

PSB Documentation

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REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

1	PSB Documentation	1
1.1	Welcome to PSB	1
1.2	Short Description	2
1.3	System Requirements	2
1.4	Features List	3
1.5	Greetings	3
1.6	Installing PSB	4
1.7	Getting Started	4
1.8	User Interface	4
1.9	ARexx Interface	5
1.10	PROSITE Database	6
1.11	Inside PSB	6
1.12	History	7
1.13	Bugs	7
1.14	Copyright	8
1.15	Licence	8
1.16	Disclaimer	8

Chapter 1

PSB Documentation

1.1 Welcome to PSB

PSB - PROSITE DATABASE BROWSER V 1.00

1. INTRODUCTION

- 1.1 Short description [↔](#)
.....What is [↔](#)
PSB ?
- 1.2 System RequirementsWhat you [↔](#)
need to run PSB
- 1.3 Features list [↔](#)
.....Complete PSB [↔](#)
feature list
- 1.4 Greetings [↔](#)
Greetings from the author

2. INSTALLATION

- 2.1 Installing PSB [↔](#)
.....How to [↔](#)
install PSB

3. USER GUIDE

- 3.1 User Interface [↔](#)
.....GUI complete [↔](#)
reference
- 3.2 ARexx Interface [↔](#)
Controlling PSB via ARexx
- 3.3 PROSITE DatabaseWhat is [↔](#)
PROSITE database?

4. TECHNICAL GUIDE

- 4.1 Inside PSB [↔](#)
..... [↔](#)
Technical details

4.2	History	↔	
		↔
	Version & revision list		
4.3	Bugs	↔	
		
	Bug reporting		
5.	DISTRIBUTION		
5.1	Copyright	↔	
		↔
	Copyright notice		
5.2	Licence	↔	
		↔
	Distribution licence		
5.3	Disclaimer	↔	
		↔
	Legal disclaimer		

1.2 Short Description

Short Description

PSB (PROSITE BROWSER) is the first Amiga browser for PROSITE database. In few words it helps browsing and scanning a useful 2Mb database available at the University of Geneva. PSB at the present time only allows browsing PROSITE.doc but in the future it will be completed by a protein sequence analysis package that will make use of PROSITE.dat, and that possibly will include many other features.

PSB for now is intended for students & others that need a fast reference on any protein family, core-pattern and related stuff. While studying I often use PSB to check if there is something I don't know about certain receptors or proteins.

In order to use PSB you need PROSITE.DOC, available on AMINET too.

I really don't know how many people need such tools on Amiga but if so many molecular biology & physics tools are yet present for Mac & PC I really wonder why not so for Amiga (given such a powerful O.S.).

I really need a feedback from students and biomol/biophys guys that think I am on the right way. :-)
So e-mail comments & suggestions to peru@maya.dei.unipd.it

1.3 System Requirements

System Requirements

PSB need MUI 3.x, Amiga O.S. 3.x, and about 500Kb of memory for internal lists and buffers. Searching buffers may require additional 10-400Kb.

MUI 3.x can be found on every AMINET site, CD, and many BBS.

PROSITE.doc can be found on AMINET or at <http://expasy.hcuge.ch>

1.4 Features List

Features List

- o Fully multitasking.
- o MUI fully configurable user interface
- o On line bubble help.
- o PDOC loading by name or PDOC access number.
- o Simply and fast browsing gadgets.
- o Easy saving and printing of current entry.
- o Fast scan of whole database for pattern matching.
- o Internal buffer for matched entries.
- o Information text on aminoacids & nucleotides code.
- o ARexx port for power users.
- o CX exchange broker for better control.

1.5 Greetings

Greetings

Thanx to Amos Bairoch for his great idea: PROSITE!

Many thanx to Stefan Stuntz for MUI, buy it, it does really worth the price! I coded other GUI's using intuition, gadtools and BOOPSI but are all nothing respect to MUI easy of use and configurability, best feature is surely the auto-layer-rescaling and positioning so easy to use that I changed completely my GUI after 85% of PSB was done and this just in few minutes !!! :)

Thanks to my friends:

Andsk (Andrea Rafreider) that has written the installer script and that constantly updates my internet A4000 setup.

Amex (Amedeo Petrella) and Ire (Ireneo Toffano) that debugged PSB and suggested improvements for future releases.

Zanna (Claudio Zanella) that we usually meet at his AmiProBBS for Pizza&Amiga parties.

PS) Call AmiProBBS! Gb of Amiga files on line, every AMINET CD and much other stuff:

AmiProBBS 24/24h Zyxel Elite 28.8K
BBS +39-49-604488 Voice +39-49-8641713

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1.6 Installing PSB

Installing PSB

Installation is very simple thanks to Amiga Technologies official installer. Simply run the installer script and follow on line requests and instructions.

If you want do it manually then follow these steps:

- Copy PSB drawer where you want in your hard disk.
- Open a shell and ASSIGN PSB: to the PSB-drawer.
- Add to your S:User-Startup file "ASSIGN PSB: PSB-drawer" entry.

1.7 Getting Started

1.8 User Interface

User Interface

Gadgets

Help leaving the mouse pointer resting on any GUI gadget will popup a bubble help text.

PDOC shows current PDOC access number and allows changing and loading another document just clicking and moving a popup slider.

Entry text shows the complete title of currently selected entry.

Entry popup allows selection of any entry by title.

Info toggles a information text on IUPAC codes for aminoacids and nucleotides and a detailed reference on PROSITE pattern syntax.

Save saves the current entry with current title as filename in "PSB:" directory. A file with the same name is always overwritten.

Save As pops up an ASL requester and saves the current entry with given name in chosen directory.

Print prints the current entry on preferences printer, if printer is not on line, PSB will sleep until printer device reply with an OKAY/CANCEL message, please wait for printer device requester.

First, Last and arrows load respectively the first or the last entry or step forward and backward through database entries.

Search scans whole database looking for selected string. In this version search is case sensitive. Every hit will be buffered in a special list. The list is cleared before any new scansion.

Search string inputs a pattern to search for.

Buffer text shows the complete title of currently selected buffer entry.

Buffer popup allows selection of search buffer entries by title.

Buffer arrows step backward and forward through buffer entries.

Text window shows currently selected document, text is scrollable.

Menus

About Information on version of PSB, author and ARexx port.

Save, Save As, Print see gadgets.

Iconify Iconify application. This action is possible also via CX exchanger utility and MUI popup menu.

Quit Exits PSB.

1.9 ARexx Interface

ARexx Interface

PSB include an ARexx interface. Port name consists of basename plus an index number. This allows multiple PSB windows to work in multitasking without sharing the same public message port for ARexx messages exchange.

The first time PSB is run the public port name will be "PSB.1", but you can check the current ARexx port name just selecting "About PSB" menu item.

At the present time PSB V1.00 provides only 1 ARexx command, in future versions and revisions all other GUI actions will be implemented and more.

ARexx Commands

QUIT Simply exits PSB without any requester.

1.10 PROSITE Database

PROSITE database

PROSITE database consists mainly of two files, "PROSITE.doc" and "PROSITE.dat". These files form a complete dictionary of protein sites and patterns assembled by Amos Bairoch at the Medical Biochemistry Department of Geneva University. The database helps determining what is the probable function of uncharacterized proteins translated from genomic or cDNA sequences. It consists of a database of biologically significant sites and patterns formulated in such a way that with appropriate computational tools it can rapidly and reliably identify to which known family of protein (if any) the new sequence belongs. While "PROSITE.dat" is to be considered the real database, "PROSITE.doc" is useful complement to the former and could be really considered a protein families database.

For detailed informations on PROSITE and for database updates contact <http://expasy.hcuge.ch>.

1.11 Inside PSB

Inside PSB

PSB has been developed with A4000 platform, SAS 6.56, MUI 3.3 GoldED and many other tools that runs in multitasking and that makes great Amiga and Amiga O.S.

PSB makes use of memory pools method in order to avoid memory fragmentation. No memory loss or enforcer hit has been detected.

PSB on startup tries to load "PSB:PROSITE.doc" and if not present quits and releases resources. Then it looks for "PSB:psb.idx" where there is stored every information PSB need to retrieve PDOCS. If the index file is not present, PSB creates a new one and saves into "PSB:" directory.

When updating "PROSITE.doc", index need to be rebuilt to be consistent with new informations and offsets; were it the case, it is simply sufficient to delete the old "PSB.idx" file and let PSB create a new one.

Due to the length of "PROSITE.doc" database (nearly 2Mb at the present time but bigger and bigger in the future) and to the memory constraints of average user (see students), PSB explicitly avoids loading whole database in memory, it just loads an index and builds up an internal exec bidirectional list with pointers to the real disk based database. This method allows loading an entry only when required and wasting only few Kb for loading buffer.

For database search the question is different: an entry by entry load and scan routine is a time lengthy process. For this reason PSB tries and allocates some 400Kb fast memory and, in case of failure, tries again with 200Kb, 50Kb, 10Kb buffers respectively. A vanilla A1200 not overloaded should have no problems at all. The bigger the buffer PSB is able to allocate, the faster the buffer scanning will be.

1.12 History

History

V1.00 (25.03.96)

- o First AMINET release.

1.13 Bugs

Bugs & bug reporting

For bug reporting, be sure that bug is reproducible at given conditions. Report the exact configuration of your platform, the version of PSB used and of AOS (Amiga O.S.) and the circumstances that trigger the buggy behaviour.

Some strange behaviour may be due to MUI library and, were it the case, it could be present in other MUI applications.

Bugs could be reported via postal service or (much better) via e-mail to the following address:

Stefano Peruzzi
Via S. Dall'Arzere, 23
I-35138 Padova - ITALY
peru@maya.dei.unipd.it

Possible bugs & other stuff

- * Window area damages due to ASL or system requesters are fixed using "smart refresh" for PSB in MUI settings.
Also window position automatic snapshot, iconification and all graphical user interface parameters are fully configurable by

user with MUI preferences program.

- * Printing current document without printer on line puts application to sleep for while, it could seem a deadlock condition but it is sufficient to wait for the proper requester from printer device.
- * Using MCP multi-commodity with SaveGIRPort option, could severely slow down PSB video refresh, causing the gadget imagery to be damaged when moving the sliders or using the popup gadget.
- * After first time you entered (by clicking) the string gadget, the string gadget itself activates whenever the PSB window gets the active one or after de-iconification.
This behaviour does not seem related to any cx or patch present, because it persists on vanilla A4000 and A1200 with MUI 3.3, and it is present in all other MUI 3.3 applications.

1.14 Copyright

Copyright

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This software has been entirely developed by the author who owns all rights on his product. The author is free to change the copyright conditions at any moment.

1.15 Licence

Licence

PSB is freely distributable provided that no more than a nominal fee is charged to cover costs of media or network transmission and that the PSB distribution archive is kept intact.
PSB could be included in any CD, BBS, Internet and Aminet site.

1.16 Disclaimer

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