DNA Facility

The DNA Facility at Iowa State University performs DNA sequencing, synthesis, and related services to support research.

DNA Sequencing

Standard Sanger Sequencing
DNA can be sequenced as plasmid, lambda, cosmid, or BAC DNA, or as PCR products (direct sequencing). Data can be downloaded directly from the facility's server, and a four-color data printout is provided. Custom primers can be used with all types of templates.

High-Throughput Sanger Sequencing
Samples can be submitted in a 96-well format. Twelve sets of 96 samples can be processed in a 24-hour period.

Next-Gen Sequencing
The facility provides short-read (50-250 bases) Illumina sequencing and offers library preparation service for all applications.

Access to Roche 454 sequencing is made possible through an instrument-sharing agreement between Iowa State University and the University of Iowa.

DNA Synthesis
DNA oligomers can be synthesized in two scales, 50-nmol and 200-nmol. The facility can make modified oligomers such as the fluorescent primers used in genotyping applications. Primer design is available for primer walking sequencing projects.

Automated Genotyping
The facility processes microsatellite and AFLP markers using a DNA analyzer and associated software to electrophorese samples and analyze the results. Each sample can have as many markers as the client can identify.

DNA Template Preparation
The facility performs plant genomic DNA preparation and also offers a seed grinding service. Plasmid template preparation in 96-well format also is available.

Quantitative Real-Time PCR
The DNA Facility has two quantitative, real-time PCR instruments for gene expression studies, validation of microarray data, allelic discrimination, SNP analysis, and screening for GMOs.

Nucleic Acid Sizing and Quantification
A Bioanalyzer instrument analyzes and quantifies DNA, RNA, and protein. Each chip can be used to assay from one to twelve samples. Trained users run their own samples.