



First Time Plugin Installation (to read enhanced article online)

Support: isee@sgc.ox.ac.uk

- Identify and click on the link in the PLoS article. This will take you to the SGC's website with the enhanced iSee version of the article.
- You will reach a page which looks like this:



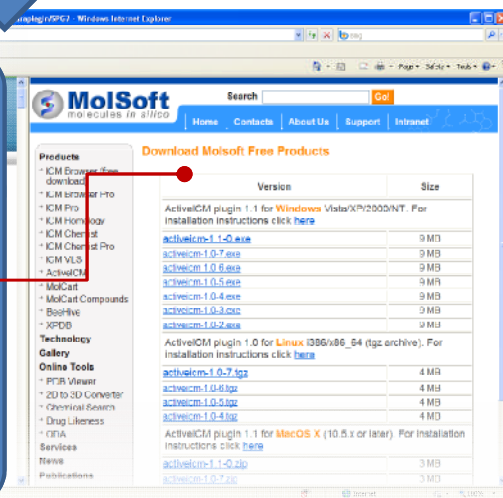
You'll need to install the activeICM plugin in order to see the 3D interactive window – please click on the link from the right window.

Upon clicking, you'll be taken to MolSoft – the provider of the activeICM plugin.

Please identify your operating system and follow the instructions on this document.

For more information about the plugin and the downloads:

www.molsoft.com/activeicm.htm



- Windows (XP, Vista, Windows 7)**
 - Download and run the latest installer (**in bold**) and follow the installation instructions
 - Close all web browser windows and restart web browser
 - Supported web browsers:** Firefox, IE, Opera or Chrome

- Mac OS X**
 - Download the latest version (**in bold**)
 - Firefox:** select 'open with DiskImageMounter'; a new window will open – click on the icon to launch the installer and follow the instructions
 - Safari:** the installer will be launched automatically
 - Close all web browser windows and restart web browser
 - Supported web browsers:** Safari 32bit, Firefox

- Linux**
 - Download the latest version (**in bold**)
 - `tar xzf activeicm-{version}.tgz` (to unpack the archive)
 - `cd activeicmplugin`
 - `sh activeicm-plugin-installer` (runs the installer; follow the installation instructions)
 - Close all web browser windows and restart web browser
 - Supported web browser:** Firefox

- After restarting your browser, open again the link to the enhanced version of the article.

iSee – Quick Reference Chart

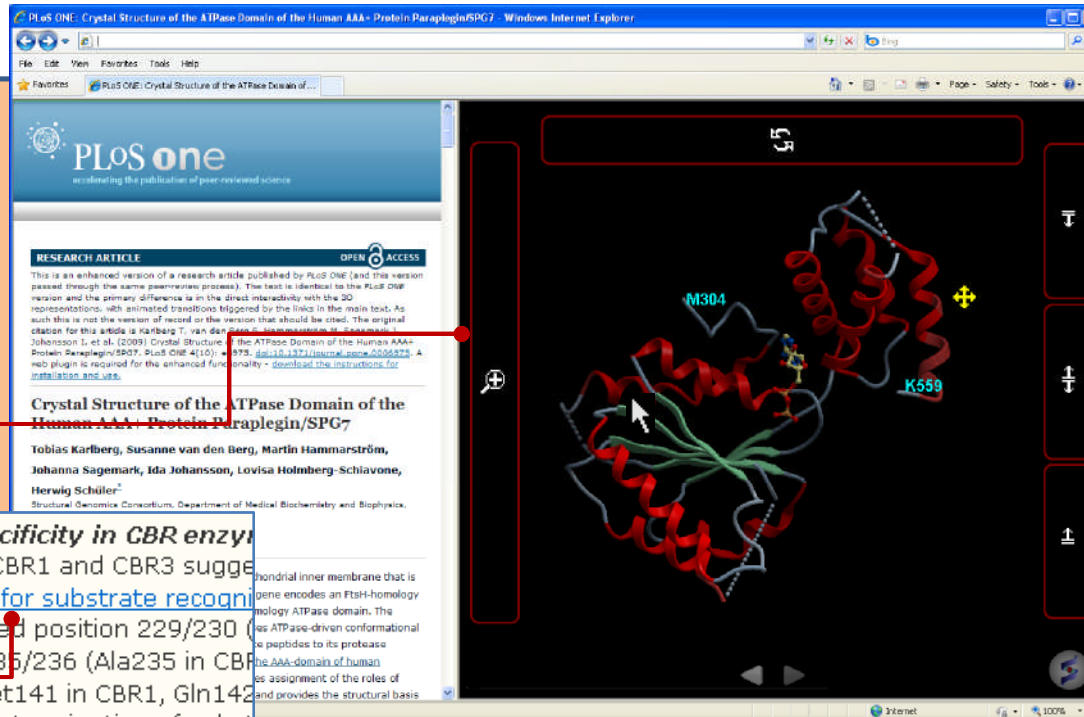
There are two main windows in every iSee session – one with text and static images (left) and another which allows interaction with 3D objects (right). The features and behaviours for each window are described below. **Support:** isee@sgc.ox.ac.uk

Text and images

- You can resize the browser's main window as well as the ratio between the text/ 3D windows. Place your mouse over the divider, left-click (keep pressed) and drag to resize.

Critical residues for quinone specificity in CBR enzymes
 Comparison of the active sites of CBR1 and CBR3 suggests three residue positions are critical for substrate recognition and catalysis. In particular, we identified position 229/230 (Pro229 in CBR1, Pro230 in CBR3), position 235/236 (Ala235 in CBR1, Pro236 in CBR3) and position 141/142 (Met141 in CBR1, Gln142 in CBR3) as the most likely candidates for determination of substrate specificity. To assess the effect of site-directed mutagenesis on the catalytic activity of the CBR1 and CBR3 enzymes, we expressed and purified the wild-type and mutant enzymes from *Escherichia coli* and measured their catalytic activity in the presence of various substrates. The results show that the mutant enzymes exhibit altered substrate specificity compared to the wild-type enzymes. In particular, the mutant enzymes show a preference for certain substrates over others, indicating that the identified residues are indeed critical for substrate recognition and catalysis. These findings provide valuable insights into the molecular mechanisms underlying the specificity of CBR enzymes and may have implications for the design of novel CBR-based biocatalysts.

- Underlined text is linked to a scene in the 3D window explaining that topic and can be clicked to activate the scene
- Once the scene is shown, you can interact directly with the 3D window to better examine the feature being presented.
- The navigation is not sequential: you can choose to see any scene, anytime, in any order.
- The font size of the text can be changed by using Ctrl+ and Ctrl-
- At any point you can reset the scene to the initial state using the 'reset' link in the text.



Interactive 3D

- Everything displayed in this window can be manipulated using the mouse
- The 3D window has several 'hot-zones' (marked as red boxes in the figure), which provides access to operations that change the scene's view
- Move the cursor into one of these zones to change the dragging function of your mouse (see below)

All the functions described below assumes clicking + holding on the button indicated (i.e. dragging):

move = rotation
 up/down = zoom in/out
 up/down = zoom in/out
 up/down = clip back plane
 up/down = clip back+front planes
 up/down = clip front plane

Middle button
 + move = translation

Right button
 move = selection (markers appear); select empty zones to remove selection

