

MacPlasmap 2.1

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Overview

MacPlasmap version 2.1 is a user-friendly program that facilitates the drawing of linear and circular maps of plasmids. As in its predecessor, MacPlasmap 2.0, the maps can be modified with insertions and deletions, genes can be drawn and labeled, restriction sites can be indicated, and the files can be exported as PICT or TEXT formats. This latest version has some added features: DNA sequences in certain formats can be used directly to generate maps; text can be converted into features on the map and conversely, map features can be converted into text; the maps can be drawn with rulers; and under certain circumstances, GenBank and EMBL features can be converted into map features. As the name indicates, it is a Macintosh program, and it makes good use of menus, but it is not accelerated for Power Macs and is somewhat slow opening files and modifying figures.

System Requirements

MacPlasmap 2.1 requires System 7 or above, and a minimum of 1MB of RAM (though this is not stated in the documentation). Installation is simple and the program supports all standard printers. It is useful to have a color monitor to enhance different features on the map. Evaluation of this program was conducted on a PowerMac 7100/66 with 24 MB RAM.

Key Features

MacPlasmap 2.1 allows DNA sequences in a limited number of formats (GenBank, EMBL, native DNA Strider, Plain Text, BioNet, NBRF, GCG, and IntelliGenetics) to be converted into maps. Figure 1 was generated from a linear DNA sequence in DNA Strider format. The three "genes" (ori, amp, and arg7) were drawn manually, but the restriction sites were inserted by selecting a subset of enzymes from a menu containing a long list of sites recognized by the program. This particular plasmid was converted into a circle (Figure 2) by adjusting the map parameters. When the **Circularize** command was used, the program quit.

Converting Features to Text

Figure 3 shows how the map features can be converted into text. Similarly, text can be used to generate features. For example, if the position and length of the arg7 gene is provided, the program will generate the appropriate feature on the map. This ability is very nice, since genes can be drawn easily at exactly the right location, instead of having to manually draw a box at the approximate location.

The documentation is awkward, since two manuals are provided: one covers the basics that were available in version 2.0, while a smaller supplemental manual

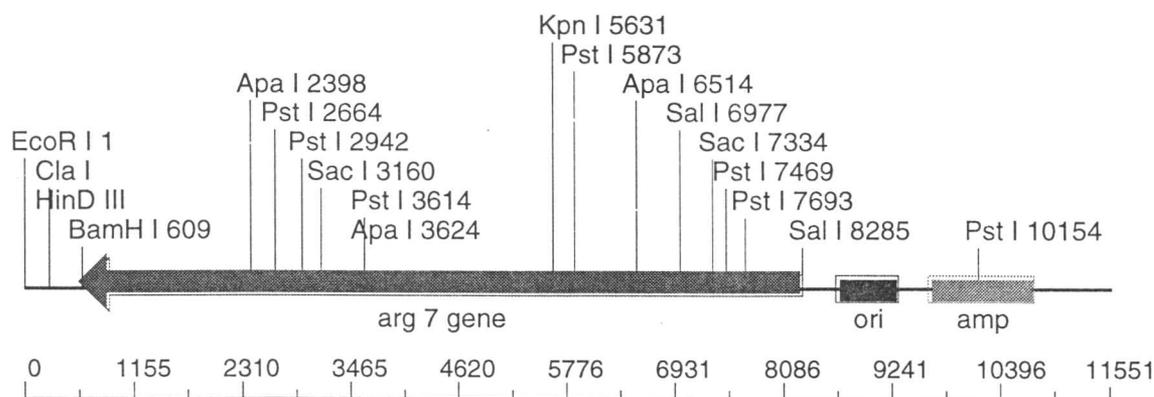


Figure 1. Linear map of a plasmid that was generated from a DNA sequence file. The three genes were drawn manually and the ruler is in base pairs.

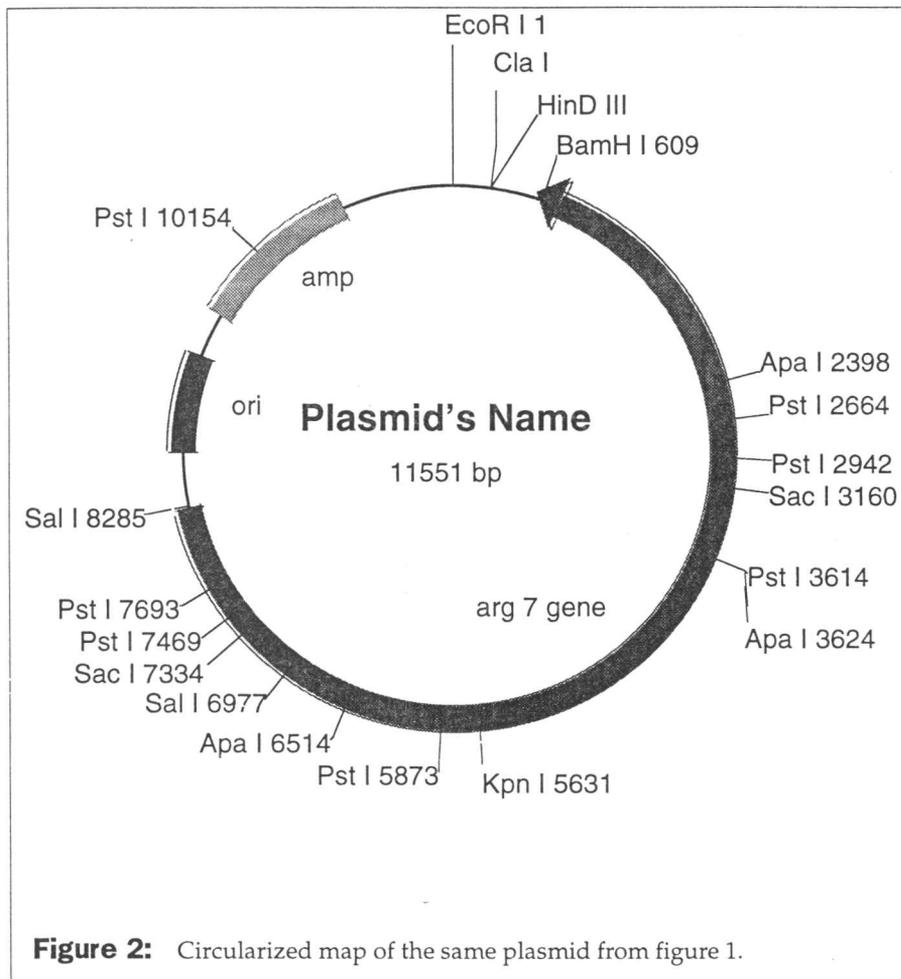


Figure 2: Circularized map of the same plasmid from figure 1.

tain functions. However, the program is intuitive enough for most functions, so the documentation is not required by anyone who has Macintosh experience and is familiar with plasmid maps.

Conclusions

MacPlasmap 2.1 is a convenient program to use when generating plasmid maps. Since many of its features resemble those of software that is available as shareware, and many molecular biology packages are capable of drawing rudimentary plasmid maps, the price tag may drive a user to search cyberspace for a free alternative. However, if there is a need to modify plasmid maps for publication or presentation, the final product is quite nice and easy to generate, using MacPlasmap.

This program does what it is supposed to do, and as a result deserves a high rating. Its negative features are a few bugs, a high price, and modest documentation. It rates a 6 out of 10.

Availability

MacPlasmap 2.1 costs \$245, does not require an eve key, and is available from:

CGC Scientific, Inc.
 P. O. Box 8171
 St. Louis, MO 63156
 (314) 652-6533
 fax (314) 652-6631
 email cgscsci@aol.com

covers the version 2.1 improvements. This requires the user to consult both books in order to understand cer-

Apa I	2398	3624	6514
BamH I	609		
Cla I	257		
EcoR I	1		
HinD III	263		
Kpn I	5631		
Pst I	3614	7693	5873 2942
	10154	7469	2664
Sac I	7334	3160	
Sal I	8285	6977	
amp	9645-10771		
arg 7 gene	8288-606		
ori	8663-9327		

Figure 3: Features of the map in figure 1 converted to text.

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