

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

**Thermo Linear Trap Quadrupole –
Orbitrap Mass Spectrometer LTQ-OT MS/MS**

Manufacturer: Thermo Electron Corp., San Jose, CA, USA
Mass range: 2000 & 4000 Da (normal & extended modes, respectively)
Resolution: Unit mass (LTQ MS)
 100,000 (FWHM)* at m/z 400, typically 60,000 (OT MS)
Ionization ($\pm eV$): Electrospray Ionization (ESI)
Ion Detection: Electron multipliers (LTQ MS)
 Fourier transform image current (OT MS)

Inlet Systems:

Liquid Chromatograph (LC):

Waters nanoACQUITY Ultra Performance LC™ (UPLC™) System

Infusion:

Harvard Apparatus PHD 22/2000 syringe pump

(Harvard Apparatus, Inc. (Holliston, MA))

Nanospray *via* metal coated glass capillary:

(New Objective, Inc., Woburn, MA)

Sampling System:

Autoinjector integral to the Waters nanoACQUITY UPLC™ System

Data System (DS):

Hardware: Dell Optiplex GX52, Pentium 4, 3.2GHz, 1 Gbyte RAM

Software: Microsoft Windows^{XP} Professional,

Excalibur 2.0 SR1™

Magic AutoSampler 2.0 & Paradigm MS4 2.0

Acquisition Date: 2006

Funding: NIAID 1U54 AI57141-01 award part of “Mass Spectrometry Core for Regional Centers of Excellence for Biodefense & Emerging Infectious Diseases”

Predominant Use:

Automated “shotgun” proteomic analysis - Combining nano-LC, data dependent MS/MS with high sensitivity (sub fmol on-column) and accurate mass measurement (2 ppm) for protein identifications in simple and complex protein mixtures. LC/MS/MS, label-free quantification, and accurate mass measurements.

*FWHM = full width at half height