

Introducing ...

**The World's Most Sensitive
Ion Trap!**



FINNIGAN LTQ

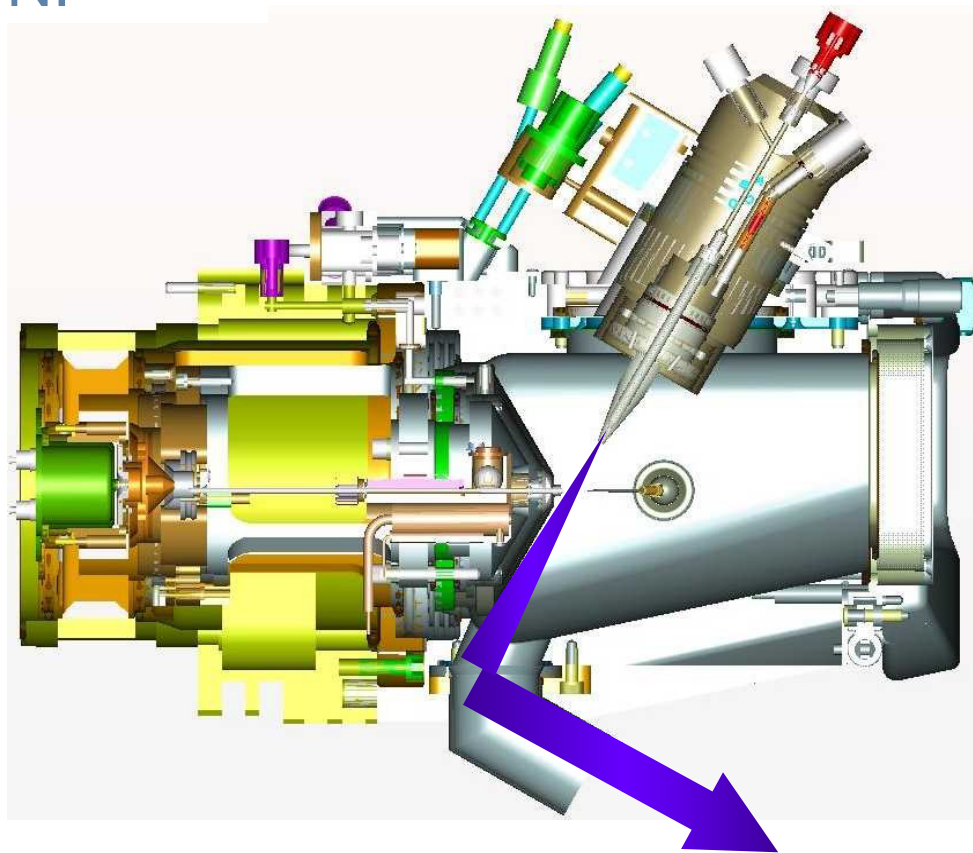
Universal Source ...



FINNIGAN LTQ

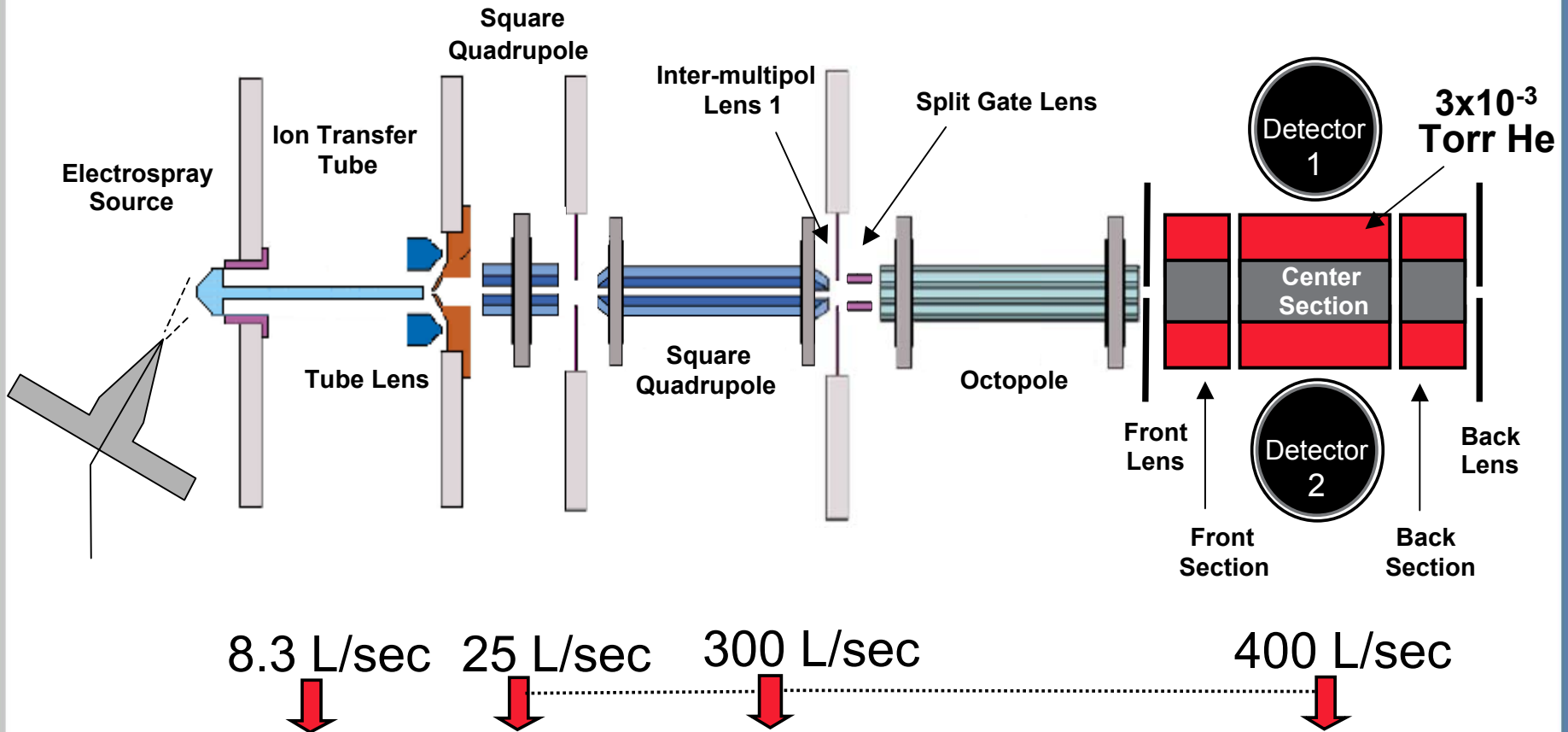
The Ion Max Advantage

- Reduces chemical noise
- No accumulation of API exhaust within chamber
- Improves S/N!



FINNIGAN **LTQ**

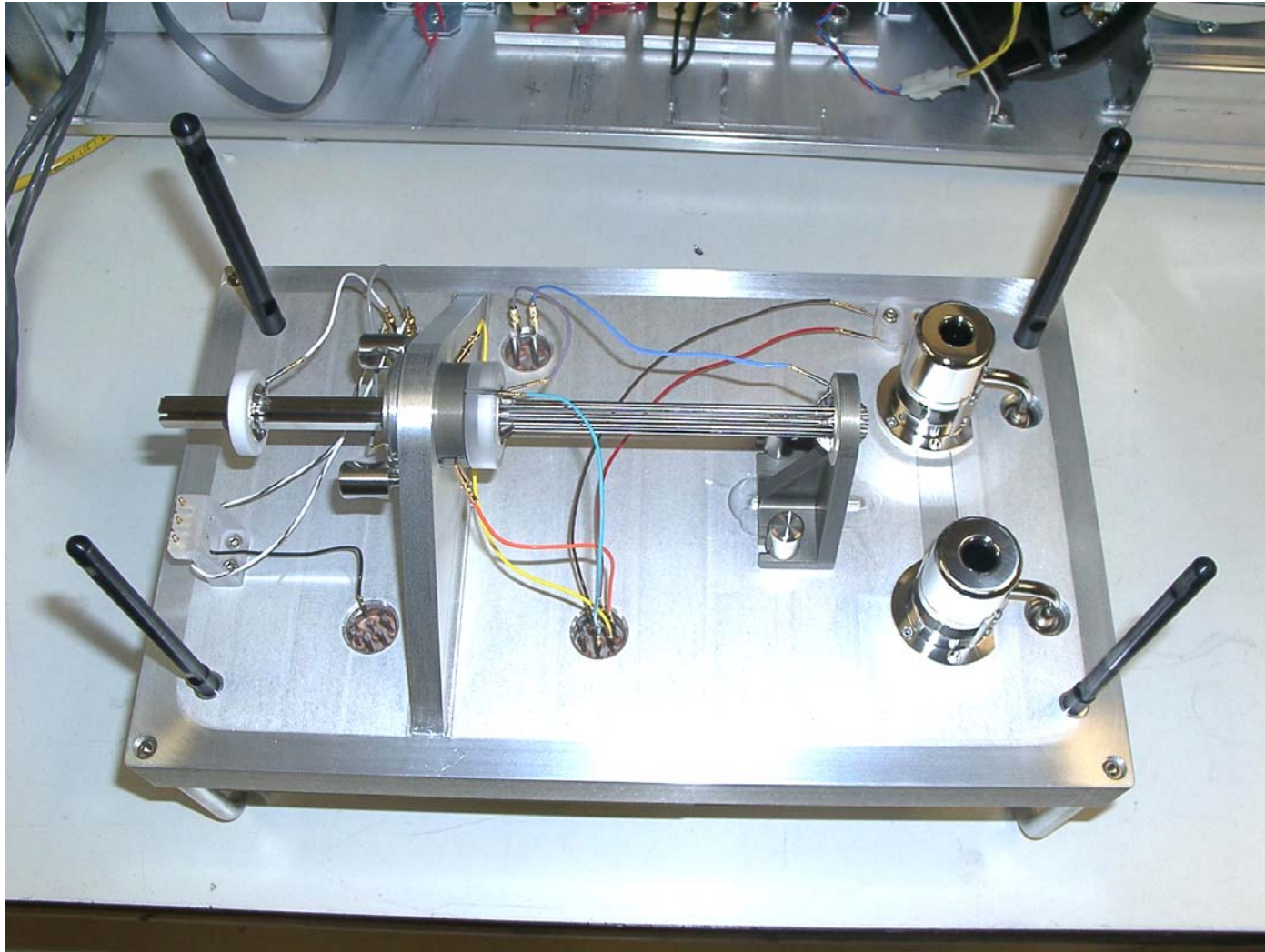
2D Linear Trap Instrument



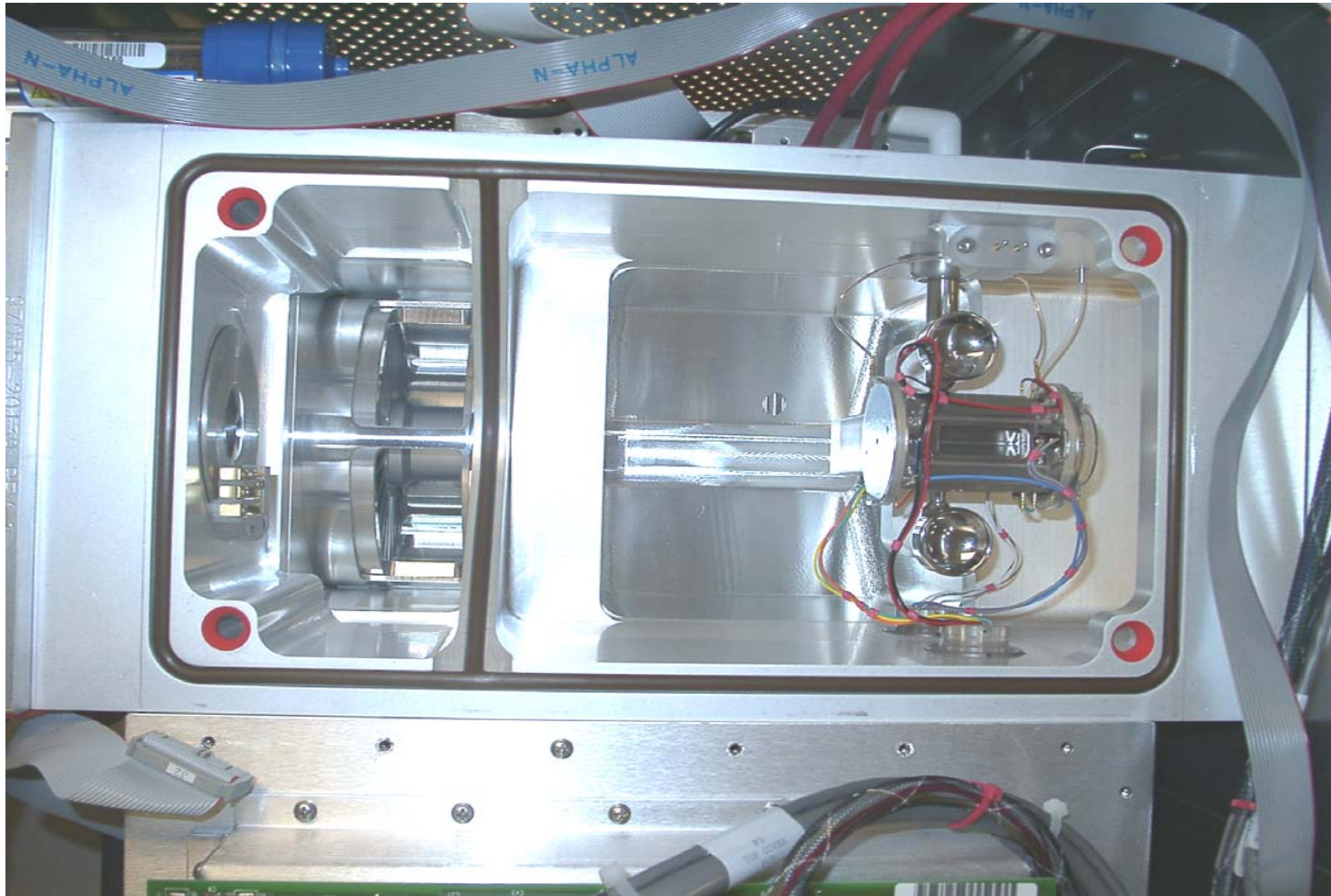
LTQ Top Cover Plate – Ion Optics



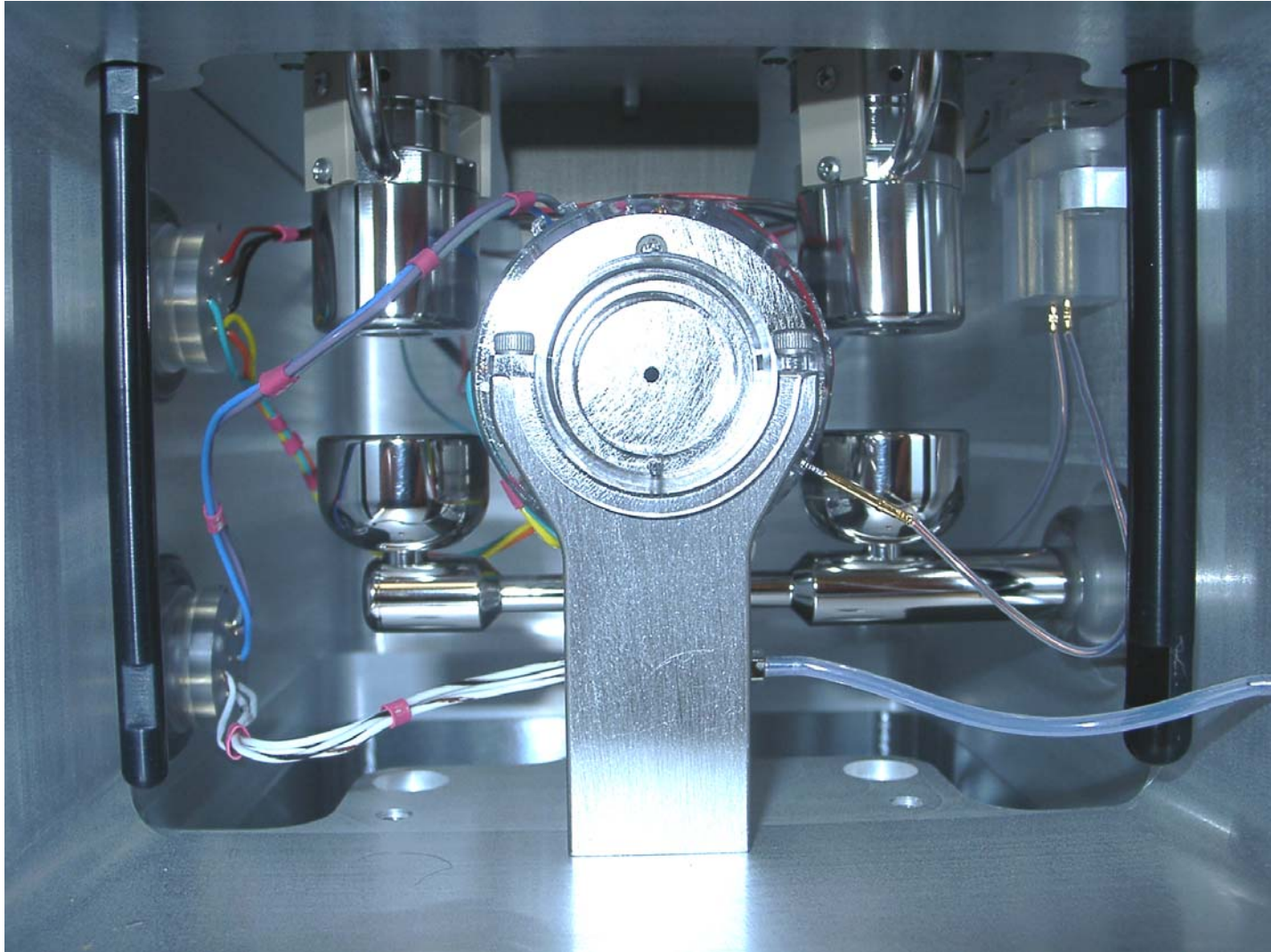
LTQ Top Cover Plate – Ion Optics



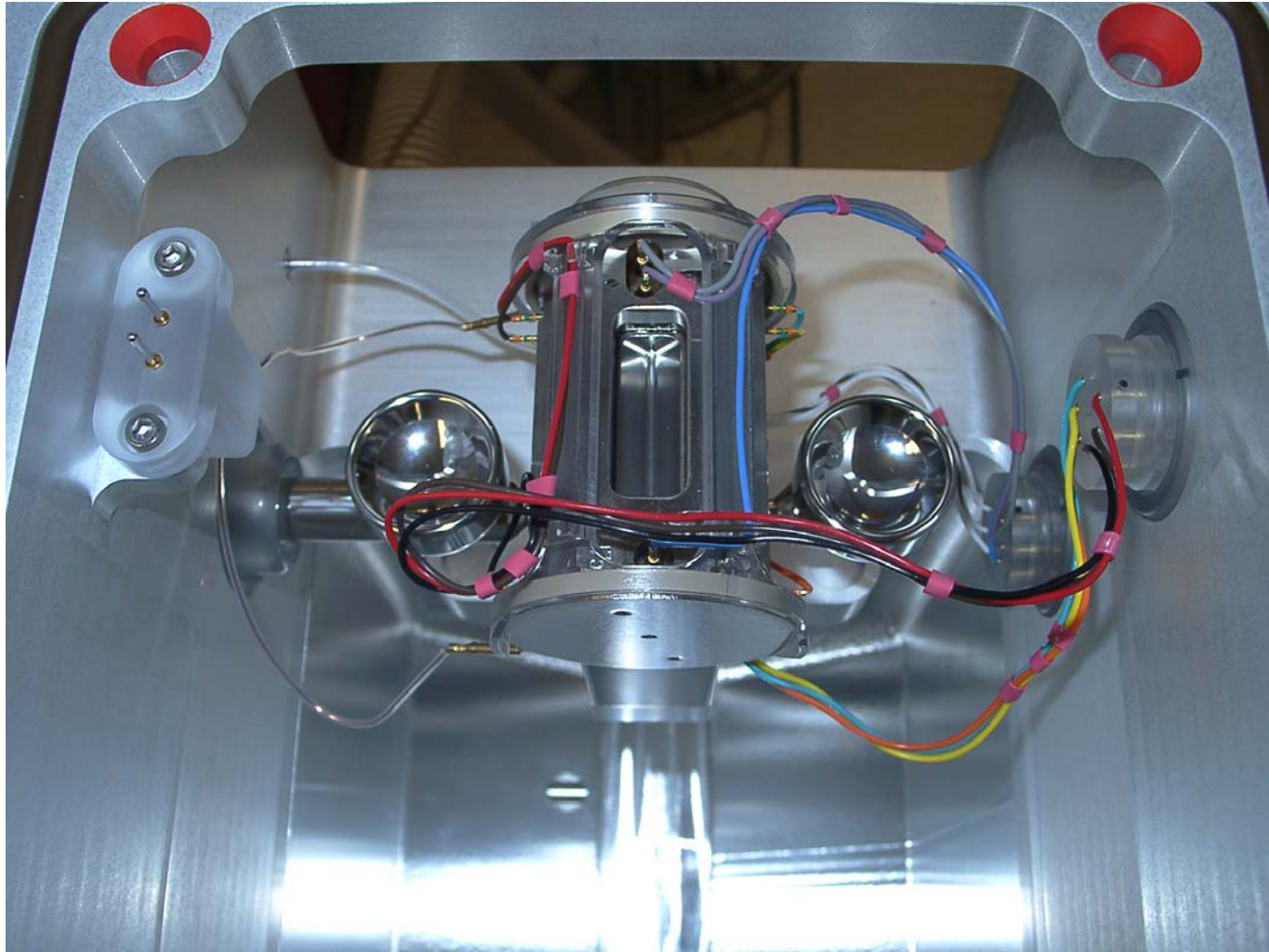
LTQ Vacuum Chamber – Linear Trap and Dynodes



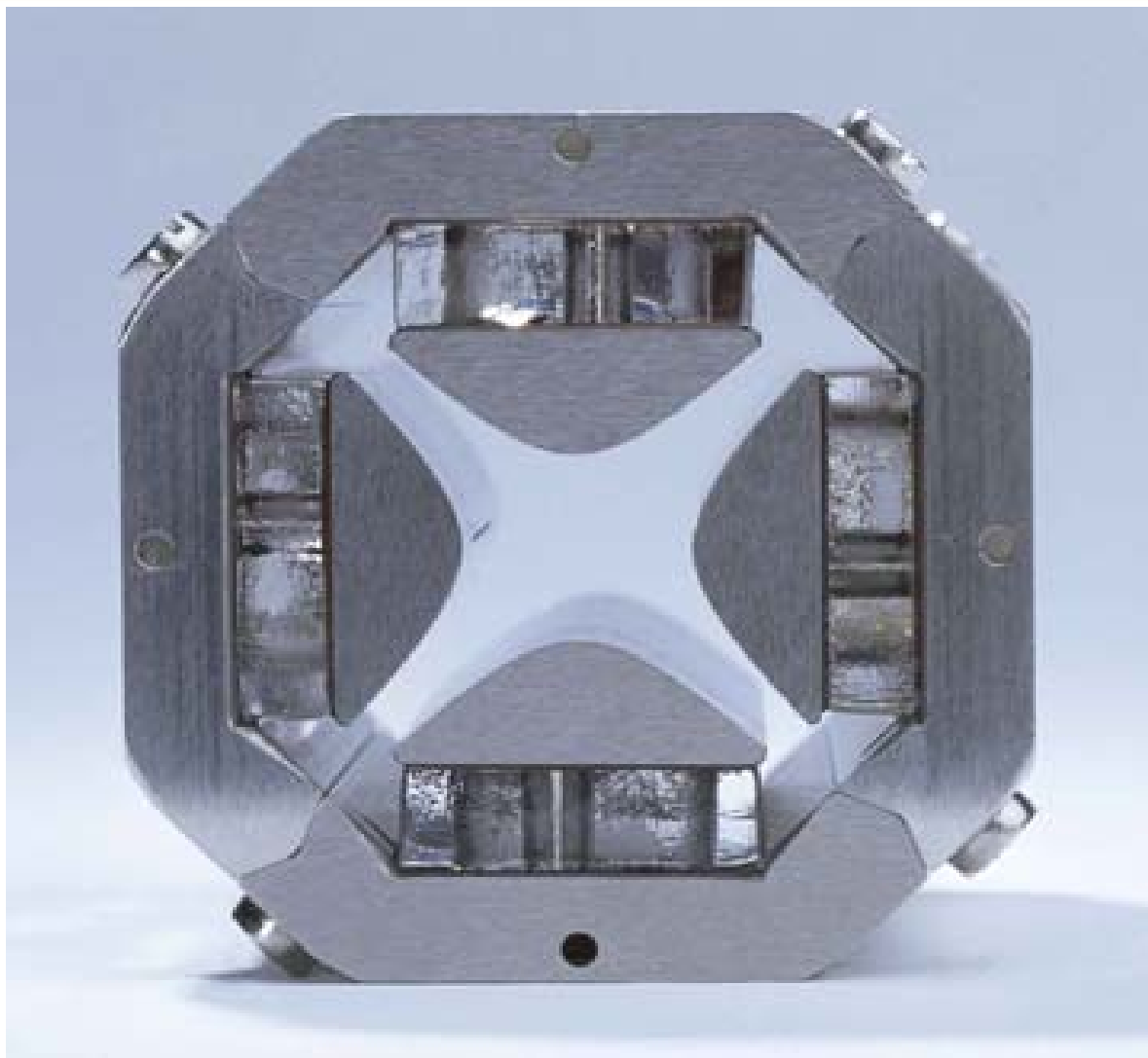
LTQ Vacuum Chamber with Top Cover View from Back – Dual Detectors



LTQ Vacuum Chamber – Linear Trap and Dynodes



LTQ Performance

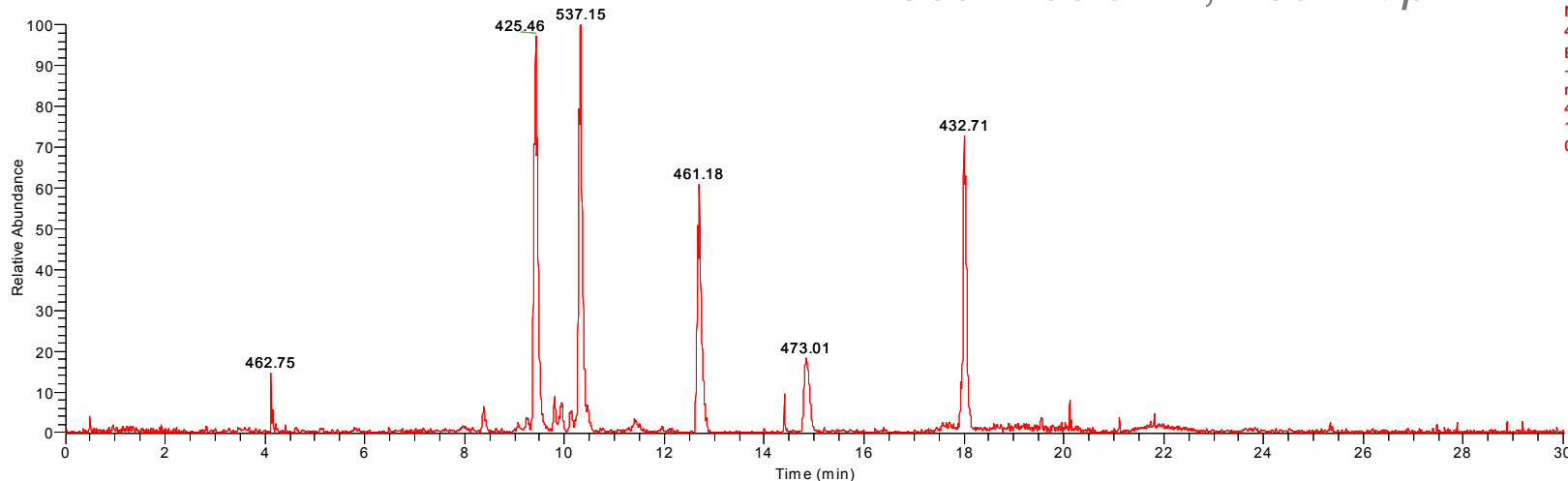


FINNIGAN **LTQ**

5 fmol Myoglobin Digest On LTQ

150um column, 10um tip

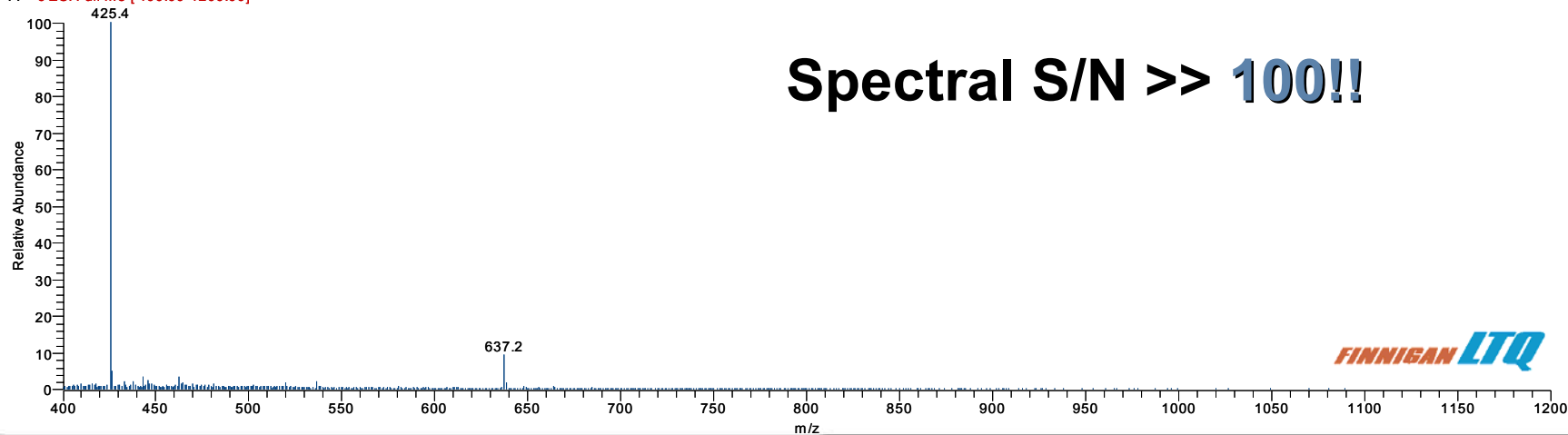
RT: 0.00 - 30.01 SM: 7G



NL:
4.71E7
Base Peak F:
+ c ESI Full
ms [
400.00-
1200.00] MS
032003_14

032003_14 #3305 RT: 9.46 AV: 1 NL: 3.70E7

F: + c ESI Full ms [400.00-1200.00]



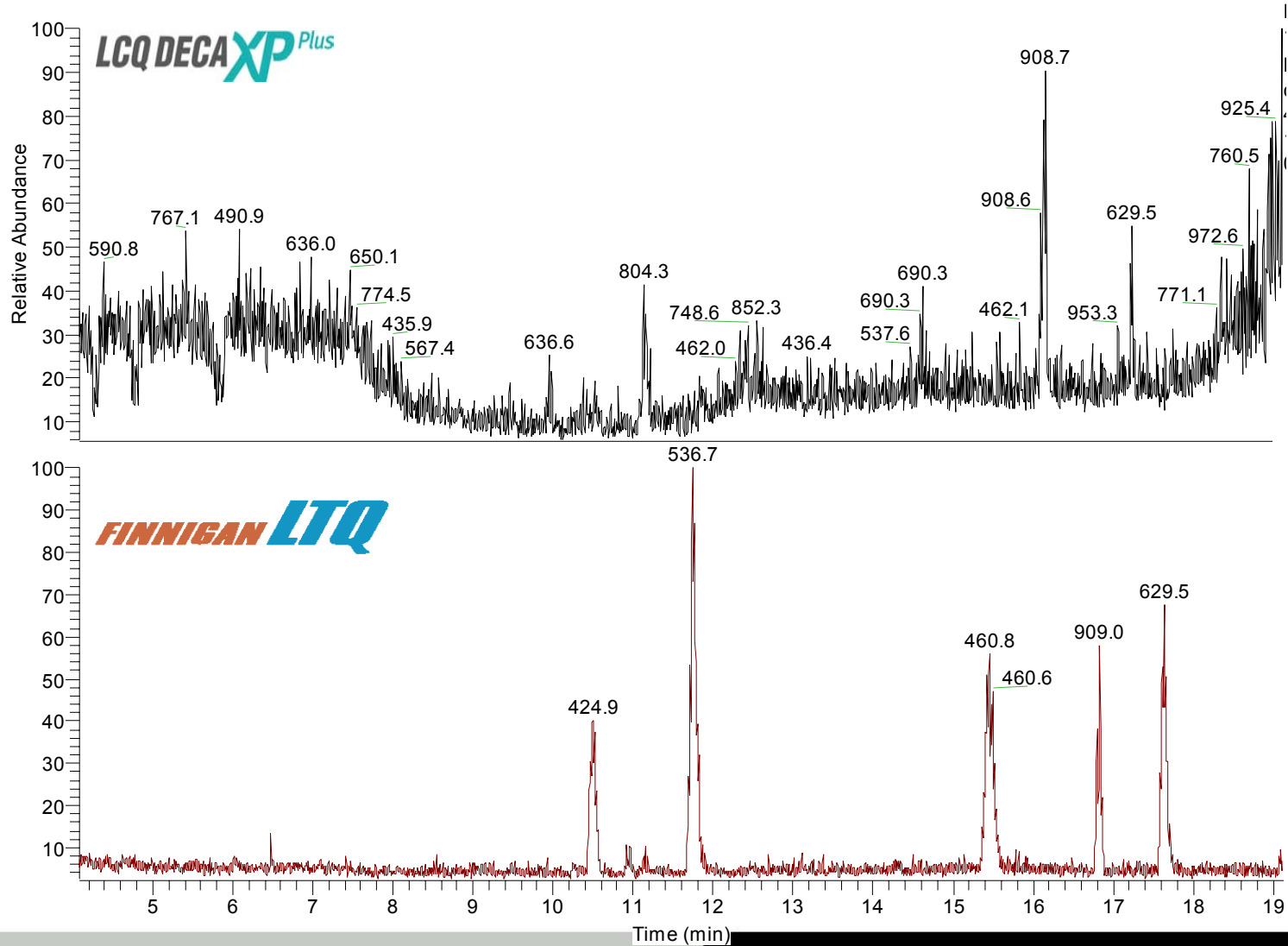
Spectral S/N >> 100!!

FINNIGAN LTQ

Improve Your Routine Sensitivity

1 fmol myoglobin digest injected (150um ID column)

RT: 4.07 - 19.12



Improve Your Routine Sensitivity

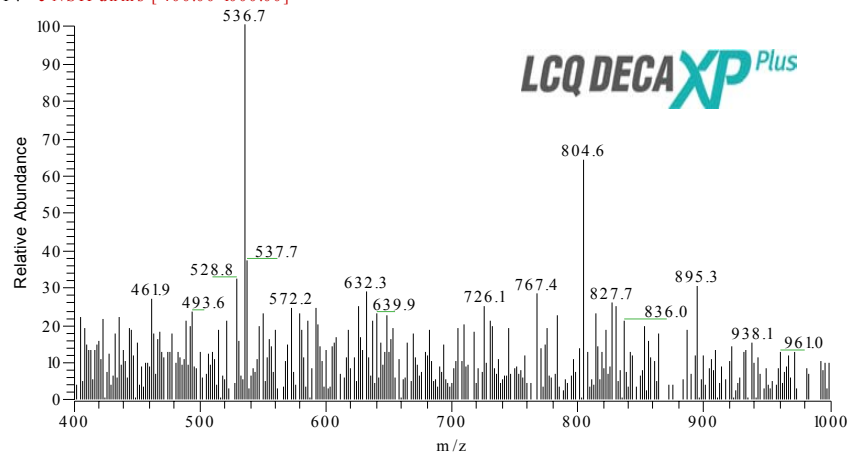
1 fmol myoglobin digest injected (150um ID column)

\\re-server\tomcat\...xplus\011003_08

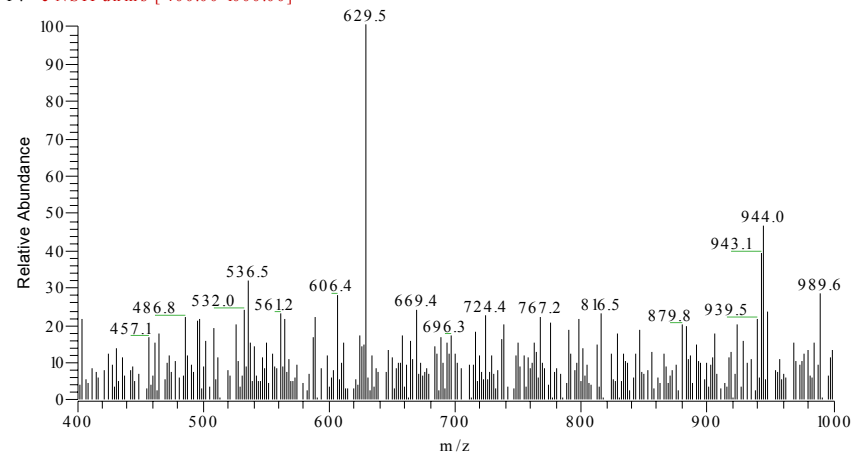
1/10/2003 3:58:51 PM

1 fmol

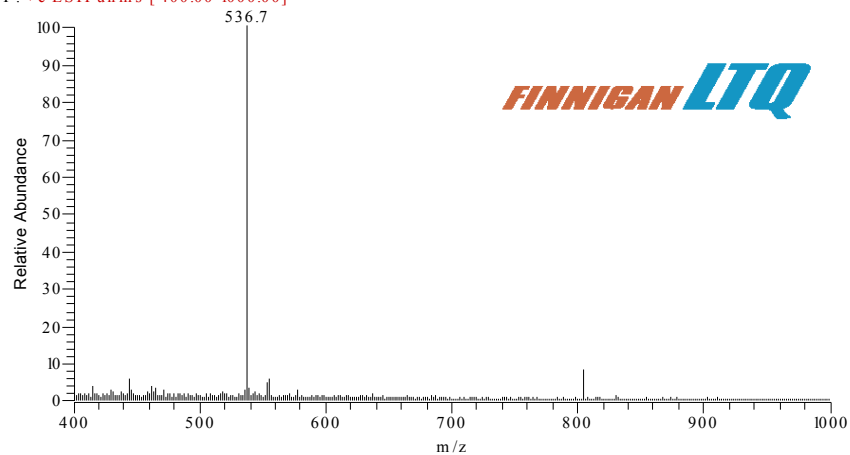
011003_08 #2326 RT: 11.13 AV: 1 NL: 3.72E6
F: +c NSIFullms [400.00-1000.00]



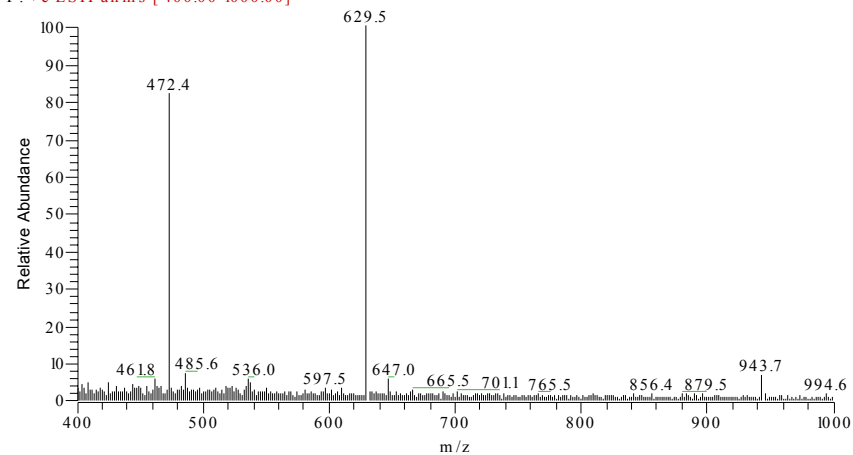
011003_08 #3607 RT: 17.23 AV: 1 NL: 6.74E6
F: +c NSIFullms [400.00-1000.00]



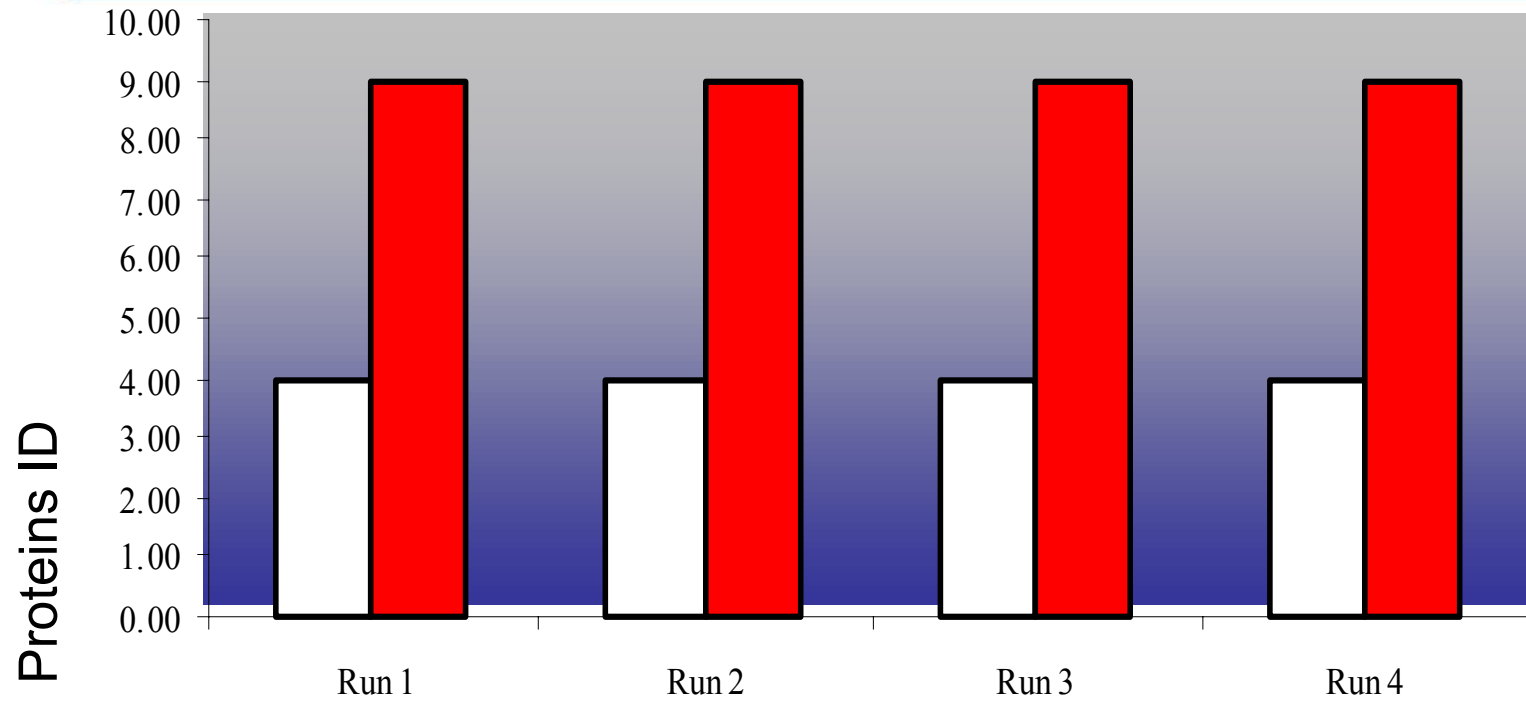
myoglobin_02 #3378 RT: 11.74 AV: 1 NL: 7.85E4
F: +c ESIFullms [400.00-1000.00]



myoglobin_02 #5229 RT: 17.61 AV: 1 NL: 3.92E4
F: +c ESIFullms [400.00-1000.00]



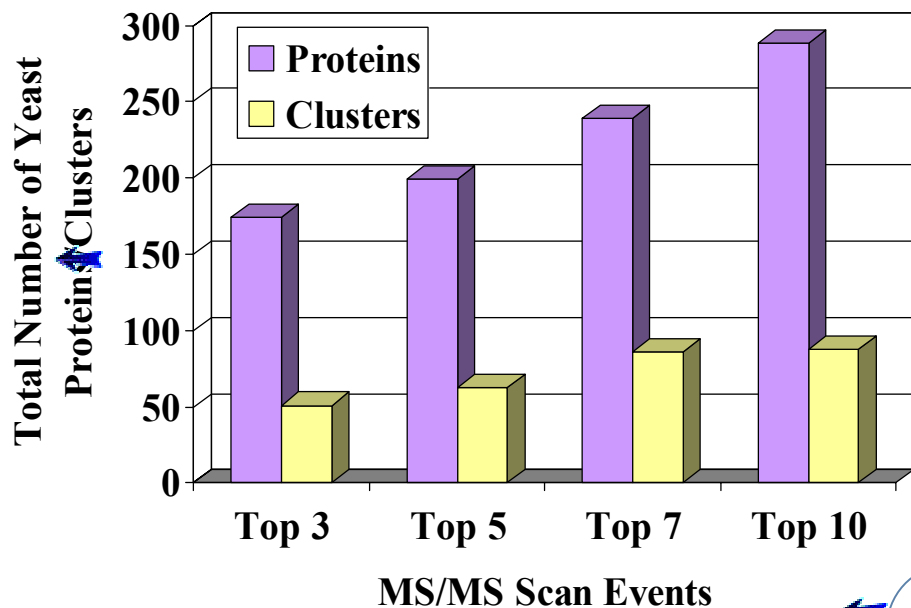
Consistent Results



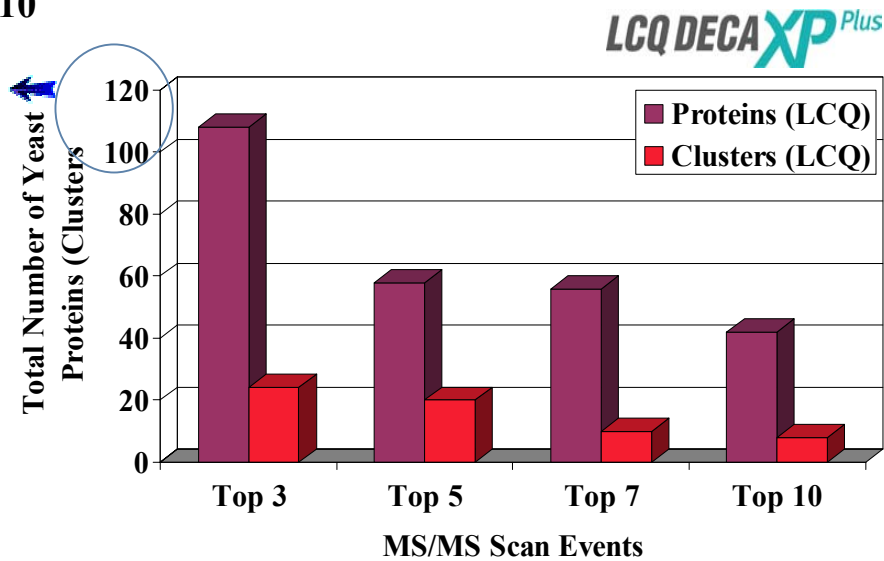
Using the Yeast Proteome to Characterize Linear Ion Trap Performance

Rameh Hafezi¹, Andrew Guzzetta², Mark Friedrichs¹, Rohan Thakur², Ashok Dongre¹

¹Bristol-Myers Squibb Company, Pennington, NJ ²ThermoElectron, San Jose, CA



FINNIGAN LTQ



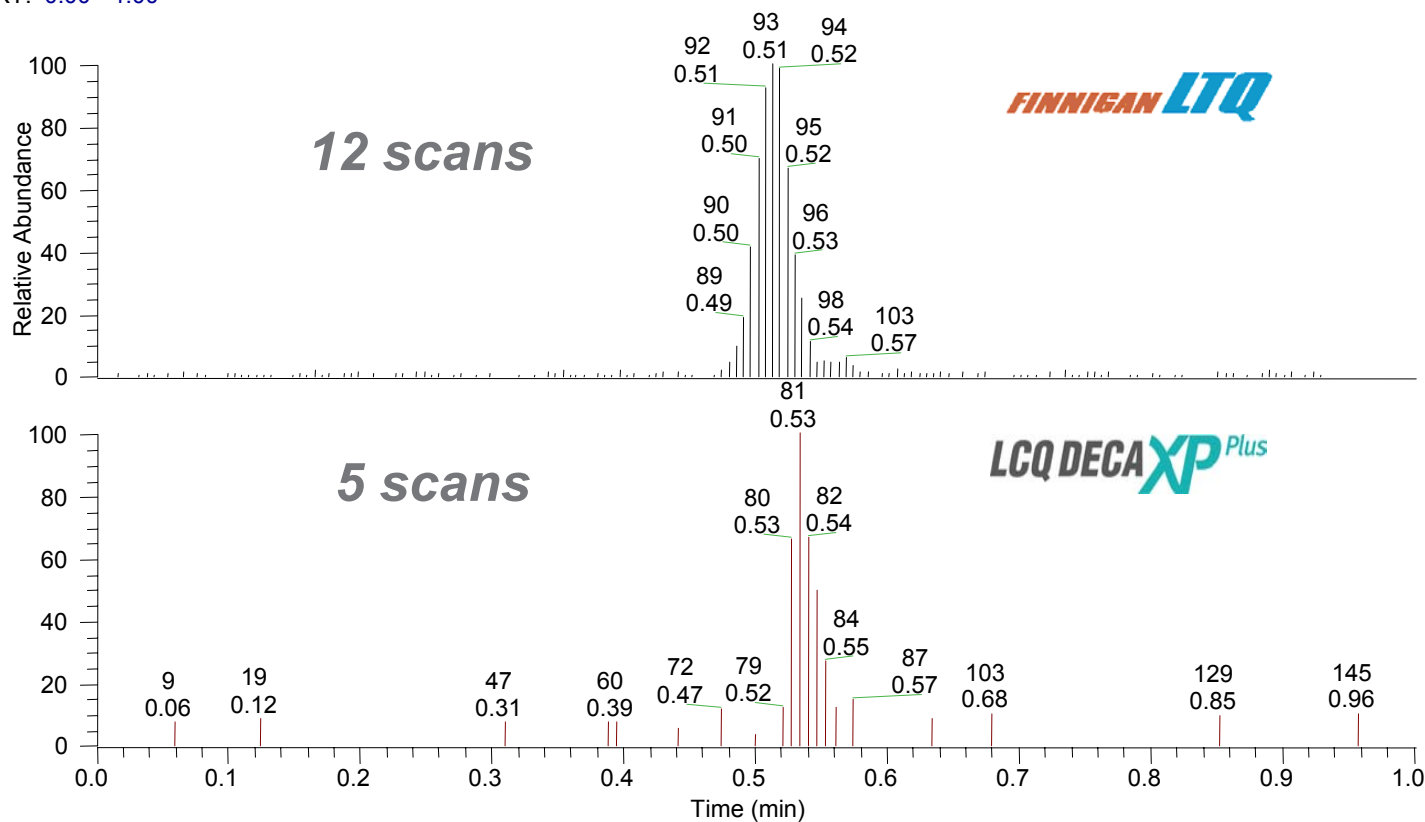
LCQ DECA XP Plus

ASMS Poster # TPX 453

Alprazolam Quantification

1 pg on column, 2.1mmx50, 400 uL/min, 10 uL inj

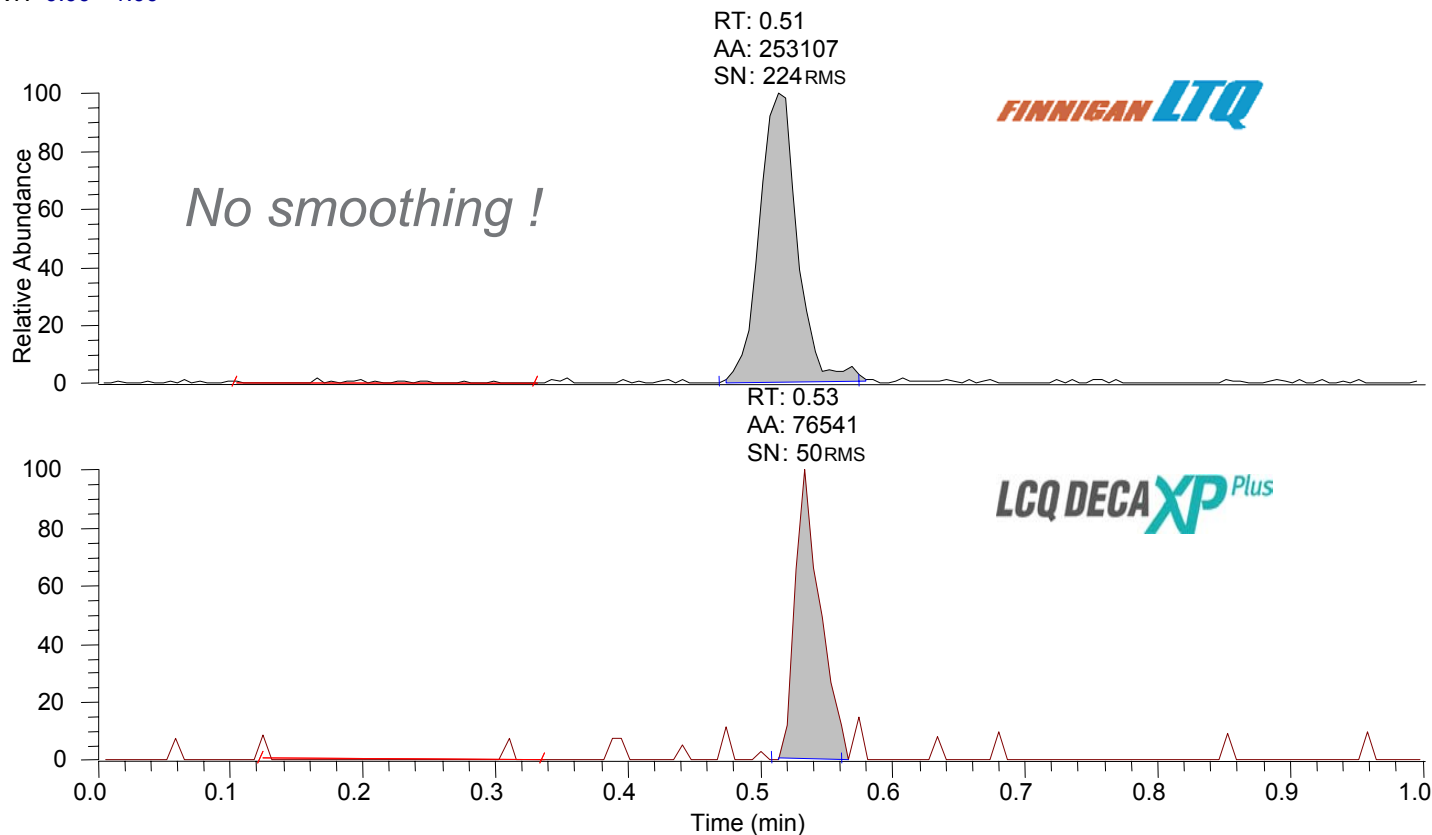
RT: 0.00 - 1.00



Alprazolam Quantification

1 pg on column, 2.1mmx50, 400 uL/min, 10 uL inj

RT: 0.00 - 1.00

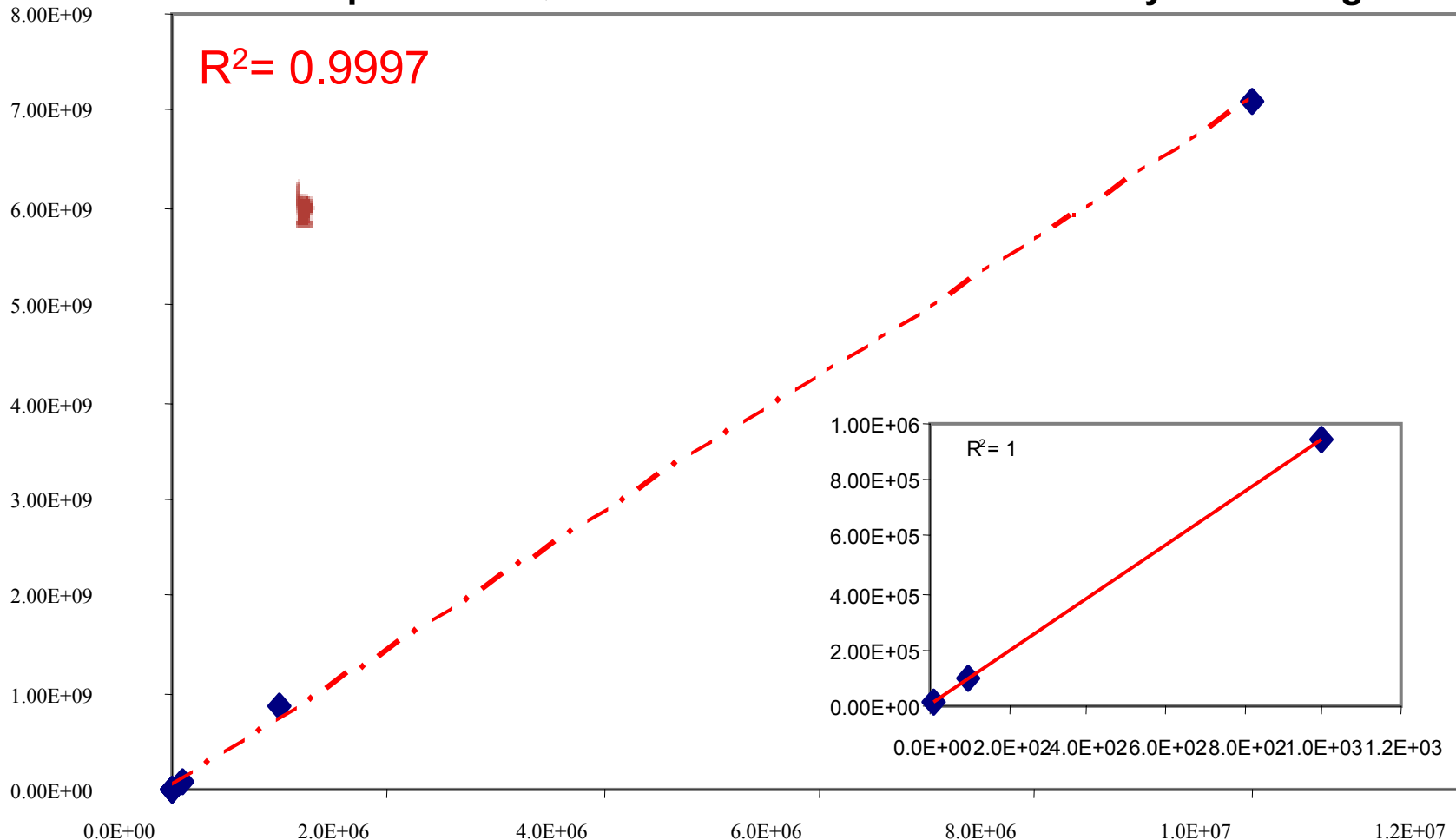


High Sensitivity Quantitation

fg	avg	stdev	%rsd	inj #1	inj #2	inj #3	inj #4	inj #5
50	11473	1837.27	16.01	14646	10461	11066	11189	10002
100	22697	1089.69	4.80	22609	21590	23631	23969	21684
200	43986	2894.67	6.58	45705	41959	46568	39917	45783
500	98475	4778.68	4.85	90625	98619	103611	99649	99869
1000	188521	10046.80	5.33	182180	187874	191497	203685	177371
2000	364842	18518.89	5.08	336362	375979	357111	382970	371789
20000	3509904	51187.69	1.46	3455120	3569149	3535483	3532727	3457043

High Sensitivity Quantitation

Alprazolam Quantification – 6 orders of linear dynamic range

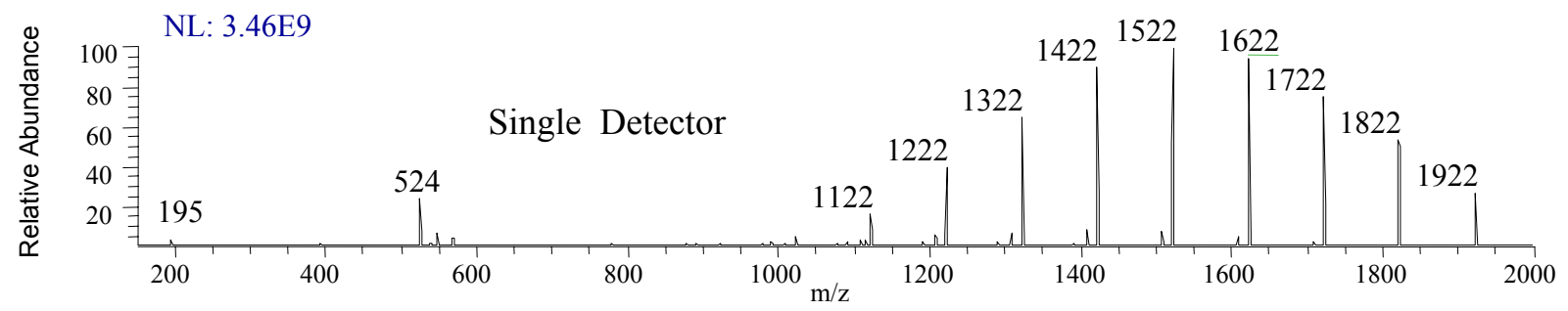
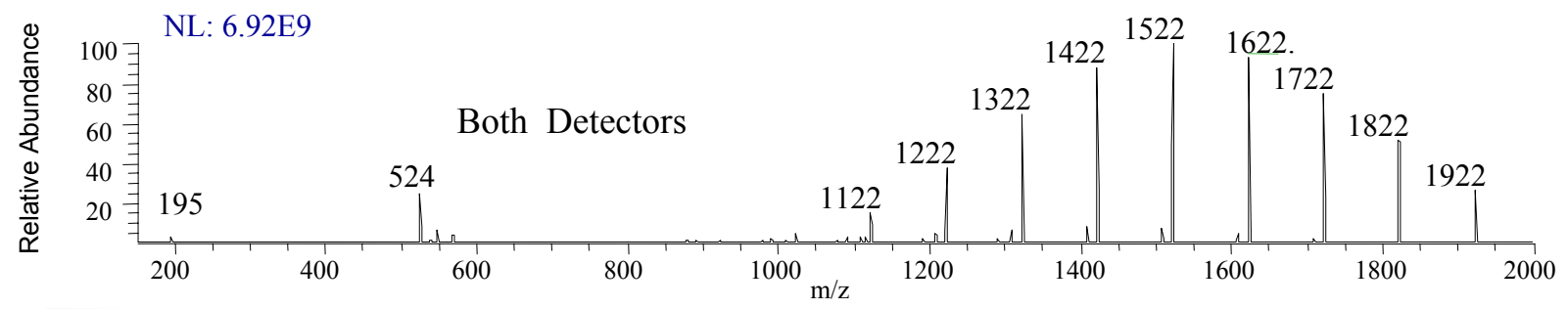
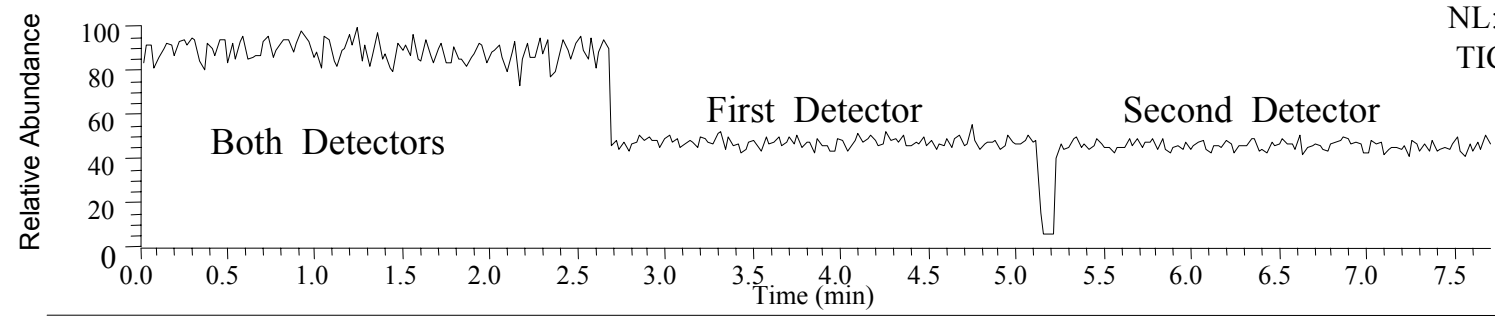


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Two Detectors - 2x Signal

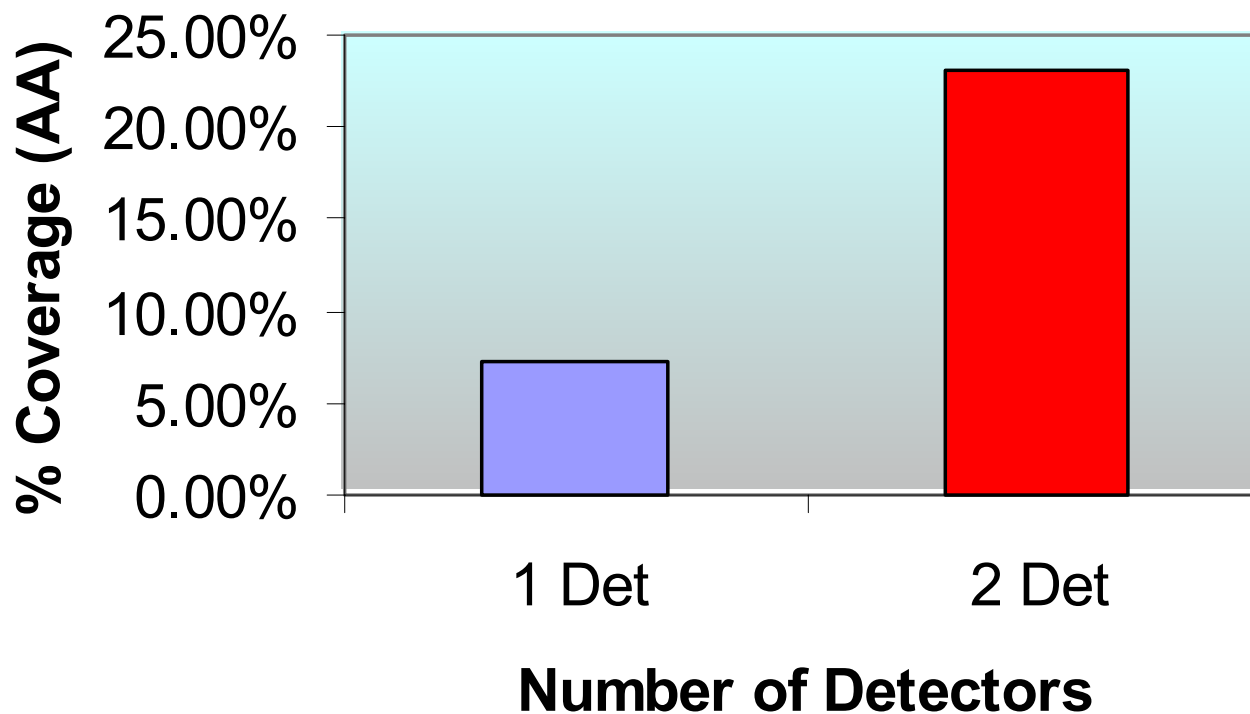
FINNIGAN LTQ

NL: 9.38E11
TIC MS



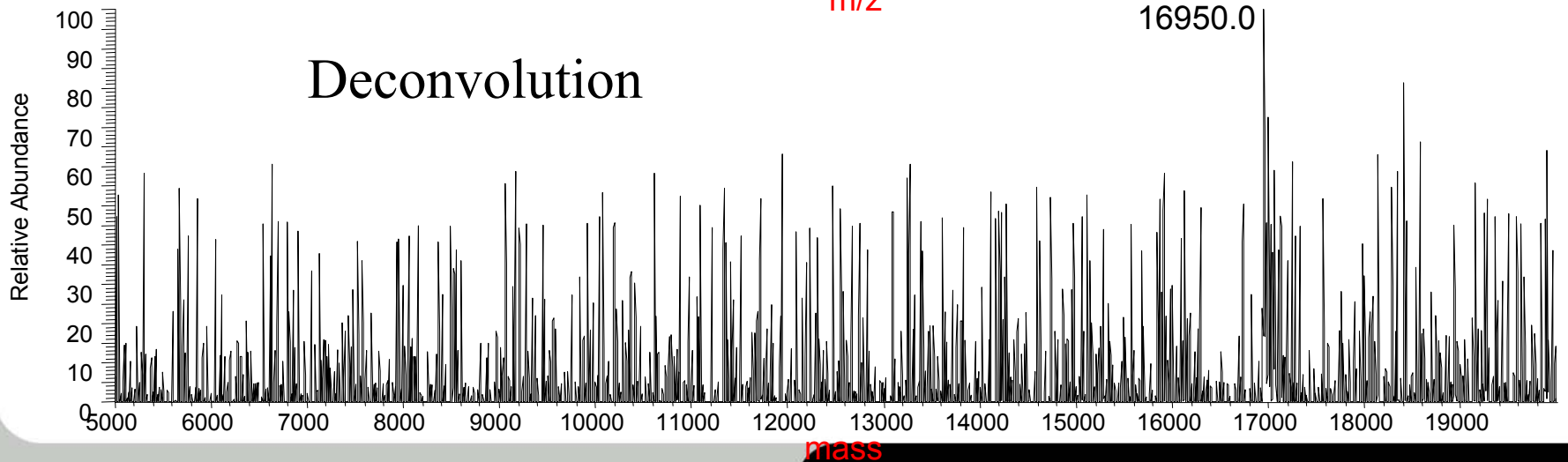
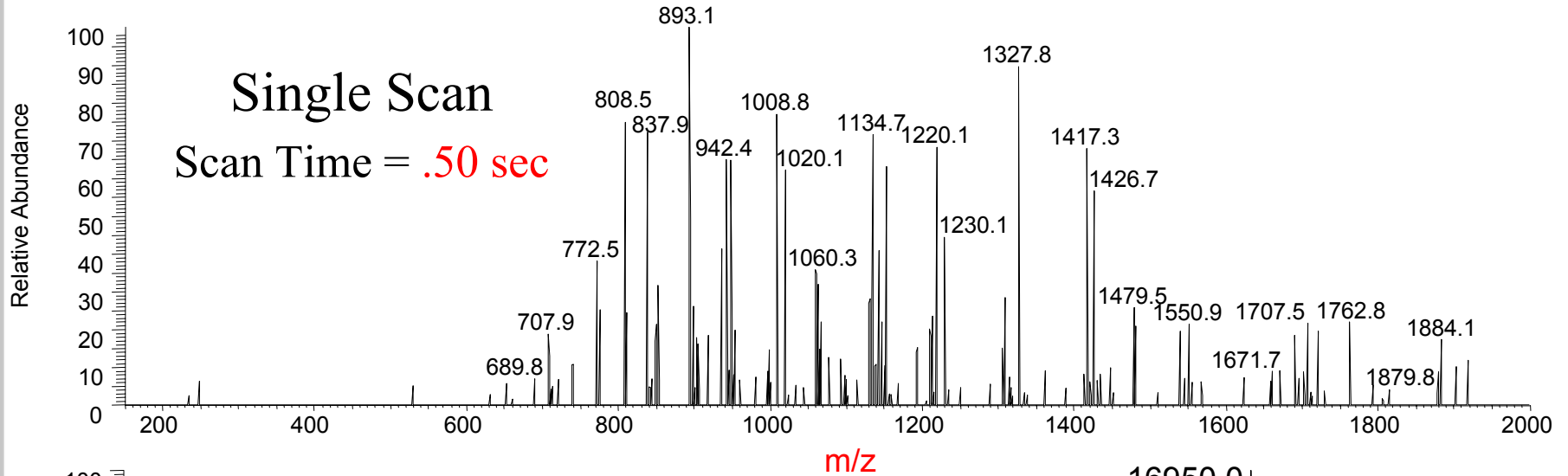
Better Coverage with 2 Detectors

200 amols of Myoglobin Digest Injected



FINNIGAN LTQ

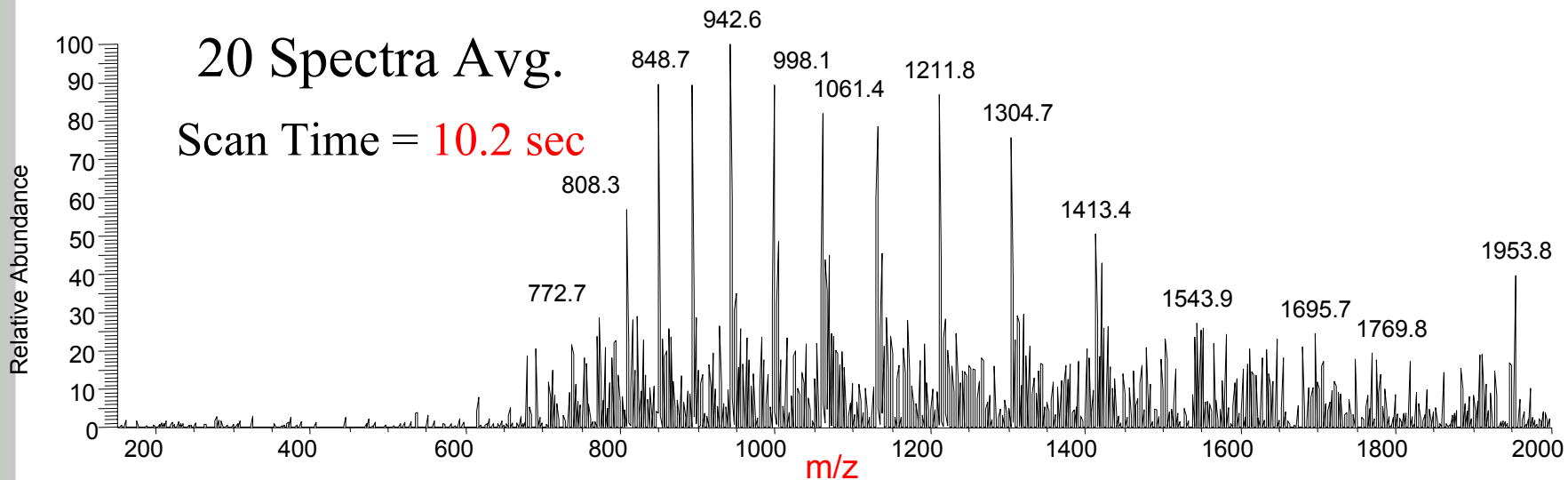
3D Trap - Myoglobin



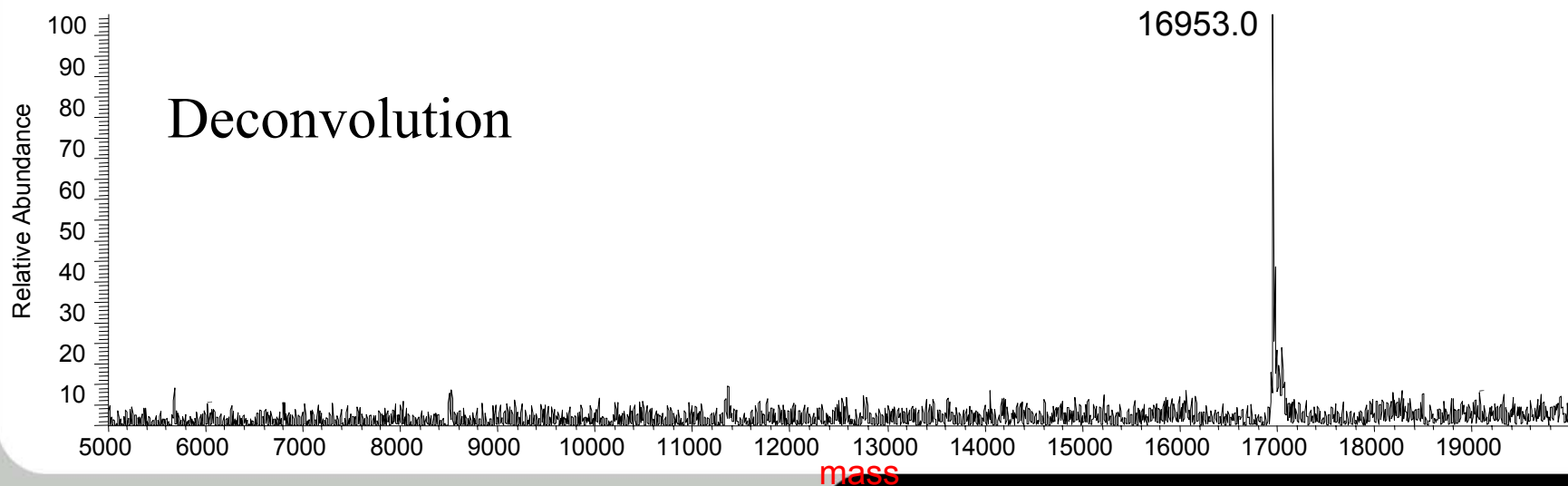
3D-Trap Myoglobin

20 Spectra Avg.

Scan Time = 10.2 sec



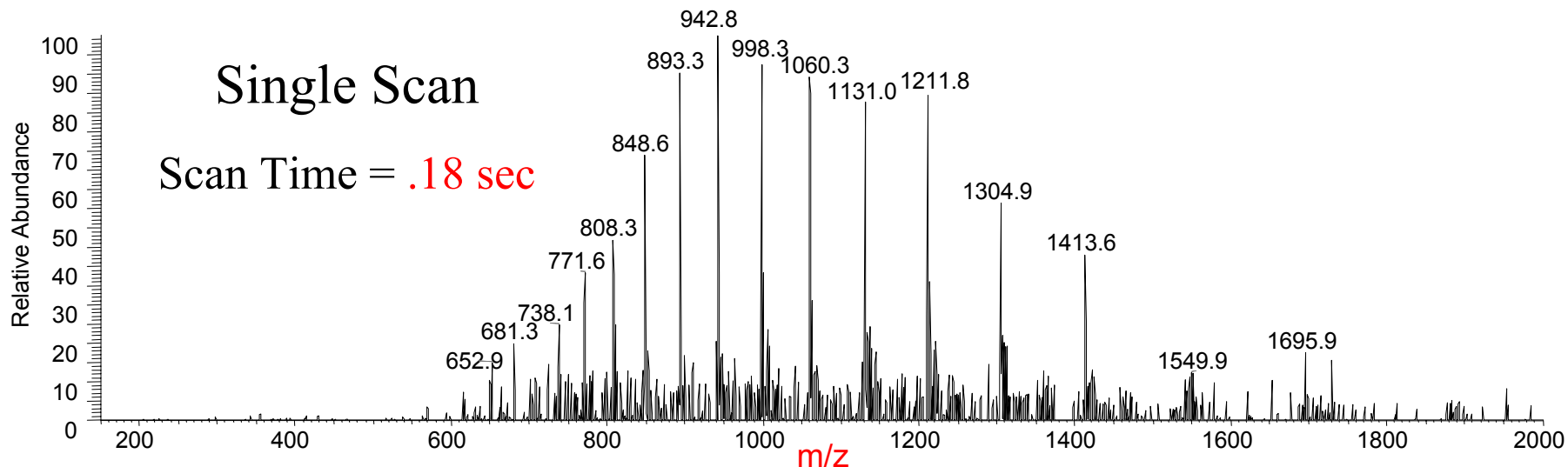
Deconvolution



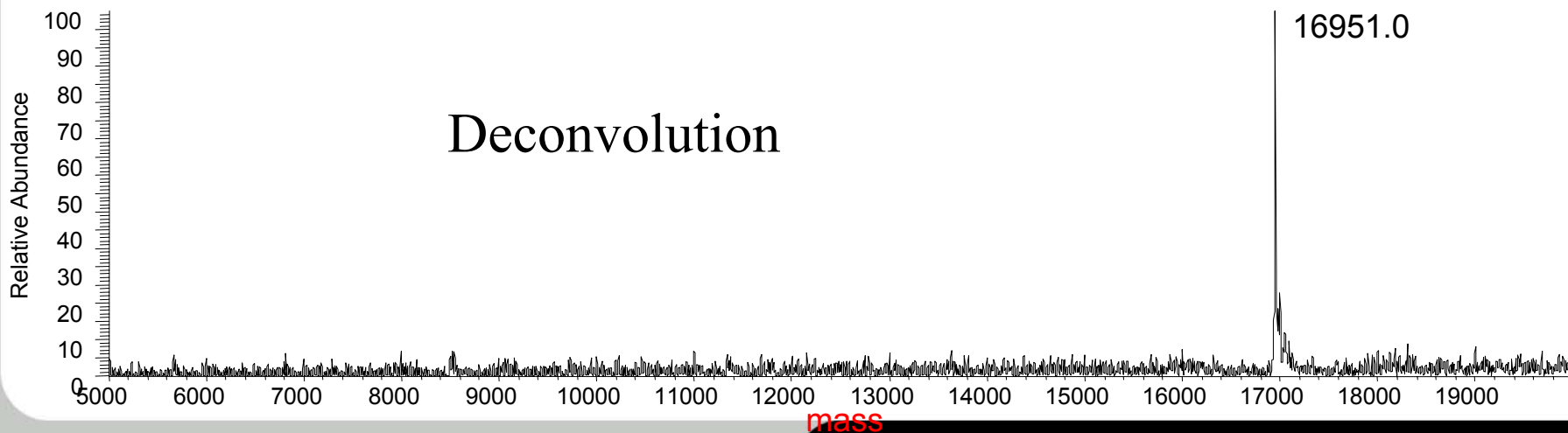
2D Linear Trap - Myoglobin

Single Scan

Scan Time = .18 sec

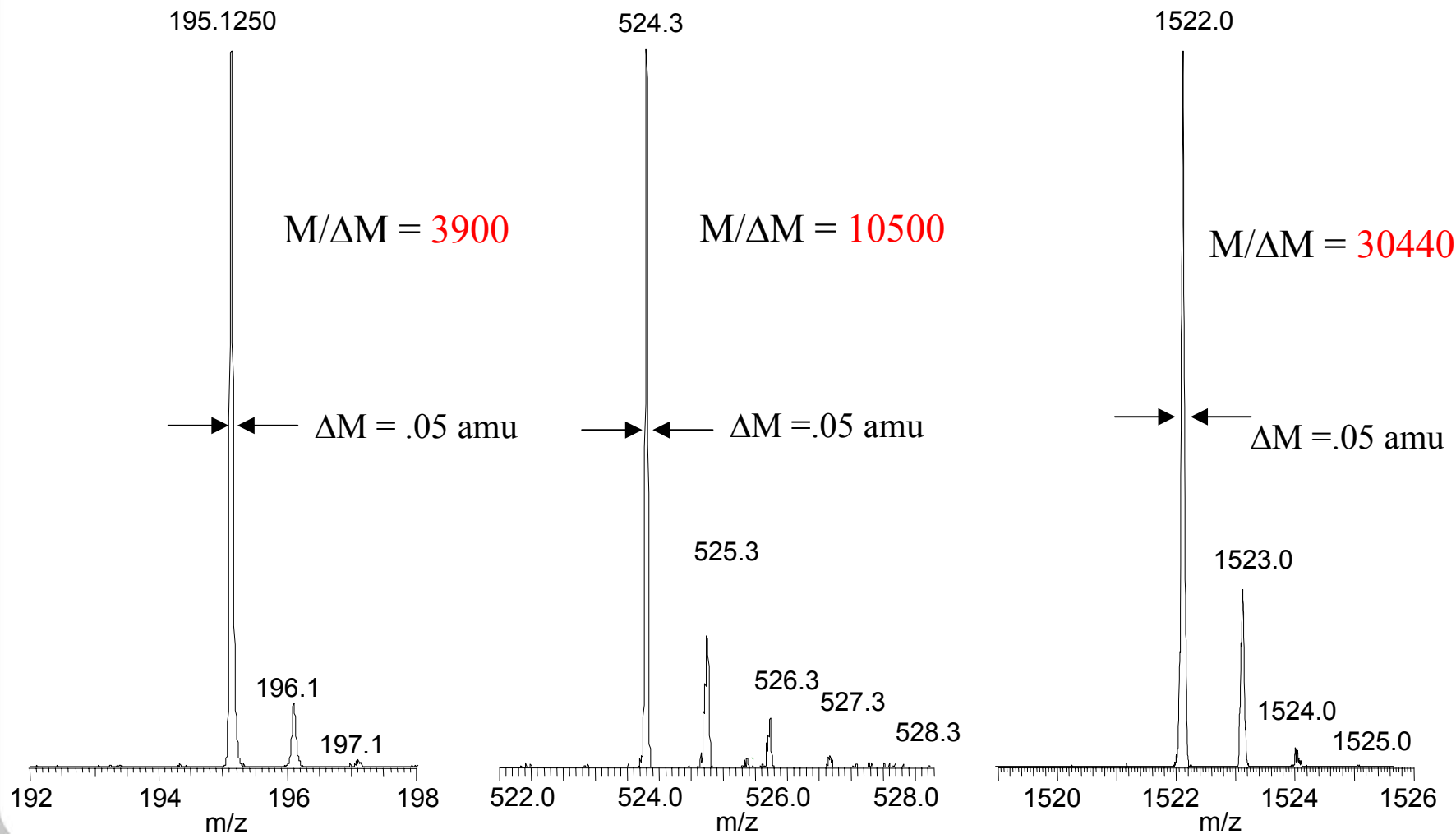


Deconvolution

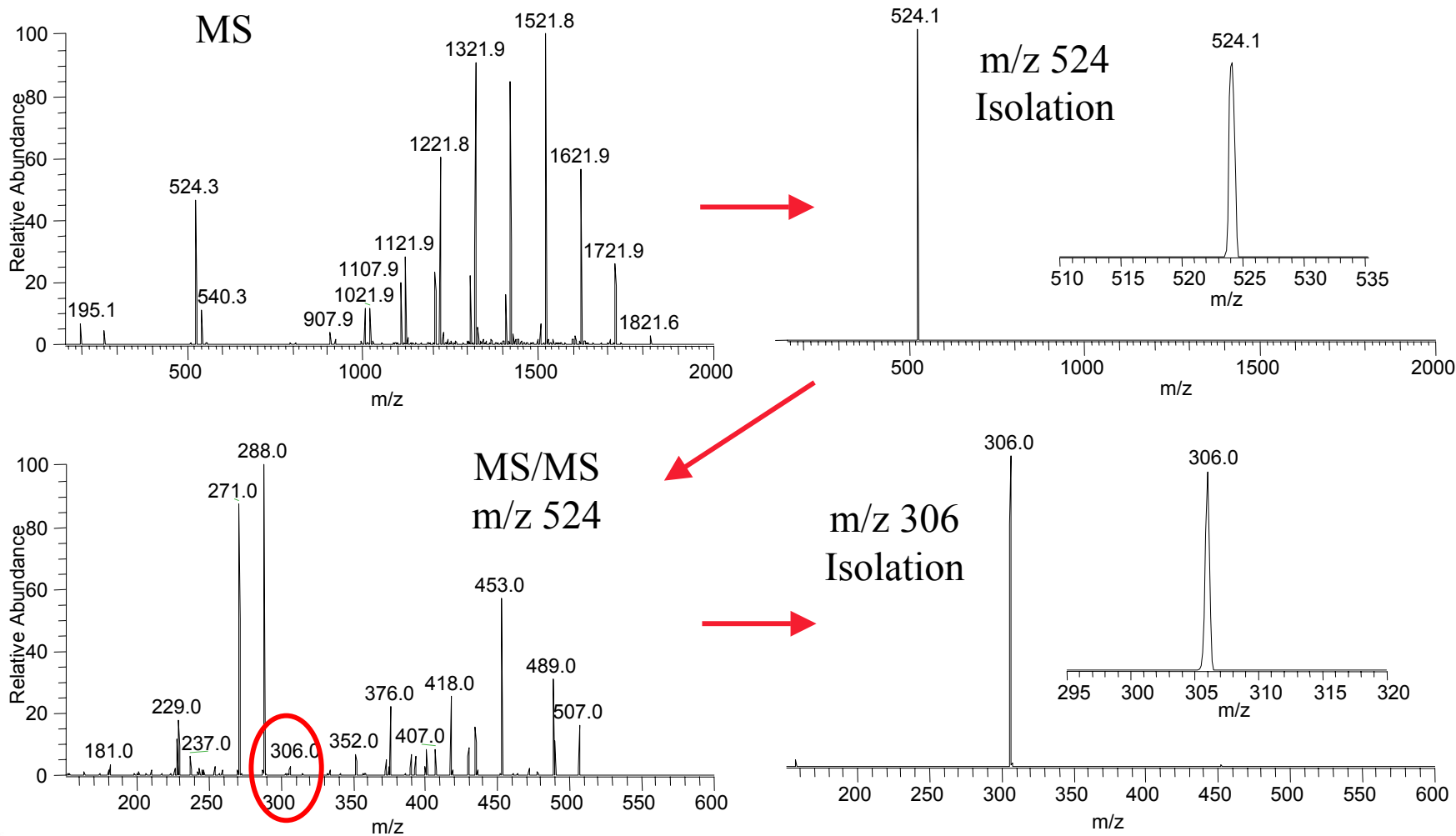


Even Higher Resolution !!!- Scan rate of 27 amu/sec

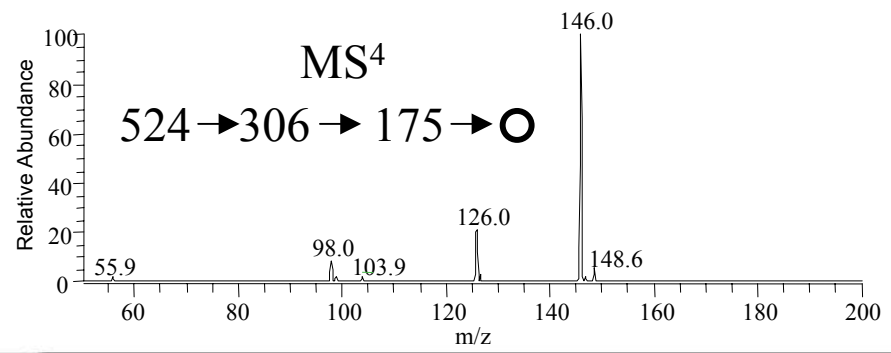
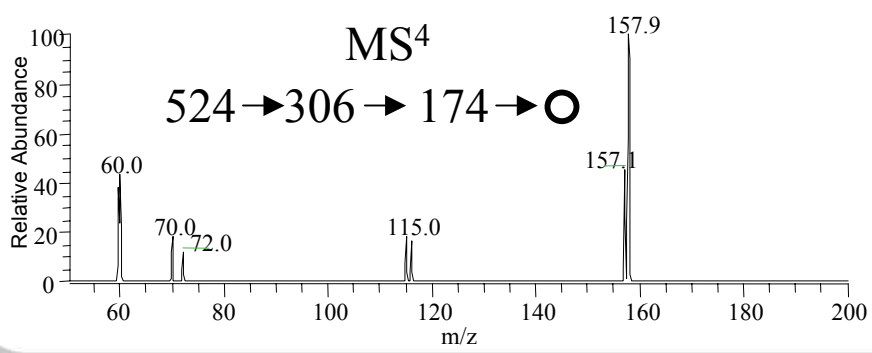
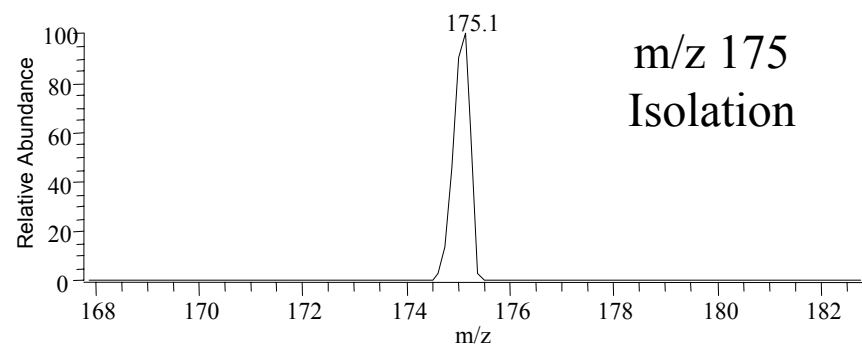
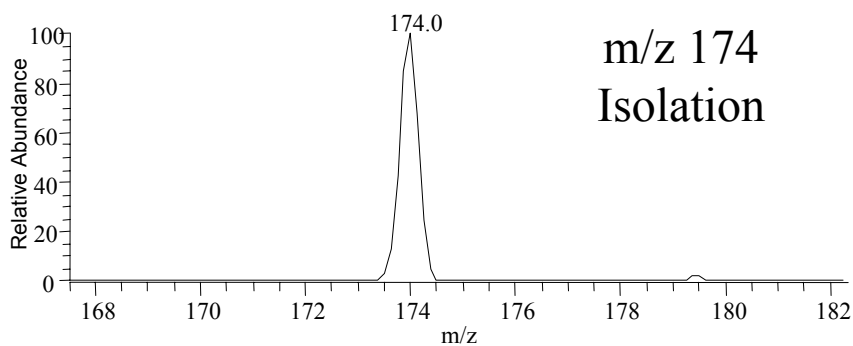
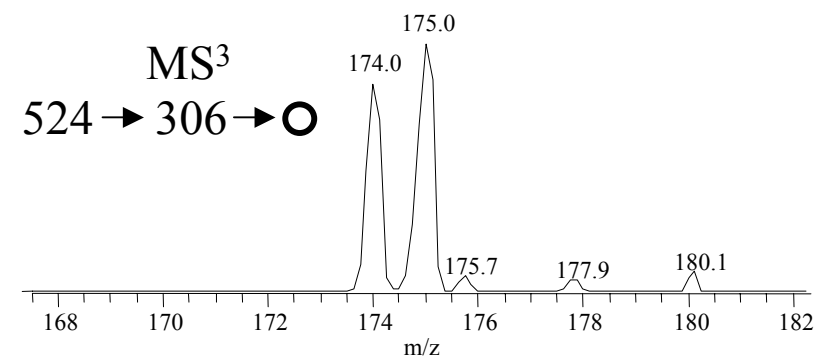
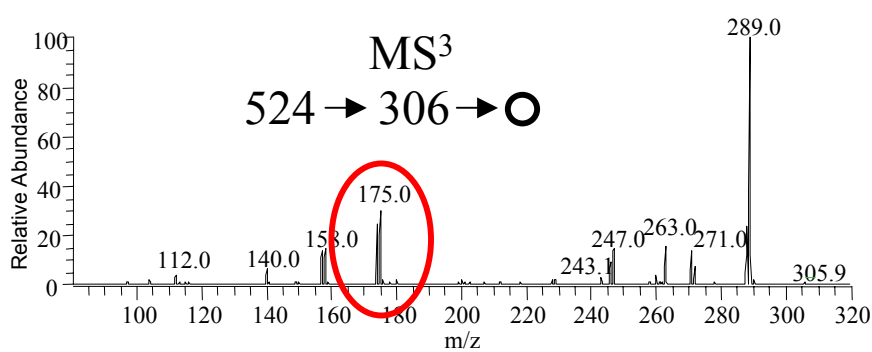
Single Scan Data!!!



MSⁿ on Low Abundance Ions

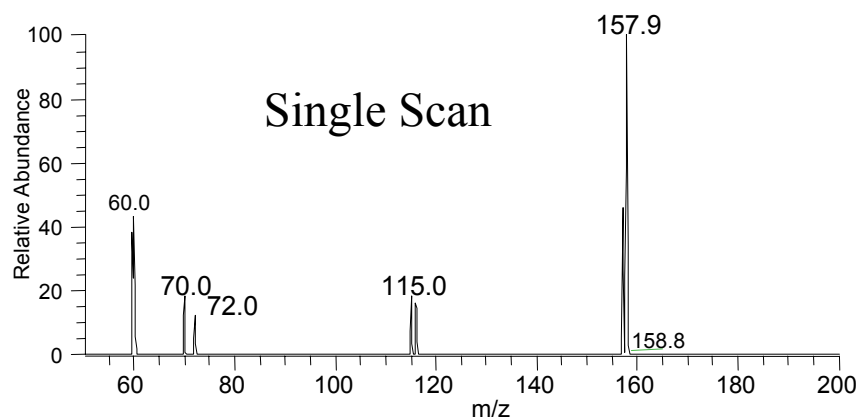


MSⁿ on Low Abundance Ions

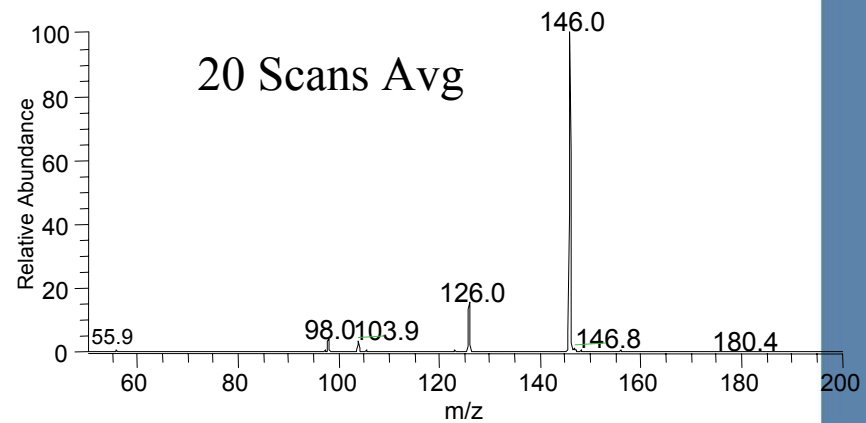
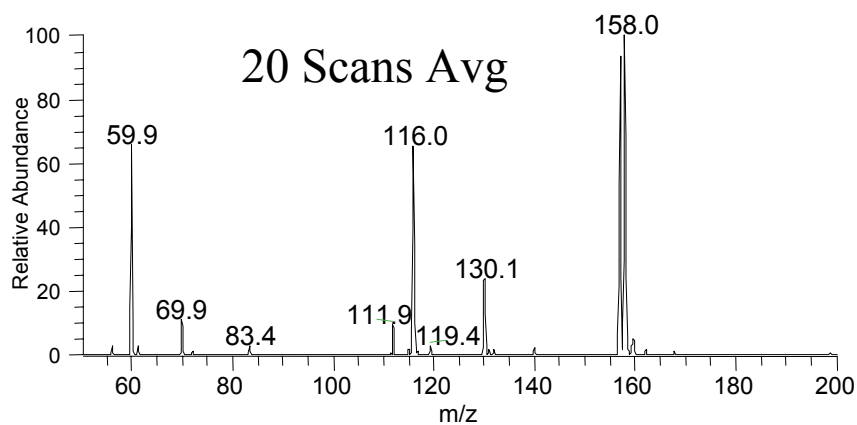
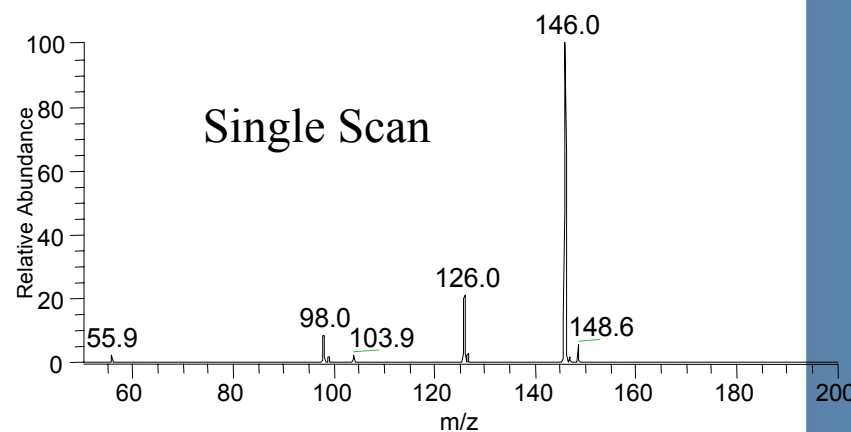


MSⁿ on Low Abundance Ions

MS⁴
524 → 306 → 174 → ○

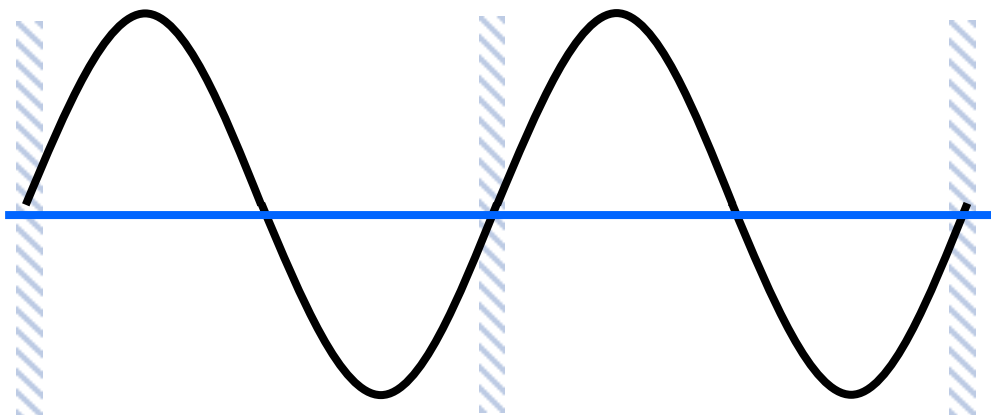
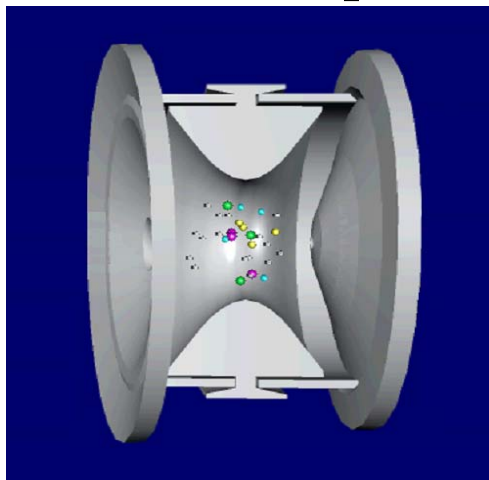


MS⁴
524 → 306 → 175 → ○



Trapping of Injected Ions

3D Trap



2D Trap

