

AGI Press Announcement

The following is the 1996 press announcement regarding the International Arabidopsis Sequencing project:

**MAJOR PLANT GENOME RESEARCH PROJECT UNDERWAY
FIRST COMPLETE GENE SEQUENCE OF PLANTS TO RESULT**

Scientists will soon have access to the first complete genetic information of a flowering plant. The Department of Energy (DOE), the National Science Foundation (NSF) and the Department of Agriculture (USDA) have funded three groups of researchers to begin systematic, large-scale genome sequencing of a plant named *Arabidopsis thaliana*. The ultimate goal is to sequence the entire *Arabidopsis* genome at a rate of about 200 genes per month and to develop the first complete gene sequence of a higher plant. The three-year awards total approximately \$12 million.

Arabidopsis thaliana is a small plant in the mustard family, and has the smallest genome and the highest gene density so far identified in a flowering plant. "Decoding the DNA of this model plant will provide a complete catalog of all the genes involved in the life cycle of the typical plant, from seed to flower and fruit," says Martha Krebs, director of DOE's office of energy research. The Department of Energy is supporting the plant sequencing effort because the applications of the genetic information learned could be used to meet a number of agency mission needs. Potential applications include improved quality and quantity of biomass products such as alternative fuels and chemical feedstocks (which can conserve petroleum resources) and using plants to clean up contaminated soil (phytoremediation) at DOE's former nuclear weapons production sites.

What scientists learn from the study of *Arabidopsis* genes will be immediately applicable to economically important plant species, according to Mary Clutter, NSF assistant director for biological sciences, and will lead to the creation of new and improved plants and plant-based products. "Because plants are vital to our existence, increased understanding of the biology of plants will impact every facet of our lives, from agriculture, to energy, to the environment, to health," says Clutter.

In 1990, the Multinational Coordinated *Arabidopsis thaliana* Genome Research Project was launched by an international group of scientists who recognized the need for study of one plant with the basic properties of all plants. "During the past several years, *Arabidopsis* has become established worldwide as the species of choice for molecular genetic studies of plant biology," says Clutter.

Catherine Woteki, USDA acting undersecretary of agriculture for research, education, and economics adds, "Mapping the *Arabidopsis* genome will enable us to use biotechnology to develop a host of new plant varieties for agriculture and other purposes. This research is like exploring a continent for the first time; each step leads on to several others, with tremendous possibilities. We're going to see productive results for years to come."

Although the three groups of researchers selected for the current research grants are supported by separate awards, each is part of a single project. "Their activities will be coordinated to maximize efficiency and usefulness." says Clutter, "and information from the project will be widely disseminated so that researchers will gain maximum benefits." The U.S. effort is being dovetailed with other large-scale Arabidopsis genome sequencing projects in Europe and Japan. The goal is to complete the sequence by the year 2004. U.S. groups will contribute two-thirds of the sequence.

The three groups of researchers are:

- The Institute for Genomic Research (TIGR) in Rockville, Maryland
- Consortium of Cold Spring Harbor Laboratory on Long Island, New York, Washington University in St. Louis, Missouri, and Applied Biosystems in Foster City, California
- Consortium of Stanford University, the University of Pennsylvania, and the University of California at Berkeley

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