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The structure of genomes

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Abstract

The particular interest of David Ussery and his group is in creating 'structural atlases' of genomes from a detailed analysis of variations in DNA structure.

Content

The particular interest of David Ussery and his group is in creating 'structural atlases' of genomes from a detailed analysis of variations in DNA structure, using six mechanical-structural criteria, such as intrinsic curvature, stacking energy and DNase I sensitivity. The result is a visually arresting image of information pertaining to the functional and structural organization of a genome. The site focuses on those completed genomes and chromosomes that are publicly available, and currently contains 34 genomes. As well as the structural atlases of these genomes, and a table showing the status of 43 genomes either complete or near completion, the site has information on plasmids, promoter-region analysis, genome size and gene numbers, and references to the published sequence. It is also an excellent gateway to further information on these genomes, including genes and sequences, pages on the biology of the organisms being sequenced, and the funding agencies concerned.

Navigation

This site is most reliably accessed through the Center for Biological Sequence Analysis (CBS) home page and clicking link to 'CBS prediction services' and then 'GenomeAtlas'. Moving around the pages is easy, although some users with small screens may find the frames version inconvenient. There is a no-frames version, and a text-only version for those viewing the pages on a slow connection. Currently, there is no means of searching the pages for specific information, but ample links to and from the main page enable user-guided searching.

Reporter's comments

Timeliness

Last updated 9 December 1999, and appears to be updated bi-weekly or monthly.

Best feature

This is one of the most up-to-date sites I have found for tracking progress in genome sequencing. Most sites update sporadically or once every two months, but this site appears to be updated more frequently. In addition, the information on the biology of the organisms being sequenced, such as promoter-region analysis, and statistics on the AT content of the genome help place the genome in a wider context. The frames version allows you to visit and investigate linked pages hosted by other organizations and return to the site simply by clicking on any of the links in the left-hand frame

Worst feature

Some of the DNA atlases can take up to several minutes to download on a slow modem connection. The first pages load up very rapidly, however, so a user can browse these first pages while waiting for a more image-intensive page to load.

Wish list

A second server or mirror, perhaps somewhere in the USA, would help speed up download times.

Related websites

Several other better-known sites track the progress of genome sequencing projects. These include The Institute for Genome Research (TIGR) microbial database and National Center for Biotechnology Information (NCBI).

Table of links

DNA structural analysis of complete genomes and chromosomes

The Institute for Genome Research (TIGR) microbial database

National Center for Biotechnology Information (NCBI)

Center for Biological Sequence Analysis

References

1. DNA structural analysis of complete genomes and chromosomes.