

RBC Mapper Guide

1. Main Window

This program allows users to create visualizations of data for compounds tested against kinases. The main window contains four pre-made map choices: one for wild type kinases, one for atypical kinases, one for mutant kinases, and one for lipid kinases. The user can also create their own custom maps, see the "Add Map Window" section for more information.

Map Selection

In the top left corner of the screen, there is a drop down box with map choices. Selecting a map will display that map's image and enzymes. The default map choice is "Wild Type Kinase".

Parsing RBC Reports

The user can parse a standard format RBC report by pressing the "Parse RBC Report..." button.

IC50 reports have two choices for how to parse the report:

1. Selecting "Map IC50s" will create an xml file that will display the IC50 values for each enzyme in the report once loaded.
2. Selecting "Select Concentrations" will create an xml file that will display the inhibition values for each enzyme at the selected concentrations once loaded.

All reports will have two options for how to group enzymes by ATP concentration:

1. Only enzyme data for enzymes tested against the same ATP concentration will be displayed on the same map.
2. Enzyme data will be displayed on the same map regardless of ATP concentration.

After clicking "OK", the program will produce a folder with an xml file either for each compound in the report, or for each compound at each ATP concentration for which it was tested in the report depending on user selection.

Manually Adding Inhibition/IC50 Values

If the user doesn't have a standard format RBC report, but would still like to produce a map, they can manually add inhibition or IC50 values for each enzyme by entering the value next to the enzyme name in the list on the left side of the screen. Pressing the enter key will cause a dot of appropriate size to appear over the enzyme.

Saving Reloadable Map Files (XML Format)

The user can save their map as an xml file which can be reloaded later by clicking the "Save Map File (XML)..." button. This will save the inhibition or IC50 data for each enzyme as it appears in the enzyme list on the left side of screen.

Saving a Map Image (PDF Format)

The user can save their map as an image in PDF format by clicking the "Save Image (PDF)..." button.

Loading Map Files (XML Format)

Once the user has saved map files (xml format), they can load maps on the main window by clicking the "Load Map File (XML)..." button and selecting the desired file.

Clicking this button will load the appropriate map (wild type, atypical, mutant, lipid, or custom) and user settings (scale, view enzymes, etc.) on the main window.

If there are enzymes in the saved map file that were not found on a particular map, a list of these enzymes will appear.

Viewing Enzyme Names

Users have two choices for viewing enzyme names on a map:

1. View all enzyme names by checking the "View All Enzyme Names" box
2. View the names of only the enzymes that have reactivity by selecting the "View Names of Enzymes with Reactivity Only" box

Highlighting Specific Enzymes

If there is a particular enzyme or set of enzymes which the user would like to highlight on the map, they can find those enzymes in the list of all enzymes on the left side of the screen and check the "IsTarget?" button to the right of the enzyme name. Any enzyme with the "IsTarget?" button checked will have a red dot on the map instead of a blue one.

Manipulating the Map on the Screen

The user can move the map by dragging with the mouse.

The user can zoom in or out on the map by either scrolling with the mouse wheel, or pressing the zoom in and zoom out buttons.

The center image button centers the image.

Creating Enzyme Name Translations

If the user would like to use an existing map, but would like to change some or all of the enzyme names, they can do this by creating a translation file (xml format).

To create a translation file, the user must click the "Create Translation (XML)..." button.

This will bring up a grid with all the enzyme names for the currently selected map with corresponding blank columns where the user can input the enzyme names they would like to use.

When finished, click "Save" to save the translation file.

Loading Enzyme Name Translations

To use a saved translation file (xml format), the user must click the "Load Translation (XML)..." button and select the desired translation file.

This will reload the map and enzyme list with the translated enzyme names.

To reset the map to the standard format, simply click the "Reset Translation" button.

2. Add Map Window

The user can create their own maps from PDF files by clicking the "Add/Edit Custom Maps..." button in the map selection drop down list on top left of the main screen.

The user can also use the "Add Map" window to edit any maps that they have created, though they cannot edit RBC maps.

Once the user saves a new custom map, it will appear as a map option in the map drop down box on main window. Selecting the map will load it on the main window.

Loading a New Map

A user can load a new image to use as a map by clicking the "Add New Map..." button. The image file must be in PDF format, and any text in the image will be removed.

Manipulating the New Map

The new map can be manipulated the same way that maps on the main window can be manipulated. See the "Manipulating the Map" section above.

Adding Enzymes to the Map

To add an enzyme to the map, the user must click the point where they wish the enzyme to be placed.

The user must then enter the name of the enzyme in the enzyme name box, and click "Add", or press enter.

In order to add an enzyme, the enzyme name, X coordinate, and Y coordinate must be specified.

Manipulating Enzymes

To move an enzyme, double click it, drag it to the desired location, and click once to place it.

To rotate an enzyme, double click it, and press the "A" key to rotate it counter clockwise, "S" to rotate clockwise. Click once to place it.

To change the font color, font size, or name of the enzyme, right click on the enzyme name, enter desired values in the Font Attributes window, and select "Save".

Click "Delete Enzyme" to delete the enzyme.

To change the font family for all enzymes, select the desired font family from the "Font Family" drop down list at the bottom right of the window.

Enzymes attributes can also be changed using the grid at the left. Right clicking on an enzyme in the grid and selecting delete deletes the enzyme.

Editing an Existing Map

To edit an existing map, the user must select the map that they would like to edit from the "Select Map to Edit" drop down box to the top of the window. This box will include the names of all maps that were previously created by the user.

Saving a Map

To save a map, ensure the map has a name (new maps must be named, but old maps being edited will already have a name, which can be changed by changing the map name) and click either the "Save" or "Save and Exit" button.

The "Save" button will save the map and allow the user to continue working.

The "Save and Exit" button will save the map and exit the window.

Pressing the "Cancel" button will close the window without saving.