Carter Research Update AP-ECD
April 2011

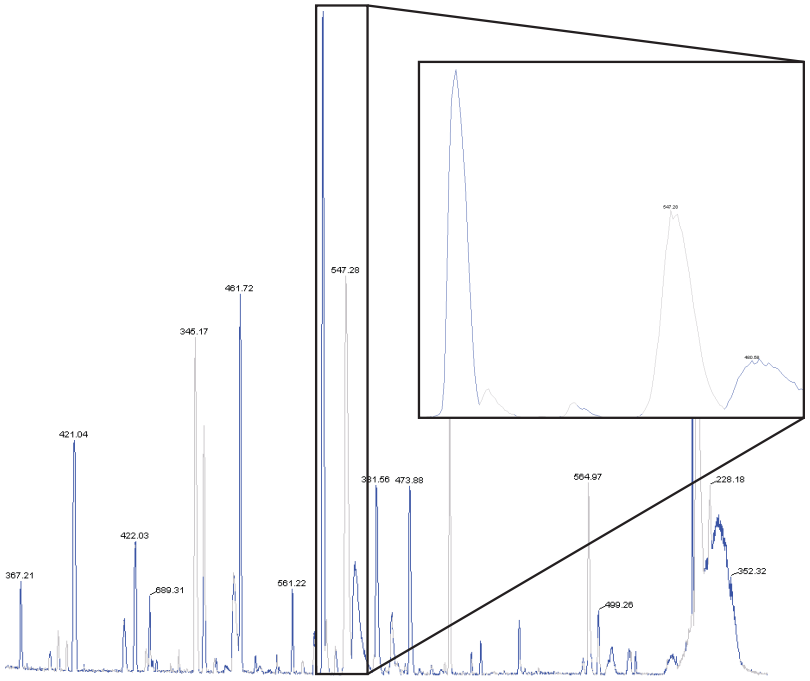
We've been taking small but significant steps on developing AP-ECD and are close to running simple mixtures

Where we were in March: We spent a lot of time trouble shooting the LC and MS in March trying to get it up to Jason's working levels. At the start of the month we got the instrument back up to mormal operating levels

What we've done in April:
We've advanced in three areas this month
Chrom: good separation, 30 sec peaks of BSA peptides, low background
AP-ECD: replicates of AP-ECD analysis of BSA and substance P with expected peaks
Sensitivity: 50 fmol is strong, possible attomole sensitivity

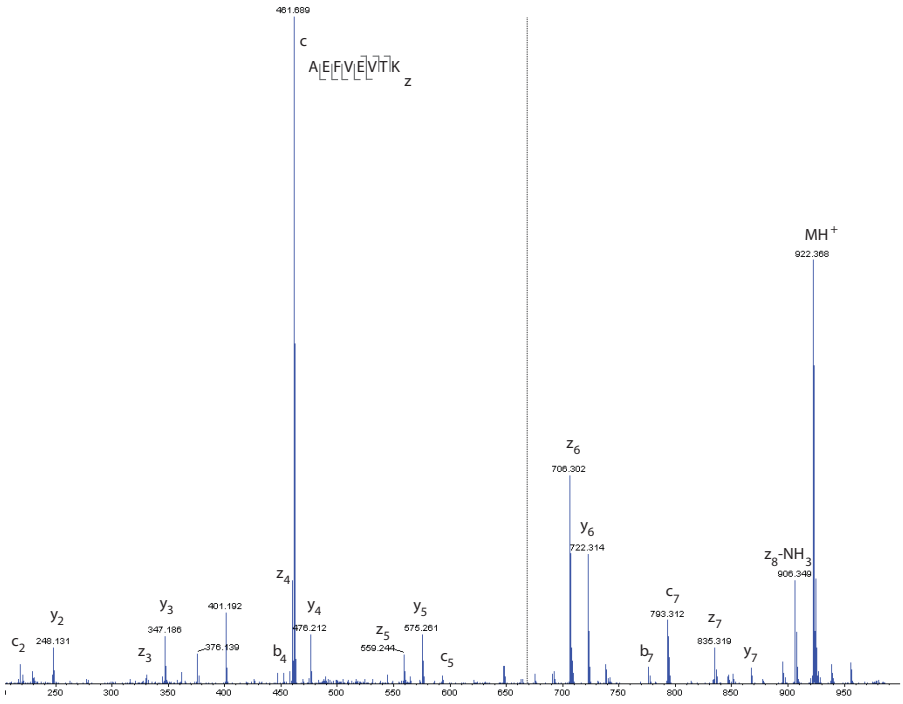
Where we're going in May: We're going to try peptides with PTM's for our ASMS/ CNPN data. Our ultimate goal, glycoprotein that Jason couldn't analyse via CID.

1.) Good Chromatography



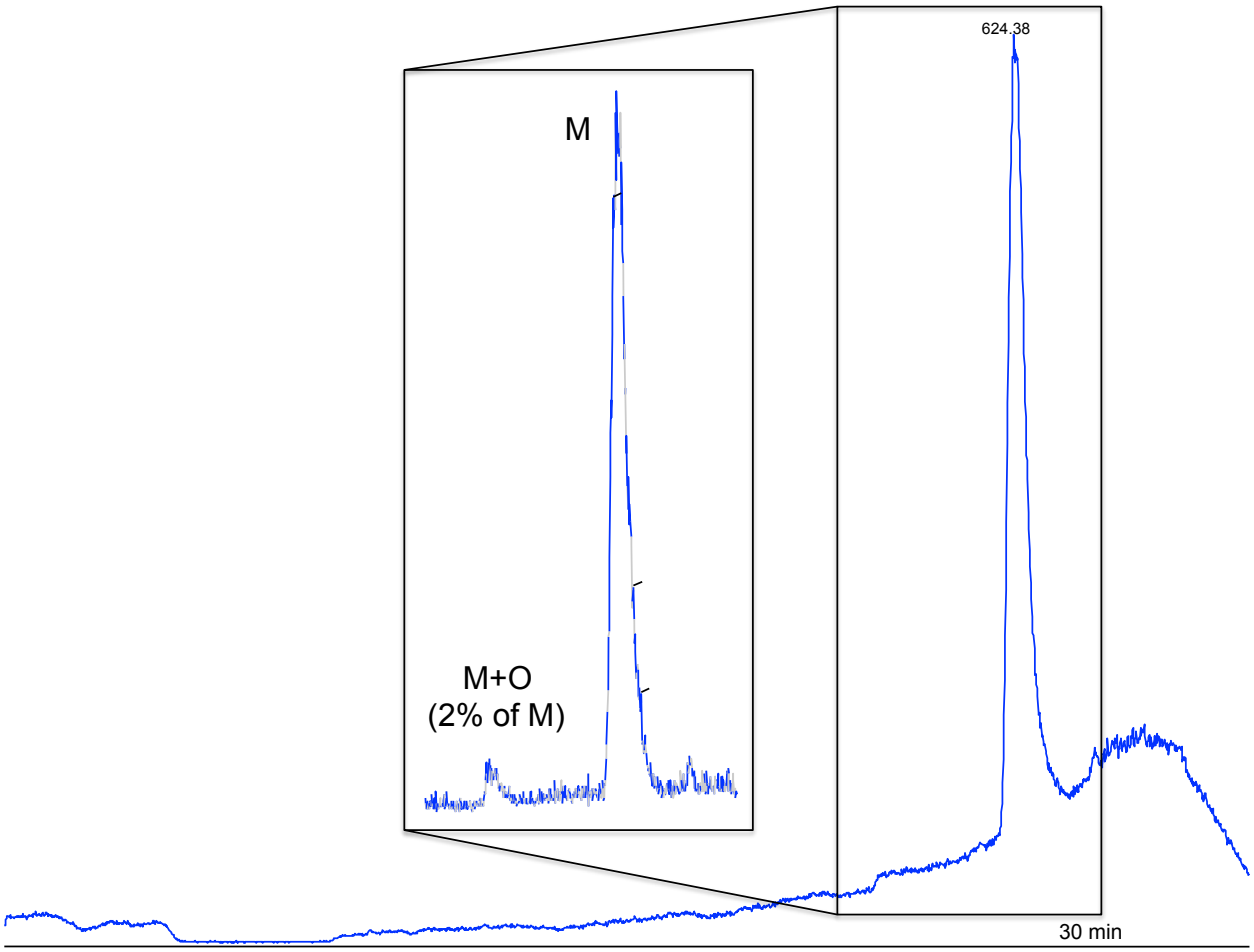
Chromatography with good separation of BSA peptides, 30 sec peaks, low background

2.) AP-ECD spectra



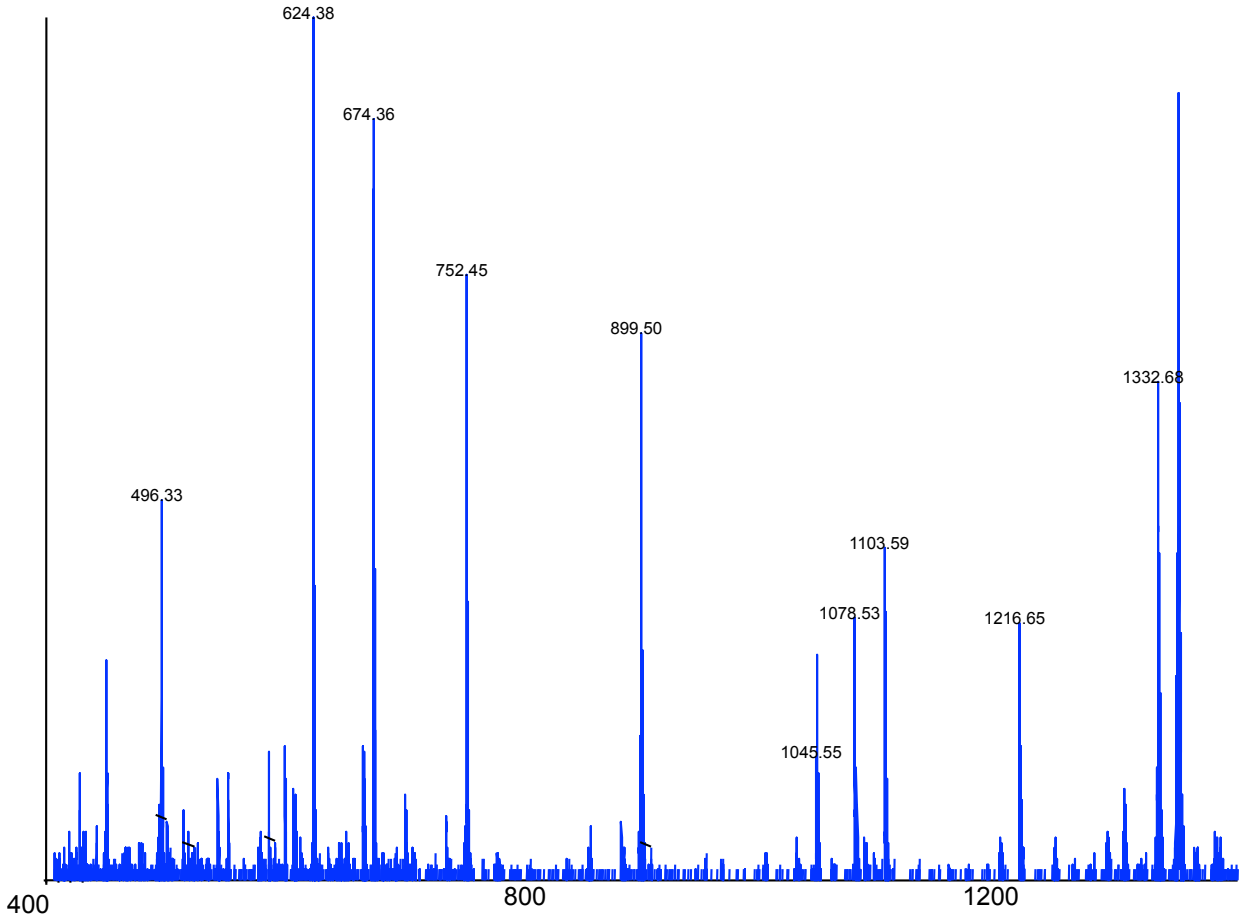
ECD (and CID) fragmentation with c & z ions of m/z 461 precursor.

3.) Low sensitivity



50 fmol TIC substance P with inset of base peak chromatogram showing M+O side product

The M+O product is time dependent and appears after samples are acidified with 0.1% formic acid.



AP-ECD of Substance P at 50 fmol

Looking at the M+O peak that is about 2% of the analyte peak and interpolating from signal to noise of the background subtracted spectra the limit of detection of AP-ECD appears to be in the high attomoles (800 attomoles)