

Serolis

Dot-plot software for literal and genetic sequences and DNA translation

Serolis is a small tool to investigate sequences visually by dot-plots. It allows to process strands of several hundreds or thousands of symbols and to interactively zoom into the plots. For genetic investigation it has build-in tables for DNA to protein translations and can BLAST sequences via web-access. Thus, one can easily execute a full workflow without 'program-hopping'. Beside normal text files Serolis imports FASTA and Multi-FASTA files. The software can be directly run from any USB storage device without installation, what makes it an interesting tool to take with.

License/Terms of use

This software is donation-ware. Even when you use it sporadically, it is strongly recommended to donate a voluntary amount for keeping it up to date, investments in new techniques and even to accredit the authors work. Proposed amounts per installation for non-commercial, scientific and civil use are given during start-up and start with ~10 Euro . But any other fundings are also welcomed ;-). If you use the program for your scientific work please reference it.

Disclaimer

The program is delivered 'as is'. Functionality has been checked by the author but a guarantee can not be given. This means the author is not responsible for incorrect results, unreliable data or anything else that is related to the use of the program. The software has been carefully checked for errors. Anyhow a complete freedom of errors can not be guaranteed. Thus, it is recommended that you control results produced with this software.

Operating system

Serolis - Software package for dot-plot creation

Written by Jan Schulz

Thursday, 15 May 2008 16:06 - Last Updated Thursday, 23 April 2009 13:33

Serolis was written for Windows 2000, XP and Vista operating systems. No guarantee is given for the operating systems Windows 95 and Windows 98. Serolis was tested to run in emulated Windows environments on Mac OS X. In tests Serolis was found to run without problems for strands of several hundreds to thousands of symbols when enough memory was available.

Since version 1.0 Serolis processes Unicode characters. This allows investigation of non ASCII characters, but also limits the application to the operating systems Windows 2000, XP and Vista. For compatibility reasons Serolis v0.9 release is still available.

Download

File	Version	Description	Updated
Serolis	1.2.0.7	Serolis dot-plot software with Unicode support	28 th
Serolis	0.9.9	Serolis dot-plot software for Windows operating systems	22 nd July 2008

Schematic

Overview and explanation how dot-plot-are created, modified and interpreted is found on the algorithms section of this web-site.

Screenshot

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The screenshot displays the Serolis software interface. The main window is titled 'Serolis' and contains several panels:

- Sequence workspace:** A list of sequences including *Eus. perdentatus* 686 bp, *Monoculodes* 686 bp, *Glyptonotus antarcticus* B101, *Plakarthrium punctatissimum* B338, *Ceratoserolis cornuta ssp. dinae* B001 (highlighted), *Ceratoserolis trilobitoides s.str.* B094 (highlighted), *Ceratoserolis meridionalis* B156, *Ceratoserolis pasternaki* A099, *Cuspidoserolis luethjei* A059, and *Cuspidoserolis johnstoni* A043.
- Sequence preview:** Shows the sequence for *Ceratoserolis trilobitoides s.str. B094* with a length of 486. The sequence is:


```
AGGGGACGACAAGACCCTATAAAACCTTATTTTAAACAGCCTATTTACAAGAACTAAAACAA
TAAAAAATTTATACTGGGGCGGTAAAATTTAAGTAATTATCA7TTTTTATTCTAACAA7TTTT
ATGACTTTTATTACCTCGTTTTAAAAACA AAAACAAGCTACTTTAGGGATAACAGCACTATAT
TTTCTTAGAG7TCGTATCCGCCGAAAATGTT7TGACCTCGATGTTGAATTCAGGGCCCTCTAT
AAAACAGCTTTTATGCCAGGAAGTCTGTTCCACTTATAACCCCTC
```
- List of sequences Serolis has available in workspace:** A list of sequences with their lengths.
- frmStatistics:** A panel showing a bar chart and a table of nucleotide frequencies (C, T, A, G) for the selected sequences.

	C	T	A	G
<i>Ceratoserolis cornuta ssp. dinae B001</i>	84	165	165	70
<i>Ceratoserolis trilobitoides s.str. B094</i>	85	167	162	72
<i>Ceratoserolis meridionalis B156</i>	97	153	160	70
- Dot Plot:** A dot plot comparing *Ceratoserolis cornuta ssp. dinae B001* (y-axis, 20-460) and *Ceratoserolis trilobitoides s.str. B094* (x-axis, 50-250). The plot shows a strong diagonal correlation, indicating high sequence similarity between the two sequences.
- Sequence Alignment:** A table showing the alignment of segments from the two sequences.

Seq 2 (rev)	262
Seq 2 (rev)	AGTTTCTTGTAAGTAGTGCCTTAA
Seq 1	CTCCTAGTATTGT
Seq 1	11
Seq 1	CTCCTAGTATTGT
Seq 2	AGGGGACGACAAGACCCTATAAAAC
Seq 2	212

Screenshot of Serolis.