
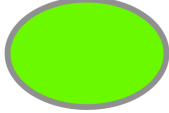





An arrow pointing from A to B signifies that B is produced from A.

### For ligands/receptors:

An arrow pointing from a ligand to a receptor signifies that the ligand binds the receptor and subsequently leads to activation of the receptor. This binding event does not necessarily directly activate the receptor; activation of the receptor could be caused by events secondary to the ligand/receptor binding event.





### MAP Prediction Legend

## Prediction Legend

more extreme	less
 Upregulated	
 Downregulated	
more confidence	less
 Predicted activation	
 Predicted inhibition	

### Predicted Relationships

	Leads to activation
	Leads to inhibition
	Findings inconsistent with state of downstream molecule
	Effect not predicted

## Overlay Tags

**Biomarker:** **BM:** Efficacy - gastric cancer

**Canonical Pathway:** **CP:** Clathrin-mediated Endocytosis Signaling

**Drug:** **Rx:** ketoconazole

**Function:** **Fx:** insulin-like growth factor receptor signaling pathway

**My List:** **ML:** cancer, 29d 125

**My Pathway:** **MP:** Molecular Markers & Crosstalk Endometrial Cancer





**Toxicity List:** **Tx:** Cytochrome P450 Panel - Substrate is a Sterol (Mouse)

## Fonts and Colors

### Fonts

<b>Bold</b>	Focus molecules. Gene/Protein/ Chemical identifiers that made the user-defined cutoff and map to the Global Molecular Network are displayed with bold text.
<b><i>Italics</i></b>	Override molecule - Gene/ Protein/ Chemical identifier designated as Override in the dataset file.
*	Duplicates -Gene/ Protein/ Chemical identifiers marked with an asterisk indicate that multiple identifiers in the dataset file map to a single gene/ chemical in the Global Molecular Network. After an expression value, this indicates that when the duplicates were resolved, a new expression value was calculated that was not part of the original dataset. Please see <a href="#">Resolving Duplicate Identifiers</a> for more information.
	In Canonical Pathways, the asterisk indicates the gene or genes are mutated within the context of the Canonical Pathway.
A	Gene/ Protein/ Chemical ID marked as Absent. The gene/ protein/ chemical will not be used as a focus molecule or appear in networks unless you also explicitly override this flag with the override column.
+	Indicates there are other networks from the analysis that contain this gene. Right click on the + sign or on the corresponding molecule to view the related networks.
?	Molecules marked with the ? (delta) have undergone a change from a previous content release. Changes include: (1) the merging of two or more molecules into one (2) the split of one molecules into two or more molecules (3) the deletion of an obsolete molecule name.
†	The † (dagger) symbol indicates custom molecules.
§	Indicates that the molecule was imported from an SMBL pathway and is not mapped in IPA.

### Default Molecule Colors

-  Dataset file genes. Non-Focus\*
-  KB genes - Not part of dataset file.
-  Focus genes are colored according to user's preferences.
-  Indicates shared nodes from 2 or more analyses.

\*For dataset files that contain only identifiers (i.e. no expression values), the color gray identifies the Focus Genes from that dataset.

<b>Red</b>	User input molecule that is upregulated (ie. has a positive (+) expression value) and whose expression value meets the user defined cutoff.
<b>Green</b>	User input molecule that is downregulated (ie. has a negative (-) expression value) and whose expression value meets the user defined cutoff.
<b>Gray</b>	User input molecule. Neither up nor down-regulated or does not meet the user-defined cutoff.
<b>White</b>	Molecule that is not user specified, but incorporated into the network through relationships with other molecules.
<b>[Blue]</b>	For canonical pathways, molecules that are members of the network being examined are outlined in blue.



























**Molecule color intensity:** The intensity of green and red molecule colors indicates the degree of down or upregulation, respectively. If normalized ratio, fold-change or log ratio/log fold-change is chosen as Expression Value type, a greater intensity of green represents a higher degree of downregulation, and a greater intensity of red represents a higher degree of upregulation. In contrast, for the expression value type p-value all Focus molecules are red by default; and a higher color intensity represents a lower (and thus more significant) p-value.

Molecule coloring can be customized by adjusting the Application Preferences.

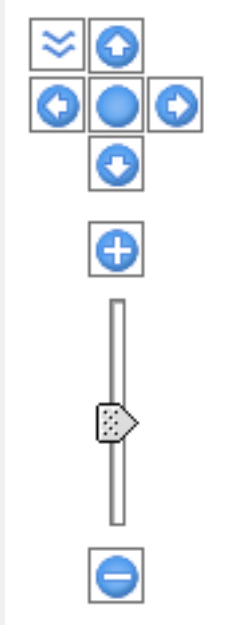
For more information on molecule coloring in Canonical Pathways, [click here](#).

### **Tool Icon Library**



Button	Name and Function
	<b>Save:</b> Saves the current network diagram.
	<b>Delete Selected:</b> Removes selected (highlighted) molecules from the network diagram.
	<b>Copy:</b> Saves highlighted molecules to the clipboard.
	<b>Paste:</b> Returns molecules in the clipboard back to a network diagram.
	<b>Undo:</b> Reverses the last action.
	<b>Redo:</b> Repeats the last undone action.
	<b>Add to List:</b> Selected molecules can be added from a network, pathway, or neighborhood by clicking this icon.
	<b>Open Right Click Menu:</b> <i>This icon is only available on Mac computers.</i> It functions as a tool to open the menu that is available in Pathways, Networks, and Neighborhoods by right-clicking the mouse.
	<b>Find Genes:</b> Locates a gene within a network, neighborhood, or My Pathway. Once identified, the gene will be identified in blue.
	<b>Full Screen View:</b> Toggles to a full-screen view. Graph navigation tools are available to move around the network or pathway. Use Right click to exit from Full Screen view, or Esc.
	<b>Auto-Layout:</b> Redraws the network diagram with molecules laid out with even spacing.
	<b>Toggle Subcellular Layout:</b> Shifts the spatial location of molecules into their corresponding subcellular locations.
	<b>View annotations:</b> Gives details of all the selected molecules
	<b>View/ Edit Preferences:</b> Click to change the font sizes in network explorer. Changing the font size does not change the corresponding molecule size.
	<b>Zoom Selected:</b> Zooms in on selected area of window.
	<b>Magnifying Lens:</b> Use this tool to enlarge portions of pathways and networks. Click it, then hover with the mouse over the area you wish to see more detail.
	<b>Refresh:</b> Updates existing connections with the latest content from the Ingenuity Knowledge Base.
	<b>Edit Notes:</b> Allows you to change the notes on a saved Pathway or List.
	<b>Open Report:</b> Opens a Pathway or List report.
	<b>Build:</b> Opens a menu at the left of the screen for accessing Grow, Path Explorer, Connect, Trim, and Add Molecules/ Relationships.
	<b>Overlay:</b> Opens a menu at the left of the screen for overlaying Expression values, Functions and Diseases, Lists, Drugs, Canonical Pathways, and Custom Pathways and for Highlight and Species/ Tissue Highlight.
	<b>Path Designer:</b> Use Path Designer to transform your networks and pathways in IPA into publication quality pathway graphics rich with color, customized text and fonts, biological icons, organelles, and custom backdrops.
	<b>Export Image:</b> Export an image of your network up to 600 dpi.
	<b>Export Data:</b> Export a list of genes with associated identifiers, expression values and gene details.
	<b>Print:</b> Generates a hard copy of the network diagram.
	<b>Email :</b> Send interactive pathway to a colleague














## Graph Navigation Tools



This tool is available from networks and pathways. The arrow keys allow you to move the network left, right, up, and down. The + button acts as a Zoom In tool. The "-" button is a Zoom Out tool. Clicking the circle in the center Fits the network to the screen.

Clicking the the double arrow in the top left opens an overview of the network so that you can determine where on the page you are focusing.

### Path Designer Tools

Button	Name and Function
	<b>Molecules:</b> Opens the Molecules menu for selecting shape style.
	<b>Lines:</b> Draw free lines on your Path Designer pathway.
	<b>Edges:</b> Allows you to connect two molecules.
	<b>Text:</b> Allows you to type free text on your Path Designer pathway.
	<b>Cell Art:</b> Opens the Cell Art menu for selecting organelles and other cellular structures.
	<b>Legend:</b> Links to the edit Legend menu that allows you to place a customized legend on your Path Designer pathway.
	<b>Background:</b> Links to the edit Background menu that allows you to choose or upload a custom background for your Path Designer pathway.
	<b>Edit:</b> Opens a panel on the right of the screen for accessing the details of the Path Designer tools.
	<b>Text Color:</b> Changes the color of selected text.
	<b>Fill:</b> Allows you to choose and modify the color of the background, text background, or molecule.
	<b>Line Color:</b> Allows you to change the color of a free line or relationship.
	<b>Line Thickness:</b> Allows you to change the weight of a free line or relationship.
	<b>Line Style:</b> Allows you to change the style of a free line or relationship.

Attachment

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Currency USD