

Clone Manager 11

ENHANCE TUTORIAL

This tutorial will describe how to enhance the presentation of a graphic map of your molecule. You can customize how features are drawn and labelled as well as enzyme sites and other labels. Up to 6 enhanced maps can be saved as part of your molecule data file. Maps can be printed or exported in various graphic formats.

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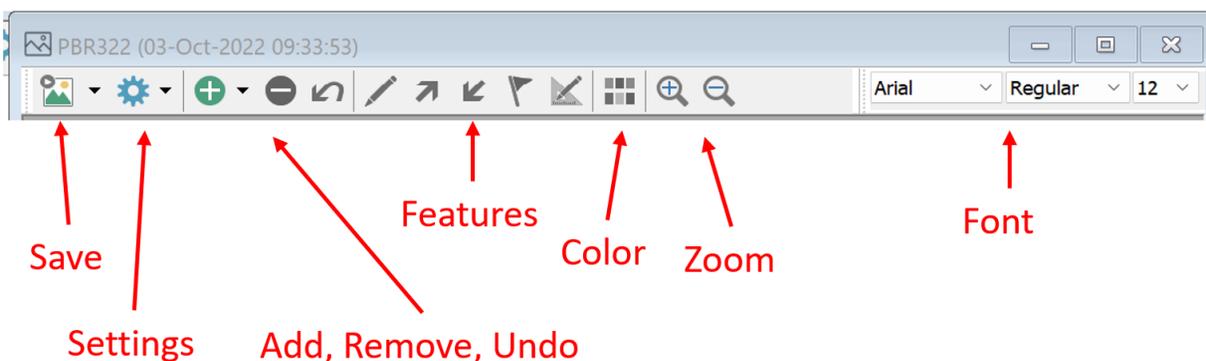
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Creating a New Enhanced Map

Start the Clone Manager program and load the molecule that you want to enhance. The molecule will open with the standard working map display. On the map window toolbar, click the 'Enhance' button and select 'New view'.

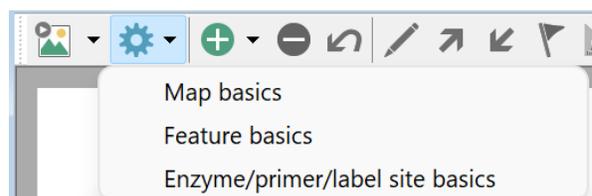


A new window will open. The title bar will show the name of the molecule and the date stamp for when the view was created. The toolbar shows the tools that are available for customizing the molecule map. These will be described in more detail later. Underneath the toolbar is the graphic map which is initially drawn in the default style. The graphic map view will show you how your molecule will appear as you enhance the map.



If you hover your mouse cursor over a toolbar button, you will see a popup tooltip that describes the function of the button.

Settings: The settings toolbar button gives us access to change the basic properties of how the map will be drawn. Click the Settings toolbar button. There are 3 categories of basic settings.

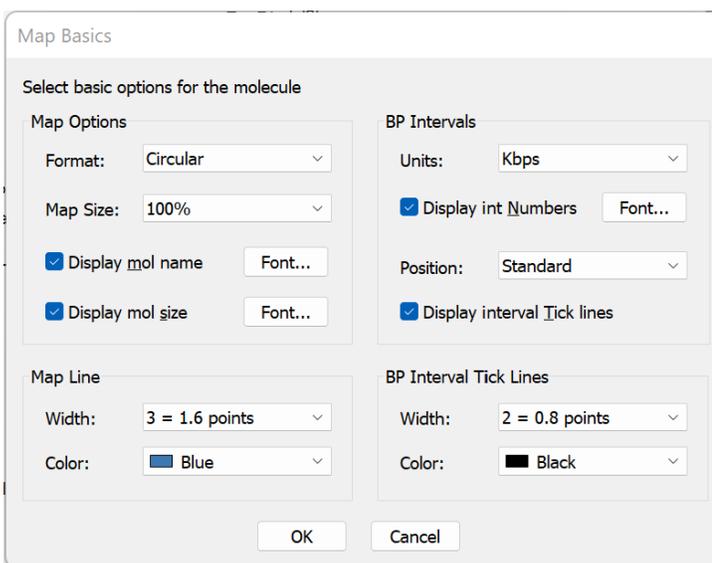


Map Basics: This dialog box controls how the molecule will be displayed. You can change the Map Options and turn off the display of the molecule name and size if desired. In a later section, we will see how to move these labels from their default centered position.

Let's improve the display of the map line. Click the Width combo box and select a thicker line width and let's change the color to blue.

Let's de-emphasize the BP intervals by changing to Units of kbps and set the position to 'Standard' which will place the ticks closer to the center and away from the features. The changes are shown in the dialog image.

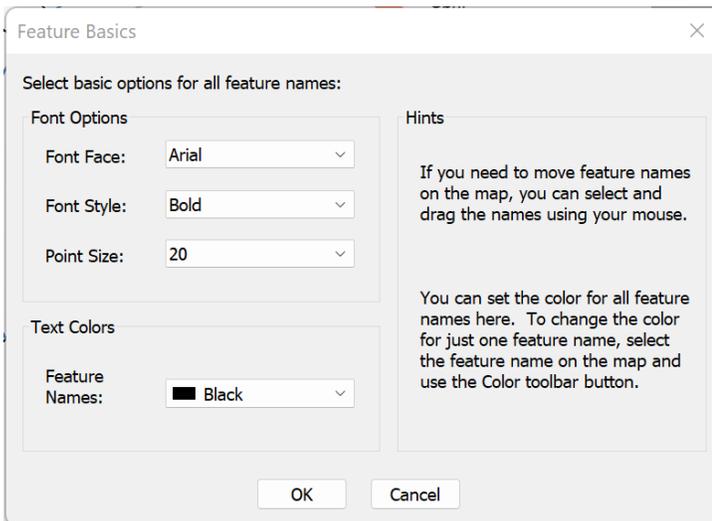
Click OK to accept and see the changes to how the map is drawn.



Feature Basics: This dialog allows us to change the default style for all features. Change the font options and text color that will be used for all features.

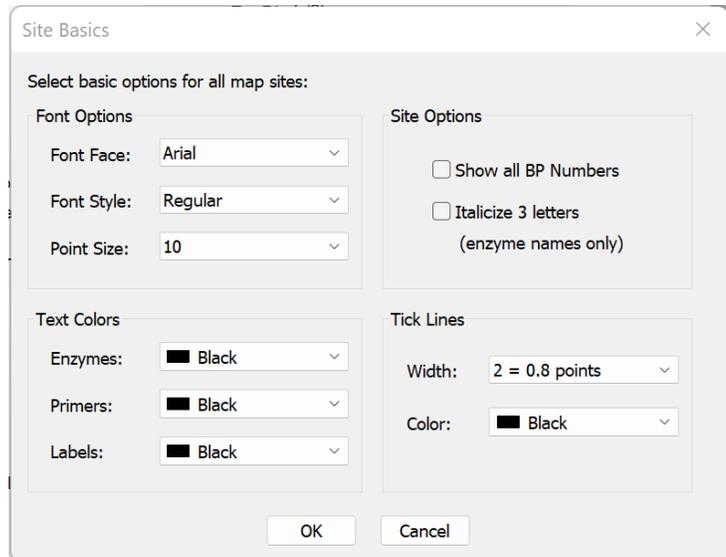
Let's make the feature names more prominent by setting the font options to Bold and 20 points.

Notice the Hints panel which shows how to customize features individually. We will use this to individually customize each feature in the next section.



Site Basics: This dialog controls how enzyme, primer and label sites are displayed. You can change the font used for all sites and individually change the colors for the different types of sites.

Site options and tick lines can also be customized. Tick lines are the lines that connect the site to its exact position on the molecule map line.

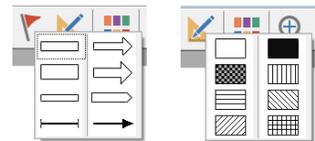


Customize features: The normal working map shows all map features in a simple default style that can be changed using the settings dialog box described above. For this tutorial, we will modify the display of the feature that is to be the primary focus of the map. We will also de-emphasize another feature.

Emphasize 'tet' feature: Select the 'tet' gene feature by mouse clicking on the 'tet' gene arrow. Notice that the toolbar buttons for editing features are now active. The first button allows for editing all aspect of the feature and will be described in greater detail below.



The other buttons allow quick customization. The arrow buttons quickly move the selected feature out/up or in/down as needed. The next buttons allows changing the display style and includes box, arrow, line and pointers in a variety of sizes as well as the fill pattern.

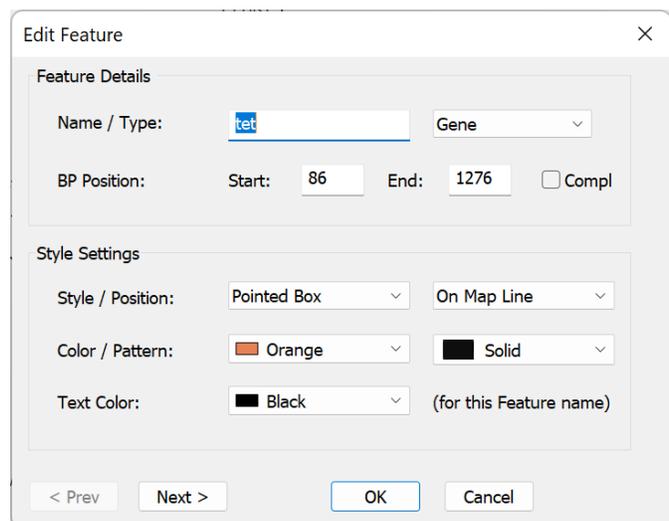


Click the edit (pencil) button. The Edit Feature dialog box allows you to change the details of the feature.

Let's change the style to 'Pointed box' and 'On Map line' with color 'Orange' as shown on the right.

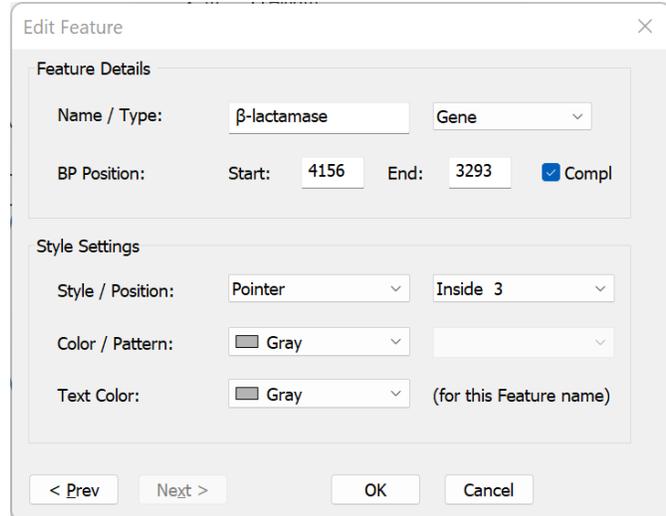
Click OK to save these changes. If you want to change multiple features, you can click the Next, or Prev, buttons to navigate through the features.

De-emphasize the 'bla' gene: On the main map view, click on the bla gene arrow and select the edit toolbar button.



Let's change the name to ' β -lactamase' and set the style to 'Pointer' with color 'Gray'.

Click the OK button to see the changes.



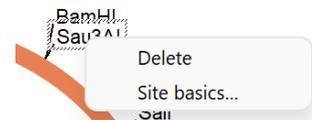
Move text labels: The molecule name and size are initially drawn in the center of a circular map (or below a linear map). You can move these labels to a better position by clicking on the label and using the mouse to drag the label to where you would prefer it to be shown.

Let's move the molecule name by clicking on 'PBR322' and dragging it to the upper left of the view. Similarly let's move the molecule size by clicking and dragging it to the lower right.

The ' β -lactamase' feature label is too close to the 4.0kbp tick marker. Let's move it down closer to the pointer arrowhead.

Mouse right click actions: Right clicking an item, such as a feature, shows a popup context menu that provides quick access to the most likely actions.

In the upper right there are 2 enzyme sites at the same base position. Sau3AI is a 4 base recognition enzyme that we do not want to show on this map. Let's remove it by right clicking on the name. The menu allows quick access to the Site basics dialog. Select 'Delete' to remove the site.



Similarly, right clicking on a feature gives quick access to edit, delete and basic settings.

Save the map: To save these changes, click the icon on the first toolbar button. The drop-down arrow gives access to more save options which we will explore in a later tutorial. Here we simply want to save our changes as part of the molecule file. This can be simply done by clicking the left part of the button (default action) or the arrow part and selecting 'Save view' from the drop-down menu.



When you close the enhanced map window, you will be prompted to save any changes that have not yet been saved.

At this point, our enhanced map has been saved as part of the original molecule but has not yet been saved to disk. Click the main toolbar save button or use the option on the file menu (Control+S is a quick keyboard shortcut).

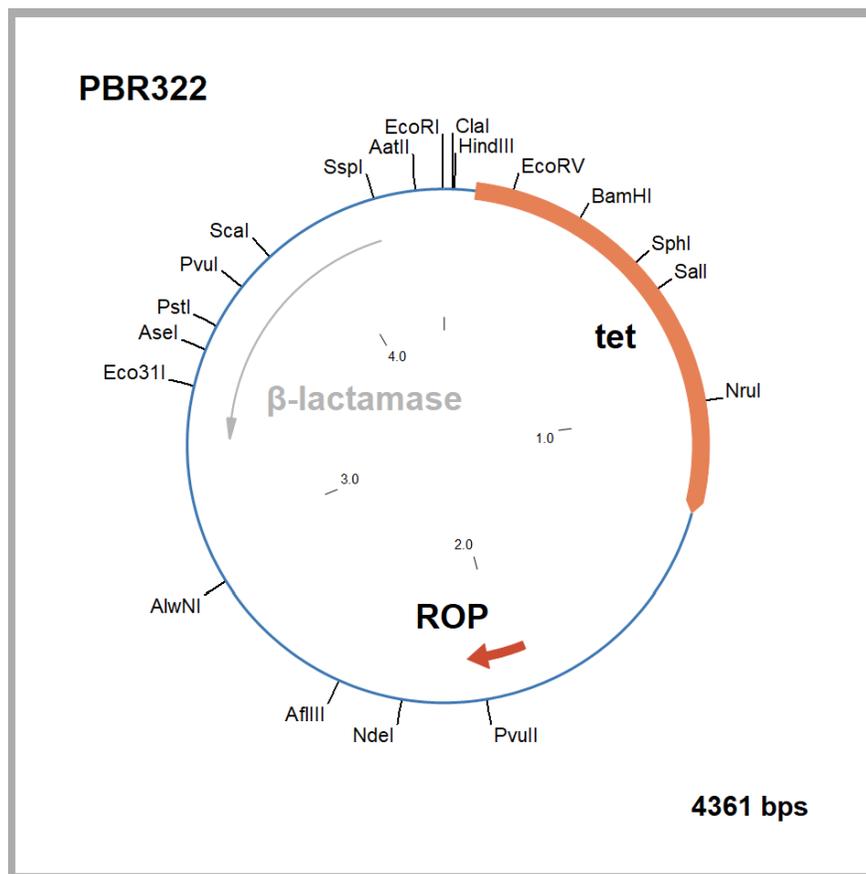
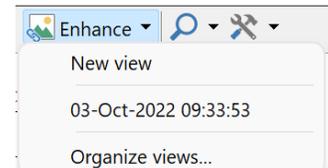


We will use this saved map file in the next tutorial.

Editing existing enhanced map

Start Clone Manager and load the map file saved in the previous tutorial.

On the map window toolbar click the 'Enhance' toolbar button. We used the 'New view' option in the prior tutorial and will use 'Organize views' in the next tutorial. Each view is identified by the date stamp for when the view was created. Click the view to edit. In this example we have only one view.



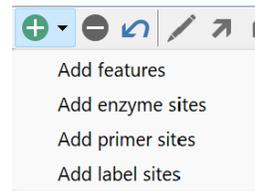
Remove, Undo and add: Maps that are going to be used in a presentation should not contain too much information. Less important items need to be removed.

Click on the ROP gene arrow. Notice that the 'Remove' and 'Undo' toolbar buttons are now active. Click the red remove button (center of the 3 buttons) and see that the ROP gene is no longer displayed. Click the Undo button (third button) and the ROP gene is shown again.



Let's remove an enzyme site. Click on one of the enzyme sites and then click the toolbar remove button. The site is no longer shown.

In the previous tutorial we removed the Sau3AI site. Let's restore the site. Click the toolbar 'Add' button. The popup menu gives us the ability to restore items that were previously removed. Select 'Add enzyme sites'.

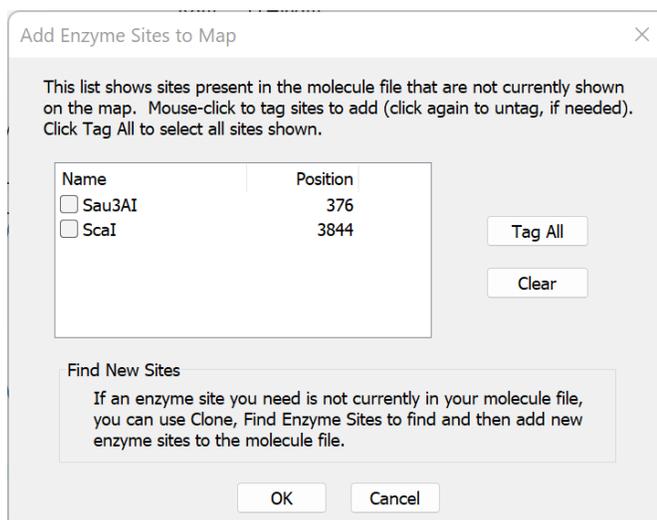


The dialog box displays enzyme sites that have been removed from this map. Click the checkbox for Saue3AI.

If you want to add all of the sites, click the 'Tag All' button. Similarly, click the 'Clear' button to remove all of the checked sites.

The hint at the bottom shows how to add enzyme sites that are not currently part of the molecule.

Click OK to add the site(s) you selected to add to the enhance map.



Change text font: Fonts can be set from the Settings toolbar button. A quick way to change the font used for displaying an item is to use the mouse to select the text item. The font options currently used for displaying that item is shown on the right end of the toolbar. Use the toolbar comboboxes to change for font face, style and/or size. Note that feature names all use the same font size (as do site names).



Change color: Colors can be set from the Settings toolbar button. A quick way to change the color of an item is to use the mouse to select the text item. Now click the color button on the toolbar.

Pick the color you want for the selected item. The popup shows the 16 standard color palette. If the color you want is not shown, use the 'More Colors' option to show the Windows Color Palette and select the color you want. This color will also be added to the quick pick row since it is likely that you will want to use this color again.



Print map: The enhanced map can be printed using the standard File Print menu option.

Exit without saving: Close the enhanced map window. Clone Manager will remind you that the changes have not yet been saved. Similarly, you will get a prompt if you close the Clone Manager application.

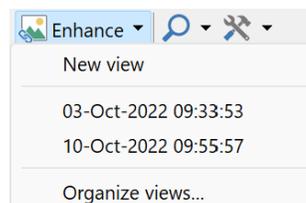
Organizing enhanced maps

This tutorial will show how to manage a molecule's enhanced maps.

Start Clone Manager and load the map file saved in the previous tutorial. On the map window toolbar click the 'Enhance' toolbar button.

Let's create a new view. The new view will start with the original molecule information. Make some changes, save the new enhanced view and close the window.

Again, click the Enhance toolbar button on the molecule viewer. Notice that there are now 2 views.

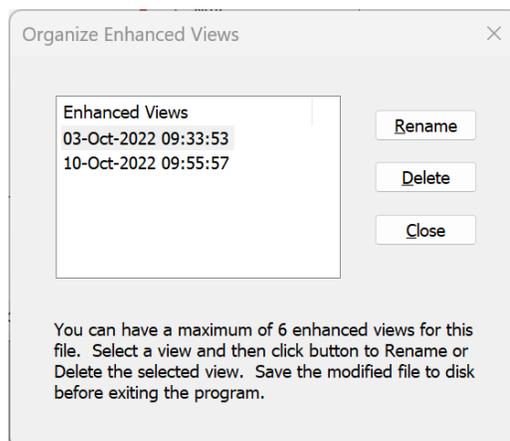


Click the 'Organize views' button. The dialog box shows the 2 enhanced views.

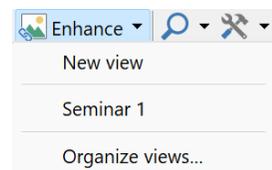
Rename an enhanced view: Select the first view and click the 'Rename' button. The current name is highlighted within a text edit box. Enter a name for the view, such as 'Seminar 1'. Press the 'Enter' key to complete the rename.

Delete an enhanced view: Select the second view and click the 'Delete' button. The view is immediately deleted.

Click the 'Close' button to close the dialog box.



Click the 'Enhance' toolbar button and confirm that there is now only one view and it has the name we changed.



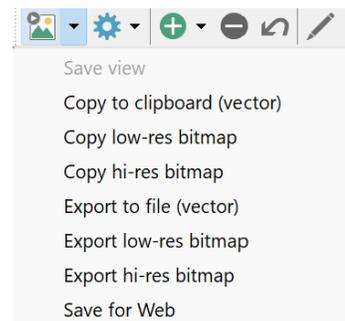
Save the molecule changes. In the next tutorial we will explore how to export the map in different graphic file formats

Exporting graphic file formats

This tutorial will show the options for exporting an enhanced map in different graphic file formats.

Start Clone Manager and load the map file saved in the previous tutorial. On the map window toolbar click the 'Enhance' toolbar button and select the view that you want to export.

Click the down arrow on the right side of the 'Save' toolbar button. Notice that the 'Save view' option is grayed out since we have not made any changes.



The other options provide multiple methods of exporting the enhanced map. The options are divided into 3 main groups:

Copy to clipboard: The first option copies the image to the clipboard as a vector image. This provides the highest resolution and most accurate image. Use this option to paste into another graphic editing program. We will expand on this option later in this tutorial.

The other copy options create bitmaps. Low-res bitmap uses 96 dpi resolution which is good for screen images. Hi-res bitmap uses 300 dpi which is good for printing.

Export to file: The next three options act in the same manner as copy to clipboard except that the output is saved to a disk file. This is most useful if you need to attach an image file to an email or report. Vector format is enhanced metafile or windows metafile. Bitmap formats include BMP, JPEG, GIF, TIFF and PNG. Choose whichever format you need for how you intend to use the image. In general, PNG is a good choice since it provides a lossless image with smaller file size.

Save for Web: This is a specialized option used to create a smaller image intended for adding to a web page.

Use molecule images in presentation programs

You can use presentation programs, such as Microsoft's PowerPoint, to create a custom presentation with additional labels and can show more than one molecule map.

More than one map: Create the enhanced images and copy, or export, the images. These map images can now be pasted, or imported, into your presentation graphics program. Within your presentation program you can resize each image and add text labels as well as arrows or other images.

Advanced editing: Programs like PowerPoint allow for advanced options for editing. For example, you can change the font size for an individual feature. Insert your map image (using vector format) into PowerPoint. Right click on the image and select option Group then Ungroup. Accept conversion to a drawing object. You can now select an individual item and make changes.