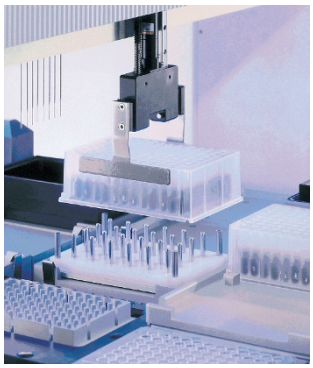
DNA sequencing & synthesis

Sequencer

The ABI PRISM 7000 Sequence Detection System is a complete, real-time PCR system that detects and quantitates nucleic acid sequences. Cycle-by-cycle detection of accumulated PCR product is made possible by combining thermal cycling, fluorescence detection, and application-specific software in one instrument. Quantitative results are available immediately after PCR without additional purification or analysis. Additional features include automated primer and probe design using Primer Express Software and the use of TaqMan Universal PCR Master Mix or SYBR Green PCR Master Mix to provide standardized component concentrations and simplify assay setup.
http://www.appliedbiosystems.com

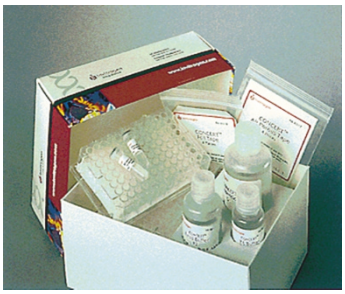


Miniprep system

The MagAttract 96 Miniprep System from Qiagen is designed for fully automated, high-throughput plasmid minipreps. The procedure combines an easy-to-automate magnetic silica-bead technology with a novel plasmid purification method. The unique chemistry enables purification of plasmid DNA directly from crude lysates without the need for a lysate clearing step. The high-purity DNA obtained is suited for use in applications such as automated sequencing.
http://www.qiagen.com

cDNA synthesis

Promega's ImProm-II Reverse Transcription System produces efficient, robust synthesis of first-strand cDNA in preparation for PCR amplification. The components can be used to reverse-transcribe RNA templates starting with either total RNA, poly(A)+ mRNA, or synthetic transcript RNA. The optimized reaction buffer and reverse transcriptase provided in the system enable robust, full-length cDNA synthesis for the reproducible analysis of rare or long messages. The cDNA synthesis conditions have been formulated for stand-alone applications or for easy transition to gene-specific target amplification.
http://www.promega.com

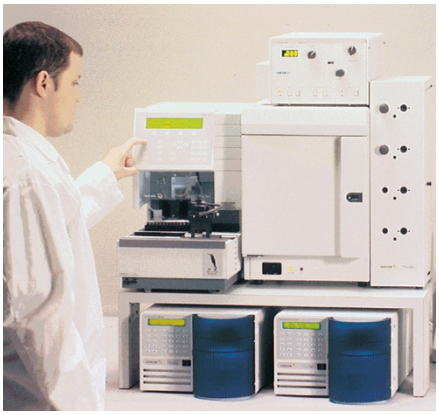


Plasmid purification

Invitrogen's Concert 96 Plasmid Purification System uses a solid-phase lysis system, replacing the numerous reagents and mixing steps associated with alkaline lysis. Cells are applied to a filter matrix within a 96-well plate, followed by addition of a lysis solution. During a short incubation, cells lyse within the matrix. Centrifugation extracts the plasmid DNA from the filter and precipitates the DNA in a receiver plate containing isopropanol. Genomic *Escherichia coli* DNA and other cell components largely remain within the filter matrix. The protocol can be completed manually in 45–60 min for plasmids up to 28 kilobases.
http://www.invitrogen.com

Designing primers

SNP Primer Design Software from Pyrosequencing enables researchers to rapidly and efficiently design primers that are optimized for use with Pyrosequencing technology. The Web-based software designs primers in the forward, reverse, or both directions, computes the melting temperature of the oligonucleotides, predicts secondary structures and potential primer interactions, and ranks primers according to their suitability for each SNP assay. Customers can store the software analyses in HTML format on their own computer.
http://www.pyrosequencing.com



DNA analysis system

Varian's Helix System for DNA Analysis is a fully automated, biocompatible HPLC for applications including mutation and SNP detection, DNA fragment sizing, and PCR product quality control. Each component of the system is optimized for simplified routine operation, reliable performance, and rapid sample analyses. Direct use of PCR products eliminates additional pipetting or cleanup, and pre-made BufferPaks save time and minimize variability associated with reagent preparation.
http://www.varianinc.com

Fluorophores

Eclipse Quencher is a novel nonfluorescent quencher for use in dual-label oligonucleotide reporter/quencher applications. It works effectively with green fluorophores, such as fluorescein, and red-shifted fluorophores, including Cy3, Tamra, and Synthetic Genetics' new Redmond Red fluorophore. Eclipse Quencher reduces background fluorescence with a number of fluorophores over a relatively wide emission wavelength range, allowing flexibility in the design of FRET-based assays. Eclipse Quencher is also useful in non-FRET probes, such as molecular beacons, where it effectively quenches most dyes currently in use. Eclipse Quencher and Redmond Red can be introduced at any position in a synthetic oligonucleotide, providing flexible design capability.
http://www.syntheticgenetics.com