

**DEPARTMENT OF MEDICINAL CHEMISTRY  
MASS SPECTROMETRY CENTER - INSTRUMENTATION**

**Bruker APEX Qe 47 - Fourier transform (Ion Cyclotron Resonance)  
Mass Spectrometer [FT(ICR)]MS**

Manufacturer: Bruker Daltonics, Billerica, MA, USA

Magnet: 160mm bore actively shielded 4.7 Tesla superconducting  
(MagneX Scientific Ltd., Oxford, UK)

Mass range: > 66kDa (BSA specification)

Resolution: > 450,000 (FWHM)\*

Ionization ( $\pm$ eV): Electrospray Ionization (ESI)

Inlet Systems:

Infusion:

Cole Parmer Series 74900 Syringe pump  
(Cole Parmer Instrument Co., Vernon Hills, IL)

Loop/Flow Injection Analysis (FIA)

Syringe pump solvent delivery with  
Valco CI4W sample injector (500nl internal loop)  
(Valco Instruments Co., Houston, TX)

Apollo Nanoflow Electrospray Ionization Source

Data System (DS):

Hardware: Dell WHL 1.7 GHz Xeon CPU, 512 Mbyte memory

Software: Microsoft Windows 2000, Hummingbird Exceed PC X Server,  
Bruker XMASS™ NT Acquisition &  
Bruker FTMS-360 BioTools NT Analysis and Interpretation

Acquisition Date: 2002

Funding: Mass Spectrometry Center  
University of Washington  
Pharmacia (Gift)  
Merck Research Laboratories (Gift)  
Weyerhaeuser Company (Gift)

Updates: QH-hybrid, CID, ECD, IRMPD, DREAMS‡ and reduced noise  
detection system and X-Y-Z Nanospray positioning (2006).

Predominant Uses:

Application of combined high resolution, high accuracy mass measurement and high sensitivity to the detection, identification and quantification of sample limited biologic materials.

- \* FWHM = full width at half height
- ‡ Richard D. Smith *et al.*, "Increased Proteome Coverage for Quantitative Peptide Abundance Measurements Based upon High Performance Separations and DREAMS FTICR Mass Spectrometry," *J Am Soc Mass Spectrom*, 13, 954-963 (2002).