

MacVector 14.0

for Mac OS X

The online updater for this release is 44.1 MB in size

System Requirements

MacVector 14 runs on any Intel Macintosh running the **64-bit** version of **Mac OS X 10.6** or higher. There are no other specific hardware requirements for MacVector – if your machine can run the 64-bit version of OS X 10.6 or above, it can run MacVector. A complete installation of MacVector 14 uses approximately 175 MB of disk space. If you are running Mac OS X 10.6, please be sure to read the section below on **OS X 10.6 Limitations**.

Installation and License Activation

You can choose to install MacVector in one of two ways; if you want to install MacVector for all users of the computer, simply drag the MacVector folder onto the Applications folder. You will be prompted for a system administrator account and password during this copy. If you don't have administrative privileges, or if you want to install it for just your own use, you can install MacVector in the /Applications/ folder in your own personal home directory. To do that, double-click on the **OpenUserApplicationsFolder** icon to open the folder in a separate window, then drag the MacVector folder into that window.

Once installation is complete, you must run MacVector and enter a valid license owner, serial number and activation code if one does not already exist on your computer. This information is usually sent by e-mail but is also printed on the inside of the CD sleeve if you opted to receive MacVector on physical media. If you previously installed an earlier version of MacVector and have a serial number with a maintenance end date of February 1st 2015 or later, MacVector 14 will automatically use your existing license and you will not be required to enter the details again. NOTE: one important change for MacVector 14 is that you can now activate a license for your own use without requiring Administrative privileges.

Changes for MacVector 14.0

64-bit Architecture

MacVector is now a fully 64-bit application. The main utility of this is that MacVector can take full advantage of all of the memory installed on your computer, allowing it to handle larger sequences and alignments. This is most noticeable in the **Multiple Sequence Alignment**, **Align To Reference** and **Assembler** functions where longer reference sequences and increased numbers of (e.g.) fastq-formatted Reads can be imported and aligned.

The move to 64-bit has also allowed much longer sequences to be viewed in the **Align To Reference** editor – previously, sequences would not display properly when scrolling

horizontally past about 2,000,000 base pairs.

MacVector14 is no longer dependent on the deprecated “CarbonLib” compatibility library. This helps ensure that MacVector will continue to work with future releases of OS X where this library is likely to be removed.

Primer Database Support

MacVector now directly supports the concept of a “Primer Database”. There is a new **Primer Database.nsub** file installed in the `/MacVector/Subsequences/` folder, populated with a number of common universal primers. This is used as the default database file, but you can easily choose any file of your own, or add your own primers to this file, or to a copy of it. The Analyze menu has been streamlined to remove the old **Primers** submenu.

Primer Database Search – this is a new function in the **Analyze** menu. It is similar to the **Nucleic Acid Subsequence** search function, except that it uses **Primer Database.nsub** as the default search file and has a few extra settings to simplify handling primers with tails and/or mismatches to the target sequence.

Quickest Primer – this now lets you save primers direct into the current primer database and also lets you retrieve primers from the database via a simple popup scrolling menu.

Primer Design (Primer3) – you can now select primers in the spreadsheet result window and add them to the primer database and select primers from the database using the popup scrolling menu.

Assembler Bowtie Improvements

Bowtie has been updated to support version 2 which can handle gaps in the aligned reads. This allows the use of much longer input reads (which typically have more indels) and provides far more accurate coverage information because, with the older version, reads with indel mismatches would be discarded even if they were “real” matches.

Miscellaneous Enhancements

The **Primer Design (Primer3)** “Test” mode now has a text output similar to the old **Test PCR Primer Pair** functionality, allowing you to view details of all of the possible products generated by the pair of primers.

There are some cool new “Rounded Rectangle” feature graphics types.

You can now directly select residues in the **Map** view in the default “zoom” mode. This lets you use the **Map** tab for all editing operations except for actually typing residues (but you can select then click on the **Editor** tab to do that).

MacVector now supports the new *Regulatory* GenBank feature type.

You can import features into a sequence with files formatted using the Sequin Table format.

More options in the way the sequence **Editor** and **Map** views are initialized are now saved to preferences so that MacVector “remembers” how you like to view your sequences.

The cut sites and recognition sequences of restriction enzymes are now listed in the text outputs.

Colored residues or background in the single sequence Editor tab are now only displayed if the underlying feature is located on the sequence line. This provides much finer control over which regions of the sequence you would like to see highlighted in color.

MacVector 14 Limitations on Mac OS X 10.6

In order to take advantage of many of the built-in enhancements in more recent releases of OS X, if you run MacVector 14 on OS X 10.6, you will find there are certain limitations;

- (i) The mouse pointer does not change in a context-sensitive way when moving over different interface graphical items.
- (ii) Tool tips within the editors do not display.
- (iii) The Feature tab lists only display the first qualifier for each feature (but if you double-click to open the editor, you will see that all of the qualifiers are present).
- (iv) The Primer Database selection popup scrolling menus are not available – you should instead open the actual .nsub file and copy the primer sequence from there.
- (v) The Sparkle automatic online updater is non-functional.

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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When contacting Customer Support with a technical problem, please be prepared to give your product serial number as well as a detailed description of your problem and any error messages you encounter. Visit the MacVector Web site for details of any available updates, and any relevant information that could not be added to these release notes in time for publication:

<http://www.macvector.com>