The spider's web

Model organisms

For more than a century, research scientists have been accumulating genetic and biochemical data on model organisms. Now, the explosion of genomic information and the need to search for gene homologies makes it more important than ever that these data should be organized in an accessible way — which is where online databases come into their own. *The Spider* kicks off with yeast and *Caenorhabditis elegans*, with more to follow in future issues.

Yeast

Three main web sites with extensive databases provide outstanding coverage of online yeast resources. The cornerstone of online information on *Saccharomyces cerevisiae* is the *Saccharomyces* Genome Database at Stanford University. The site is extremely well-designed and meticulously maintained. It provides genetic information, sequence analysis tools, structural data, mammalian homologies and yeast nomenclature information, as well as yeast community information.

The excellent Yeast Protein Database at Proteome, Inc. indexes all yeast proteins of known sequence. Protein sequence information is updated daily and searches can be done for gene names, keywords and protein properties. Detailed protein reports include information on accession numbers, synonyms, molecular weight, modifications, subcellular localization, function, interactions and purification. Users can quickly find related genes and view alignments with protein sequences from other model organisms. Weekly reports summarize new or updated protein reports.

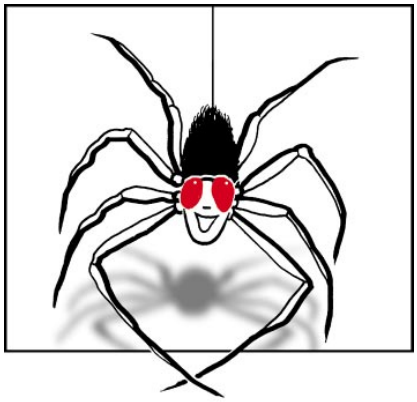
The MIPS: The Yeast Genome Project at the Munich Information Centre for Protein Sequences allows users to search the yeast chromosomal and mitochondrial genomes for protein sequences. The site has a particularly nice collection of tables listing essential and non-essential genes, protein interactions and transmembrane domains.

The World-Wide Web Virtual Library – Biosciences: Yeast section provides a comprehensive collection of links to resources for *S. cerevisiae*, *Schizosaccharomyces pombe* (fission yeast) and *Candida albicans*. The collection includes links for sequence analysis projects and lab protocols.

For discussions of current yeast issues, try the newsgroup bionet.molbio.yeast, which has been active for many years.

Caenorhabditis elegans

There are few online resources for *C. elegans* and the sites need to be further developed to take full advantage of web technology. The most extensive online resource is the *Caenorhabditis elegans* WWW Server, which is actively maintained by Leon Avery at the University of Texas Southwestern Medical Center (see *Curr Biol* 1997, **7**:R524).



The *C. elegans* Genome Project — maintained by the Sanger Centre in the UK and the Genome Sequencing Center at Washington University School of Medicine in St Louis, US — provides access to completed *C. elegans* sequences and preliminary sequence data, which can be searched using the BLAST server. Users can also search the current database of *C. elegans* expressed sequence tags (ESTs) and the *C. elegans* protein database, WormPep.

The browsable and searchable site, A *C. elegans* Data Base (ACeDB), provided by the Genome Informatics Group at the National Agricultural Library, includes information on DNA sequences, expression patterns and cell groups. The complex resource seems to be designed for experts in ACeDB software and language; however, some online Help sections are provided.

The *Caenorhabditis* Genetics Center at the University of Minnesota maintains stocks of more than 3,000 *C. elegans* strains. Users can browse and search the gopher index and order strains via e-mail. The site also maintains an updated *C. elegans* bibliography. To find additional information or current *C. elegans* news, try the moderated newsgroup bionet.celegans.

Even if you don't work with a particular model organism, the web offers plenty of ways to find out whether an idea extends beyond your own biological system.

Address: spider@current-biology.com

This month's URLs

Saccharomyces Genome Database (SGD)	http://genome-www.stanford.edu/Saccharomyces/
Yeast Protein Database	http://www.proteome.com/YPDhome.html
MIPS: The Yeast Genome Project	http://speedy.mips.biochem.mpg.de/mips/yeast/index.htmlx
World-Wide Web Virtual Library – Biosciences: Yeast	http://genome-www.stanford.edu/Saccharomyces/VL-yeast.html
Newsgroup bionet.molbio.yeast	http://www.bio.net/hypermail/YEAST/
Caenorhabditis elegans WWW Server	http://elegans.swmed.edu/
C. elegans Genome Project	http://www.sanger.ac.uk/Projects/C_elegans/
ACeDB (A *C. elegans* Data Base)	http://probe.nalusda.gov:8300/cgi-bin/browse/acedb
Caenorhabditis Genetics Center	gopher://elegans.cbs.umn.edu:70/1
Newsgroup bionet.celegans	http://www.bio.net/hypermail/CELEGANS/