

BioCyc Genome Database Collection

Genetic and metabolic pathway information is playing an increasingly important role in a wide variety of fields, from health care to food production to the manufacture of chemicals. Furthermore, advances in sequencing and computer technology enable this information to be generated more quickly and in larger amounts.

Developed by SRI International, originally Stanford Research Institute, and now available via the Ovid platform, BioCyc is a collection of databases with genetic, pathway, and other information together with integrated software tools that can be used to browse, search, analyze, and visualize it. Ideal for teaching, research, and clinical or product development, BioCyc accelerates science in genetic and metabolic engineering, drug discovery, vaccine design, and more.

A one-stop-shop for genome and metabolic pathway data and powerful bioinformatics tools for exploring it.



SRI International[®]

Why BioCyc?

- Computational inferences, data from other databases, and literature-based curation derived from over 130,000 publications
- Software tools for visualizing, searching, browsing, and analyzing BioCyc and user-supplied data
- For research and education in agriculture, biochemistry, bioinformatics, biology, biotechnology, chemical engineering, drug discovery, food science and processing, genomics, microbiology, and other fields
- Potential users include undergraduate, graduate, and professional-school students to post-doctoral research fellows to seasoned scientists and researchers
- Encyclopedic data on over 20,000 organisms from all domains of life

Key features:

- Over 20,000 organism-centric databases covering all domains of life; those of many model and highly studied organisms have been curated with data from over 130,000 publications. Each database contains the annotated genome of the organism, its metabolic pathways, plus other information, including, for some, regulatory networks
- Combines encyclopedic data with powerful informatics tools in one resource
- New expanded releases occur twice per year

BioCyc at Work

- Useful for information finding, transcriptomics and metabolomics data analysis, comparative studies, and quantitative modeling
- Easily incorporate bioinformatics into undergraduate, graduate, and professional-school (e.g., medicine) curricula
- Support researchers, scientists, engineers, product developers, faculty, and students in a wide array of fields
- Examine genomes and genomic pathways in great detail
- Study how changes in cellular growth impact aging and disease
- Identify new approaches to disease prevention and drug discovery

**See page 2 for more details.*

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Databases in the collection

Databases are organized into three tiers, depending on the amount of manual, literature-based curation they have received. All organism databases contain data imported from MetaCyc, BioCyc's database of metabolic pathways and enzymes covering all domains of life.

- **Tier 1 databases have received at least one person-year of curation and often many more.** They include MetaCyc and databases for Escherichia coli (EcoCyc), human (HumanCyc), Arabidopsis thaliana (AraCyc), and yeast (YeastCyc).
- **Tier 2 databases have received up to one person-year of curation.** They include those for many model and other highly studied organisms such as Bacillus subtilis, Agrobacterium tumefaciens, Salmonella enterica, Lactobacillus plantarum, Helicobacter pylori, Mycobacterium tuberculosis, and Vibrio cholerae.
- **Tier 3 databases are entirely computationally generated.**

Bioinformatics Software Tools

- One-stop-shop of easy-to-use tools
- Decreases the number of packages that users must learn and that an organization must support
- Publication-ready visualizations
- Robust search capabilities
- Analysis tools
- Comparison tools
- SmartTables enable complex analyses without the need for programming

BioCyc in Healthcare and Biotechnology

- Genomic and genetic data provide a more comprehensive picture of patient health: enables proactive, not reactive, healthcare
- Determine how micro-organisms interact with their hosts to cause disease
- Determine what changes in normal cellular growth regulation account for aging, cancer, and other diseases
- Identify the basic molecular mechanisms that control cellular growth, division, and differentiation
- Facilitates discovery of new drugs via pathway-based target selection and validation
- Discover how to engineer microbes to produce chemicals of industrial importance

Request Your Free Trial Today!

Contact sales@ovid.com to schedule a free trial of BioCyc, now available via Ovid.