



# Chromatography

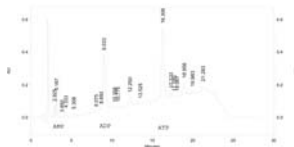
**Service:**  
Chromatographic separations by reverse phase, ion exchange and gel filtration. For reverse phase separations, sample size can be from sub microgram to 50 milligrams.

**Equipment:**  
•FPLC (Pharmacia/Amersham), for ion exchange and gel filtration.  
•Dionex Ultimate 3000 for capillary/microbore. This system can monitor at 2 wavelengths.  
•Beckman HPLC. These systems are for larger samples run on 4.6 to 22 mm diameter reverse phase columns.  
The core has some columns but investigators may need to purchase columns for some projects.

**Applications:**  
•Separation of vaccine peptides from Human Immune Therapy Center and collection for analysis by the Mass Spectrometry Core.  
•Analysis of nucleotides.  
•Isolation of chelating compound from microorganisms  
•Quantitation of some drugs.



Dionex U-3000 for small scale chromatography



Nucleotide separation by ion exchange chromatography

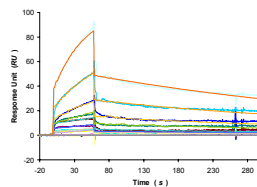
# Protein Interactions

**Service:**  
Estimation of association and dissociation rates and constants.  
One compound is bound to a coated gold surface, commonly by covalent coupling, or by binding to an antibody coupled to the surface. Surface plasmon resonance measures the amount of an analyte bound to the ligand on the surface as a function of time. Measurements at different concentrations give data for calculation of binding.

**Equipment:**  
Biacore 3000



Biacore 3000



Binding of the proteinase jarrahagin to collagen 14 coupled to a chip

# User Operated Equipment

**Fluorescence plate reader.** Molecular Devices Spectra MAX Gemini EM  
Researcher operated  
•Fluorescence and some luminescence readings on 6, 24, 96, 384 well plate  
•Kinetic readings.  
•Dual monochromator instrument for wide range of fluorophores  
•Accessible all hours with appropriate access card permissions



Fluorescent plate reader

**Circular Dichroism.** Aviv Instruments model 410  
researcher operated  
•CD spectra, which can be used to estimate protein secondary structure.  
•Circular dichroism at specific wavelengths to observe unfolding with temperature.  
•Monitor changes in structure  
•Accessible all hours with appropriate access card permissions

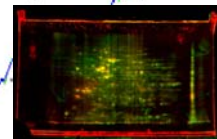


Aviv CD spectropolarimeter

**Dynamic light scattering:** Protein Solutions Dyna Pro  
Researcher operated  
Estimates the size of molecules in solution.

**Gel scanning and spot cutting:**  
facility operated  
•Bio-Rad FX to scan gels stained with Sypro Ruby, ProQ phosphoprotein stain, CyDyes, and other fluorescent dyes.  
•Bio-Rad GS-800 densitometer for transmissive scanning of gels stained with Coomassie or silver.  
•The scanners produce images which can be quantitated and converted to TIFF files.  
•Bio-Rad Spot Cutter cuts cores from Sypro or visibly stained gels.

Successive fluorescent scans of a gel stained with Pro-Q phosphoprotein stain and Sypro Ruby for total protein



**2-D electrophoresis equipment**  
Researcher operated

The core has isoelectric focusing equipment and 2<sup>nd</sup> dimension electrophoresis equipment for running 11, 17 or 25 cm long immobilized pH gradient strips.