# ECD and EID fragmentation of peptides and intact proteins using a Quadrupole Time-of-Flight Mass Spectrometer

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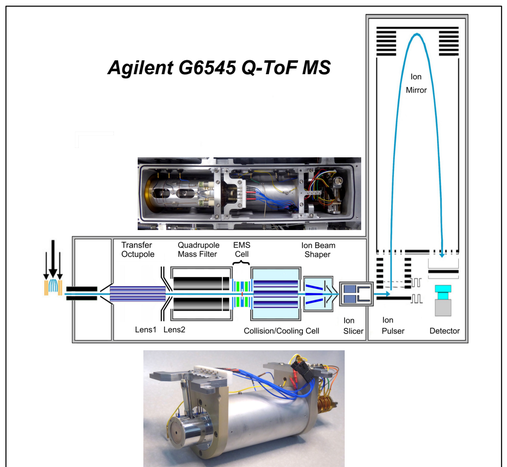


**Figure 1.** ECD cell and its position in 6545 Q-ToF

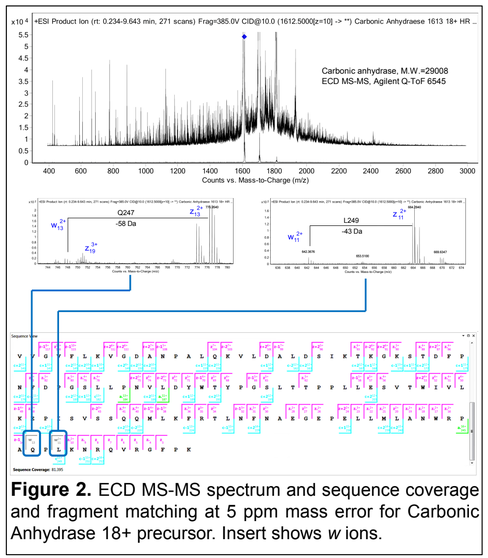


**Figure 2.** ECD MS-MS spectrum and sequence coverage and fragment matching at 5 ppm mass error for Carbonic Anhydrase 18+ precursor. Insert shows *w* ions.

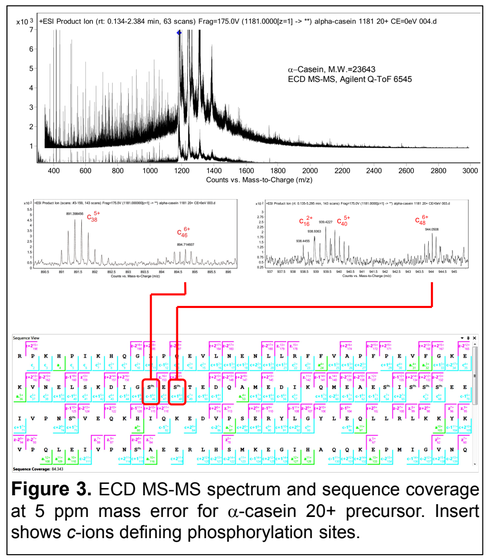


**Figure 3.** ECD MS-MS spectrum and sequence coverage at 5 ppm mass error for α-casein 20+ precursor. Insert shows *c*-ions defining phosphorylation sites.

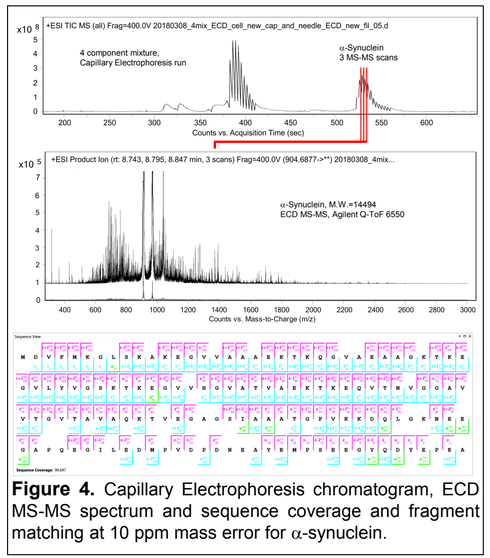


**Figure 4.** Capillary Electrophoresis chromatogram, ECD MS-MS spectrum and sequence coverage and fragment matching at 10 ppm mass error for α-synuclein.

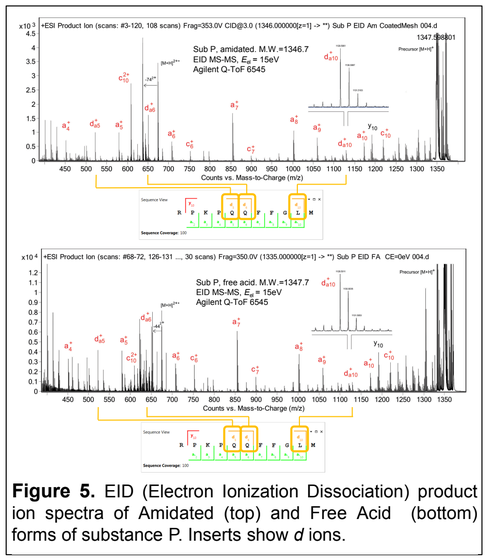


**Figure 5.** EID (Electron Ionization Dissociation) product ion spectra of Amidated (top) and Free Acid (bottom) forms of substance P. Inserts show *d* ions.

- *Fort et al.* **WOH pm 02:50** "Implementing an Electrostatic ECD Cell on a Q-Exactive Enabling ECD and EChcD Fragmentation" *ASMS 2018 San Diego, CA, June 03-07.*
- *Vasil'ev et al.* **ThP 800** "Hybrid ECD Methods for Middle-Down And Top-Down Proteomics Implemented in a Benchtop Quadrupole Orbitrap Mass Spectrometer" *ASMS 2018 San Diego, CA, June 03-07.*
- Hill et al. **TOB am 09:30** "On-Line Nanolc-Ion Mobility-Electron Capture Dissociation Tandem MS Analysis of Peptide Mixtures and Glycoprotein Digests on an IMQTOF Mass Spectrometer" *ASMS 2018 San Diego, CA, June 03-07.*

## e-MSion ECD technology:

1. Compatible with virtually any mass spectrometry platform (Fig.1);
2. Original functionalities of the retrofitted instruments are retained;
3. Allows Leu & Ile to be distinguished (Fig.2, 5 );
4. Preserves Post Translational Modifications (Fig.3);
5. Fast, compatible with HPLC, CE and Ion Mobility (Fig.4);
6. Higher electron energy modes available (Fig.5);
7. Provides high sequence coverage;
8. Provides low false discovery rate.

## Acknowledgement

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