

# Additional file 1. NetworkPainter user instructions

## NetworkPainter-Cytobank

### Requirements

The Cytobank version can be used with any web browser with the Adobe Flash Player. The Cytobank version does not require any installation.

### Viewing demos diagrams

Please follow these steps to explore NetworkPainter using the demo diagrams:

1. Navigate to the NetworkPainter landing page at <http://www.cytobank.org/networkpainter.html>
2. Create a Cytobank account, and login
3. From the experiments inbox, select one of the select the experiments titled “NetworkPainter Demo – Human PBMC mass cytometry {*LPS*, *INF-α*, ...} timecourse (Bodenmiller et al., 2012).”
4. From the experiment’s page, select “View Signaling Network Diagrams” in the left-hand side “actions” menu
5. Select a diagram
6. Use the playback controls at the bottom-left of the application to paint the diagram with data, and to pause the animation and control its speed

### Getting started

Please follow these steps to draw and paint diagrams using the Cytobank version:

1. Navigate to <http://www.cytobank.org/networkpainter.html>
2. Create a Cytobank account, and login
3. Create an experiment, and upload data
4. From the experiment’s detail page, click “View Signaling Network Diagrams” in the left-hand side menu
5. Click the “Create a New Diagram” button to create a new diagram
6. Use the graphical interface to draw a diagram
  - (a) Use the toolbar to drag and drop new molecules onto the diagram, and follow the instructions in the pop-up windows:
    - i. Choose a name and label
    - ii. Select the corresponding experimental channel to link molecules with experimental data
    - iii. Click “Add” to append the molecule to the diagram
  - (b) Add edges by either
    - i. Selecting two molecules (hold Ctrl and click two molecules), right-clicking, and then choosing “Draw arrow” from the context menu, or
    - ii. Entering a Boolean rule into the “Regulation” field for each molecule
7. Use the playback controls at the bottom-left of the application to paint the diagram with data, and to pause the animation and control its speed

## Detailed instructions and further help

Please see <http://covert.stanford.edu/networkpainter> for tutorials and further help or contact us at [support@cytobank.org](mailto:support@cytobank.org).

## NetworkPainter-Standalone

### Requirements

The standalone version can be used with any web browser with the Adobe Flash Player. The standalone version does not require any installation or user registration.

### Viewing demo diagrams

Please follow these steps to explore NetworkPainter using the demo diagrams:

1. Navigate to <http://covert.stanford.edu/networkpainter>
2. Select the gallery link from the top menu
3. Choose a demo, and click its “View in NetworkPainter” link
4. Open NetworkPainter as a guest, or create a new account and login
5. Load an experiment
  - (a) From the main menu select “Experiment” → “Manage experiments ...”
  - (b) Highlight an experiment in the pop-up window, and click “Select” to paint the network with the experimental data
6. Control the animation using the playback controls at the bottom-left of the application

### Getting started

Please follow these steps to draw and paint diagrams using the standalone version:

1. Navigate to <http://covert.stanford.edu/networkpainter>
2. Use the web form to either (a) register for an account and login which will allow you to privately save diagrams, or (b) use the software as a guest without any registration
3. Use the graphical interface to draw a diagram
  - (a) Use the toolbar to drag and drop new molecules onto the diagram, and follow the instructions in the pop-up window:
    - i. Choose a name and label
    - ii. Click “Add” to append the molecule to the diagram
  - (b) Add edges by either
    - i. Selecting two molecules (hold Ctrl and click two molecules), right-clicking, and then choosing “Draw arrow” from the context menu, or
    - ii. Entering a Boolean rule into the “Regulation” field for each molecule
4. Upload experimental data and link data to network molecules
  - (a) From the main menu select “Experiment” → “Manage experiments ...”
  - (b) Click “Add” in the pop-up window

- (c) Select a JSON file containing experimental data (see the online help at <http://covert.stanford.edu/networkpainter> for documentation of the JSON format and an example)
  - (d) Use the “Channel-Biomolecule Associations” tab to select the experimental channel corresponding to each network biomolecule
  - (e) Highlight the experiment in the left side of the pop-up window, and click “Select” to paint the network with the uploaded data
5. Control the animation using the playback controls at the bottom-left of the application

**Detailed instructions and further help**

Please see <http://covert.stanford.edu/networkpainter> for tutorials and further help.