Excellims offers a compact ion mobility mass spectrometer system based on its proven high performance ion mobility spectrometry (HPIMS™) in combination with a miniaturized ion trap mass spectrometer. The MC3100 is the first small-footprint analytical system that identifies chemicals based on both ion mobility and ion mass; it offers superior isomer separation and chemical identification capability while providing chemical structure information via direct collision cross-section measurements.

Several modes of operation are available, including IMS-only, MS-only, and simultaneous IMS-MS to produce a two dimensional mobility vs. m/z plot.

Alternatively, the IMS can be used as a prefilter for the mass spectrometer: particular mobility peaks can be selected for mass analysis, or particular mobility peaks or mobility ranges can be blocked from entering the mass spectrometer. By removing or including specific mobility-selected ions for subsequent MS and MS/MS analysis, spectral complexity and congestion can be reduced. By enriching desirable ion populations, the MC3100 delivers added confidence in compound identification.
**Hardware**

**Excellims MC3100**
- Drift tube length: ~10 cm
- Drift tube voltage: Up to 10 kV
- Ion gate pulse width: From 30 µs up to the maximum drift range setting
- Mass analyzer: Ion trap
- Vacuum system: 10^{-5} torr

**Performance Characteristics**
- Mobility resolving power: 60-120
- Drift time range: 0-50 ms
- Drift time accuracy: ±30 µs
- Drift gas: N_2, Air, He, etc.
- Operating temperature: 30-250°C
- Operating pressure: Ambient conditions
- Mass resolution: Unit

**Software**

**Excellims Vision™ Trap**
- MC3100 Software package includes control and data acquisition software for fully integrated HPIMS and ion trap mass spectrometers

**Excellims Vision™ Analysis**
- For post data processing of both ion mobility and m/z data, offering 2D data visualization and chemical identification

**Sample Introduction Options**
- Infusion ESI source
  - Continuous liquid sample introduction; compatible with the use of an autosampler or HPLC
- Directspray™ ESI source
  - Rapid liquid sample screening; no additional pump needed
- Thermal Desorber with Corona Discharge Ionization source
  - Solid phase sample introduction
- Direct gas phase sample inlet
  - Gas phase sample introduction

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![Ion mobility spectrum](image1)

![Mass spectrum](image2)