MacVector® 9.5.4

for Mac OS X

System Requirements

MacVector 9.5.4 runs on any PowerPC or Intel Macintosh running Mac OS X 10.2 or higher, although we recommend OS X 10.3 or later for maximum compatibility. This release is a Universal Binary, meaning that it runs natively on both PowerPC and Intel based Macintosh computers. There are no specific hardware requirements for MacVector – if your machine can run OS X, it can run MacVector. A complete installation of MacVector 9.5.4 uses approximately 100 MB of disk space. MacVector 9.5.4 has been tested extensively on OS X 10.5 preview release 9a377a with no significant problems.

IMPORTANT NOTE FOR OS X 10.2 USERS. There are some incompatibilities between MacVector 9.5.4 and OS X 10.2. In particular, the new floating Font Selection dialog does not work, so you cannot change the default fonts used in the graphical map displays. If this is feature is important for your work, we recommend that you upgrade to a more recent operating system before installing MacVector 9.5.4.

Changes for MacVector 9.5.4

Licensing Changes

This release of MacVector no longer supports the use of USB Eve3 hardware keys for copy protection. There is a new replacement licensing implementation that ensures that only one copy of MacVector with a given serial number can be running on a network at any one time. All installers now create a temporary license so that you have 30 days to activate the full license. This can be done at any time by choosing "Activate License…" from the "Options" menu. If you believe you are entitled to a license and you have not already been contacted by MacVector, Inc, please send an e-mail to support@macvector.com with the license owners name and original serial number.

Bug Fixes

Several crash bugs in the ClustalW implementation have been fixed.

A crash when using the Phylogenetic Reconstruction analysis on sequences with names longer than 32 characters has been fixed.

ClustalW now correctly uses and reports the gap insertion and

termination parameters used in the alignment.

The number of gaps inserted and count of conserved residues are now displayed correctly after each alignment calculation.

MacVector now reads most LaserGene EditSeq files.

A bug saving and reading back in Sequence Confirmation assemblies between Intel and PowerPC machines has been fixed.

Custom fonts are now saved and loaded correctly in the Map Graphics window.

Bitmap graphic copies are now correctly turned on by default.

A crash during ORF analysis of certain sequences has been fixed.

The cut location of blunt and 3' overhang restriction enzymes is now correctly indicated when zoomed in to residue level in the Map window.

Changes for MacVector 9.5.2

Bug Fixes

The serial number and personalization details are now sticky so that once MacVector is installed on a machine, other users do not have to re-enter those details when starting MacVector for the first time from their account.

ClustalW can now be run using just chromatogram files as input.

Map graphics no longer get clipped at the top when printing.

You no longer see extraneous orphaned labels in the margins of multi-line map graphics.

The Sequence Confirmation/Contig Editor window now visually aligns sequences correctly when a font other than Monaco 9 is used for display.

Printing from the multiple sequence alignment Picture display now works with scaled print values and with alignments that are wider than a single page.

The "identities" and "similarities" labels in the multiple sequence alignment pairwise matrix output window have been swapped. Previously, these were backwards.

MacVector Assembler

When assembling plain sequences, MacVector now honors the default quality value setting in the phrap advanced parameter tab. This prevents

phrap from clipping overhanging sequences at the ends of the assembly in the mistaken belief that they are low quality vector.

Changes for MacVector 9.5.1

Bug Fixes

You can now align less than 4 sequences using ClustalW – a bug in MacVector 9.5 prevented alignments from being generated if only two or three sequences were selected.

The ClustalW guide tree window can now only be shown if 4 or more sequences have been aligned. Attempts to display this with fewer alignments in MacVector 9.5 generally caused a crash.

A bug where MacVector 9.5 would mix up the names of sequences after a ClustalW alignment has been fixed.

An error where thermal parameters in the PCR and Sequencing primer search functions were reported incorrectly on Intel machines has been fixed.

Changes for MacVector 9.5

Universal Binary

MacVector 9.5 is now a Universal Binary. It runs at full native speed on either PowerPC or Intel Macintosh computers. Our testing with Primer Design, ClustalW and Restriction Enzyme searching algorithms on Intel machines indicate a speed up of from two-fold to ten-fold, depending upon the sequence and algorithm used.

Quartz Graphics

The "Map" graphical windows in MacVector have all been reworked to use "Quartz" graphics. Quartz is the native graphical drawing interface for Mac OS X. You will notice the biggest difference in circular plasmid maps where text and graphics look far smoother on-screen than with previous versions of MacVector. Graphics copied from Map windows are now placed on the clipboard in PDF format which retains the high resolution and can be pasted into many applications (Adobe Illustrator, TextEdit, Pages, KeyNote etc) with no loss of resolution. However, many older applications, particularly Microsoft Office 2004 programs such as PowerPoint or Word, cannot import clipboard information in this format. To get around this limitation, MacVector also places graphical information on the clipboard in bitmap format. You can control the resolution used by MacVector for bitmap copies using a new "Graphic Output Options" dialog accessible from the Options menu.

By default, MacVector renders all on-screen Map graphics with anti-aliasing turned on. This can look blurry on high-resolution screens, so

there is an option to turn it off in the floating graphics palette window. This only applies to line graphics in linear mode. Text always respects the system-wide font smoothing option controlled by the System Preferences -> Appearance panel.

There is a new setting in the floating graphics palette window to enable shadowing in the Map graphical windows. You can turn this on to give your graphics a subtle 3D effect. An options dialog lets you control the shadow offset and the amount of blur to apply.

The multiple sequence alignment "Picture" window has been reworked to use Quartz graphics. The same advantages and limitations apply for this as for the Map graphical windows.

ClustalW

MacVector 9.5 now runs ClustalW as a background job, so you can continue to use MacVector while alignments are in progress. In addition, ClustalW has been upgraded to use a Universal Binary version of ClustalW 1.83, the latest available ClustalW build. You cannot edit a multiple alignment when an alignment job is in progress (indicated by a spinning progress icon in the toolbar), but you can run additional ClustalW jobs from other windows. If multiple cpus/cores are available, MacVector will run jobs in parallel, otherwise it will queue additional jobs until a cpu/core becomes free.

Fonts

Many areas of MacVector now use the OS X font selection dialog, including the Map graphic control dialogs and the multiple sequence alignment picture output options dialog.

You can now change the default font and size used by the single sequence editor, the multiple sequence alignment editor, the sequence confirmation editor and the chromatogram/trace editor. This is controlled by a setting in the Format Annotated Sequence dialog available in the Options menu. For performance reasons, you are restricted to using non-proportional fonts.

Miscellaneous Enhancements

You can now select ORF result graphical objects in the ORF Map result windows.

You can now view the first tree in a NEXUS format multiple alignment file. Use the "Guide Tree" option to view the tree. This lets you use MacVector to generate nice alignments, export the alignments for advanced phylogenetic reconstruction in e.g. PAUP, then view the generated tree in MacVector.

There is a new options button in the sequence editor toolbar that opens the Formatted Annotated Sequence options dialog.

There is a new recalculate button in the multiple sequence editor toolbar that lets you quickly re-align using ClustalW.

It is now much easier to select individual restriction enzymes in a crowded Map window – only the label area is now clickable.

The multiple sequence editor now lets you hold down the <shift> key to select a range of sequences for copy/delete.

The Entrez and BLAST code has been updated to use the latest version of the NCBI toolkit. This has fixed a number of crashing bugs and improved performance across the board.

The restriction enzymes shipped with MacVector have been updated to the latest available from the REBASE site.

Most of the common windows in MacVector now respond to both up/down and left/right scrolls using a mighty mouse.

You can turn off headers/footers from printed result windows through a toggle in the new "Graphic Output Options" dialog accessible from the Options menu.

The Online Update Notification functionality has been improved to notify you of new releases without being overly annoying.

Bug Fixes

An "insert" bug was fixed in the main sequence editor. If you inserted a single residue in the middle of a feature, features 3' to the insertion site were not updated correctly.

You no longer have to reinstall MacVector after moving to a new machine with the Apple Migration Utility.

A reverse-complement bug in the Test PCR Primers dialog was fixed.

Reading of FastA files in either single sequence or multple sequence format has been improved.

Various problems importing files with embedded clustalw guide trees have been resolved.

Support information

For assistance with MacVector, please contact your local MacVector, Inc office. You will need a current MacVector maintenance contract to be eligible for technical support other than for basic installation problems. New sales of MacVector include 12 months of support that also entitles you to any upgrades to MacVector released during the maintenance period.

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`http://www.macvector.com`

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