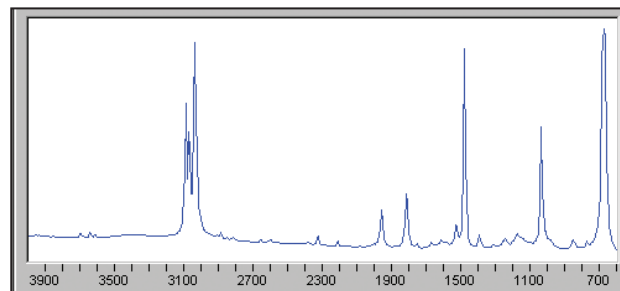




RESOURCES Profiling a Supermodel

Researchers who use mice to investigate the origin, spread, and treatment of human cancer should scurry over to EMICE, a cache of data on mouse models from the National Cancer Institute. A good starting place is the collection of backgrounders, written by experts, that explicate different kinds of human cancers and describe how mouse models aid research on each variety. If you want more information on specific models, the site will scour PubMed for studies that enlist that animal, or you can paw through the Cancer Models Database, which profiles each type of mouse. Entries explain how researchers made the rodent tumor prone, list tested treatments, and provide histological descriptions of lesions. Collections of links range from protocols on using gene chips to characterize cancer cells to funding providers and breeding centers that supply rodent stocks.

emice.nci.nih.gov



DATABASE

Reading Between the Lines

Premed students forced to take organic chemistry may kvetch about having to memorize the spectra of different compounds, but for working chemists, spectroscopy is a crucial tool for deciphering molecular structure and identifying samples. SpectraOnline holds spectroscopic data for thousands of compounds, collected by ultraviolet, Raman, nuclear magnetic resonance, infrared (IR), and other techniques.

Use of the site, hosted by the New Hampshire-based company ThermoGalactic, which sells spectroscopy software, is free with registration. You can search the database by compound name, Chemical Abstracts Service registry number, molecular formula, and molecular weight. Or you can input a spectrum for an unknown and hunt for a match. (Above, the IR spectrum of benzene.)

spectra.galactic.com/SpectraOnline/Default_ns.htm

SOFTWARE

All for Naught

Linux users can stock up on free bioinformatics software at BioLinux. The site provides Linux versions of eight popular programs, including Phylip, which builds evolutionary

trees, and the DNA sequence searcher BLAST. Also on the menu are rxp, which checks XML code, and the multitasking EMBOS. This molecular biology program tackles everything from calculating the maximum rate of enzymatic reactions to pinpointing repeated sequences in DNA.

www.biolinux.org

LINKS

Batch of Bug Sites

Web sites about microbes seem to have proliferated almost as fast as bacteria in unrefrigerated potato salad. This collection of annotated links, tended by postdoc Al Chan of the Woods Hole Marine Biological Laboratory in Massachusetts, organizes the sprawl into 16 handy categories.

Undergrads will find a wealth of sites on microbial ecology, specific groups and diseases, and practical uses of bugs such as bioremediation, in which gunk-eating bacteria slurp up oil spills and other chemical discharges. Also useful for students are links to more than 300 nontechnical articles on everything from a brain parasite that makes rats less afraid of cats to the use of genetically altered bacteria to thwart tooth decay. Geared for academics are offerings such as Lawrence Berkeley National Laboratory's guidelines for protecting buildings from biological and chemical attack (no mention of duct tape) and the University of Idaho's taxonomy of plant viruses. The site also features links to more than 180 microbiology journals and a host of jobs sites and professional societies.

www.microbes.info

IMAGES

Baby Pictures From the Deep

Right now it's just a misshapen lump with snaky appendages (below), but this larva will grow up to be a star—a starfish, that is. Developmental biology students and researchers can see how starfish and other marine invertebrates begin life with this atlas from the University of Saskatchewan in Canada. The collection showcases light and electron microscope images of larvae snapped by Thurston Lacalli, now a professor emeritus at the university. The portraits capture youthful animals from seven phyla and include sea urchins, flatworms, and the transparent, fishlike amphioxus, one of our close relatives. An illustrated tutorial aimed at students and nonspecialists pinpoints structural characteristics of larvae from different groups and discusses the evolution of body designs. Lacalli intends to broaden the collection's taxonomic coverage by adding photos taken by other researchers.

scaa.usask.ca/gallery/lacalli

