Installation

System Requirements

No special hardware or software is required, but a hard disk is strongly recommended and required if you want to use MacPattern in conjunction with the PROSITE and BLOCKS databases.

MacPattern was successfully tested on a wide range of Macintosh models, from the Mac Plus up to the Quadra and PowerBooks. It is fully compatible with MultiFinder and System 7. Some tasks can be performed in the background, giving plenty of time to the currently active process.

MacPattern is System 7-friendly and supports System 7 features such as Aliases or AppleEvents. It also works fine in 32-bit mode and with Virtual Memory turned on.

It is possible to use the sequence databases on the EMBL CD-ROM as input files for MacPattern in order to check newly developed patterns against the whole database. This application of MacPattern was only tested with the Apple CD-ROM drive, however, not with any third-party drives.

MacPattern can be run from a network file server, because any temporary files are stored in the local System folder (or Preferences folder). However, if a database is stored on a server, it will not be possible to save changes to the database index file.

Software Installation

MacPattern can be used with A. Bairoch's PROSITE pattern database, S. Henikoff's BLOCKS database, or with your own, private pattern or block database. To use MacPattern with PROSITE and/or BLOCKS follow the instructions given in this chapter. See 'Pattern Databases' and 'Block Databases' for more information if you want to use a private database instead.

Step 1:
Make sure that you have got all parts of the MacPattern package (see Appendix A).

Step 2:
To use PROSITE get a copy of the PROSITE database, e.g., from the EMBL File Server or the EMBL CD-ROM. You will need at least the prosite.dat file, but you should use the prosite.doc file, too. The speed of analysis is not affected. The BLOCKS database can be obtained from the same sources. You will only need the blocks.dat file.

Step 3:
Check whether your copies of PROSITE and BLOCKS are already in Macintosh format. If not, they have to be converted to Macintosh format first. If you received the database files by

electronic mail, ftp or some other means of network file transfer, conversion would normally not be necessary. If you copied the files from the EMBL CD-ROM, however, conversion is required.

On the Macintosh, the end of a line of text is marked by a so-called carriage return character, whereas MS-DOS systems and the EMBL CD-ROM use the combination of a carriage return and a linefeed character to delimit lines. Open your database files with a word processor such as MS Word or MacWrite. If you see a small square box (which is how linefeeds appear on the screen) at the beginning of every line except for the first one, then your files need conversion, i.e. you have to strip off the additional linefeed characters first. If the files look normal to you, then you can skip directly to step 4 now.

File conversions can be performed in several ways:

- Numerous public domain utilities are available for this purpose, e.g., MacSink, DeskZap, etc. See the documentation accompanying these tools for details.

- You may use the Apple File Exchange (AFE) program provided on one of your system disks. Please refer to the accompanying documentation to learn how to convert MS-DOS text files to Macintosh text files.

- You may also find the Find/Replace function of your word processor useful if it allows you to search for non-printing characters. Search for all occurrences of the linefeed character and simply enter an empty replacement string. Make sure you save your modified document as pure text (choose the “text only” or “ASCII only” option of your word processor)!!!

Step 4:
Now you are ready to create the database index file(s). Start MacPattern by double-clicking its Finder icon and select the menu command New Index from the File menu. A submenu gives you the choice of creating an index for PROSITE or BLOCKS. A standard directory dialog box appears and you are prompted for the name of the database file. Locate prosite.dat or blocks.dat, depending on which index you want to create, and open it. Do not select prosite.doc! If you want to index PROSITE and, for some reason, MacPattern cannot find prosite.doc in the same directory as prosite.dat, you will be notified and MacPattern will only use the prosite.dat file for building the index. MacPattern creates an index file called prosite.inx or blocks.inx in the same directory in which the database files are located. It will also ask you whether you want to sort the database entries alphabetically by entry name or leave them in their original order.

Attention:
If you create an index file for PROSITE, MacPattern will complain about the entries PS00267 (TACHYKININ) and PS00539 (PYROKININ).

The reason for this behaviour is the pattern definition of tachykinins:

F-[IVFY]-G-[LM]-M-[G>]

^^^^

and pyrokinins:

F-[STV]-P-R-L-[G>]

^^^^

The carboxy-terminus symbol '>' is treated like an amino acid, and I think that this is not covered by the definition of the PROSITE pattern syntax as given in the PROSITE User Manual.

Personally, I use a text editor to replace the PA lines in these entries by
PA F-[IVFY]-G-[LM]-M-G(0,1) and
PA F-[STV]-P-R-L-G(0,1), respectively.

Note, that this pattern definition is not exactly equivalent to the original one. With the new PA line you may detect a pattern such as FIGMM in the middle of a protein, whereas it is only allowed at the carboxy terminus.

Step 5:
Done! You can now use MacPattern with the PROSITE or BLOCKS database.

Using MacPattern is almost self-explanatory. For detailed information you may want to refer to this manual, the on-line help function or Balloon Help (if you are running System 7).