

**1999-2000  
BIOPOLYMER LABORATORY  
SUMMARY OF ACTIVITIES**

The Biopolymer Laboratory serves as a core facility for molecular biology research. It is equipped to provide support for a wide range of projects involving nucleic acid research.

### **DNA SYNTHESIS**

DNA synthesis is accomplished with two instruments: An Applied Biosystems Model 381A and a Beckman Model 1000M. The ABI 381 is a single column instrument dedicated to the synthesis of specialty DNA. The Beckman 1000M is a fully automated synthesizer with a built-in Trityl monitor and extensive diagnostic functions to monitor the synthesis process and ensure the quality and purity of the synthesized oligonucleotides. It has the capability to synthesize 8 oligonucleotides sequentially with fast and economical cycle time. DNA of defined sequence is custom-made automatically using solid phase/phosphoramidite chemistry. Synthetic DNAs are used as probes for gene screening, primers for DNA sequencing and in directed site mutagenesis.

### **DNA SEQUENCING**

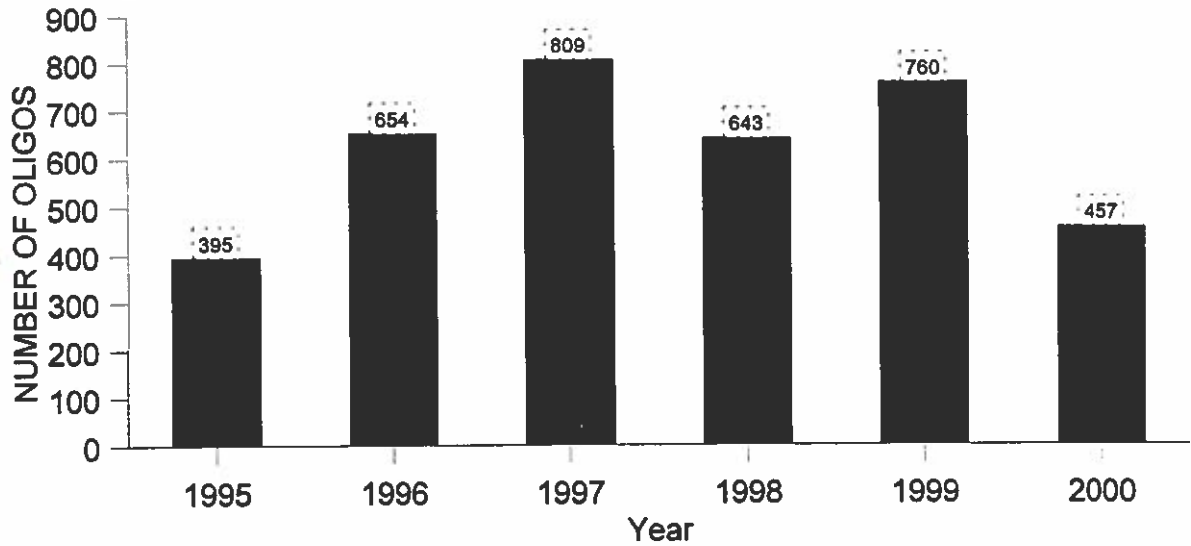
The Biopolymer Laboratory performs DNA sequencing analysis using the automated sequencer model ABI 373XL from Perkin Elmer/Applied Biosystems. The introduction of the "Big Dye" technology by Applied Biosystems has allowed more accurate and longer reads in automatic sequencing. The high demand for DNA automatic sequencing over the last three years reflects the continued interest of the faculty in the upgraded ABI 373XL DNA sequencing system.

### **MICRO-ARRAY TECHNOLOGY**

The completion of the human genome project has drastically changed the landscape in all areas of biomedical research. Massive amounts of sequence data are now widely available to researchers. In response to this progress, the Biopolymer laboratory is in the process of introducing a new DNA microarray system which comprises the printing of custom DNA arrays on glass slides and the fluorescence scanning for gene expression analysis. This new technology will allow USA scientists to probe thousands of genes simultaneously.

In addition to the services mentioned above, the Biopolymer Center can provide biotechnical advice to all researchers using the facility. Technical files on strategies for molecular cloning and the latest developments in Biotechnology are available upon request. For further information contact Dr. Tin Cao at 460-7264.

## DNA Synthesis in Biopolymer Lab



## DNA Sequencing in Biopolymer Lab

