EXCELLIMS

Innovation for Excellence in Detection Technology

RA4100 High Performance Ion Mobility Spectrometer – Mass Spectrometer

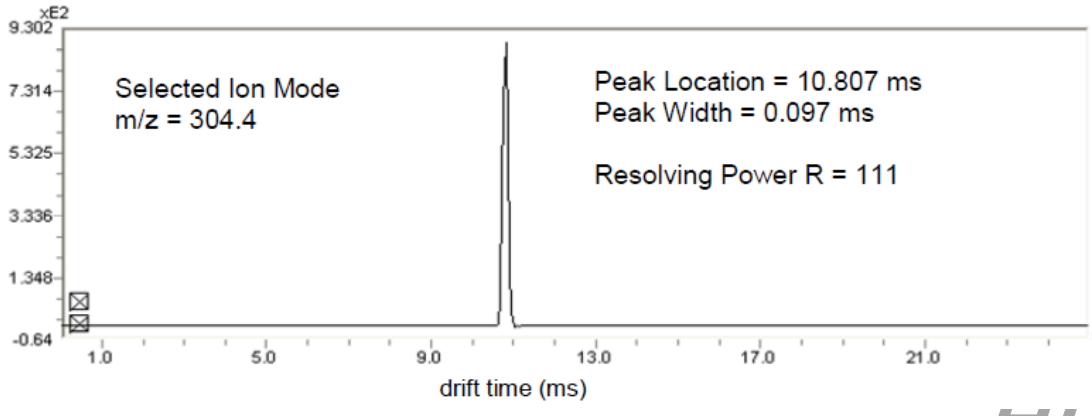
- *World's highest resolution commercial HPIMS-MS delivers resolving power of 60-100*
- *Automated HPIMS-MS operation enables mass identification of ion mobility separated ions*
- *Changeable ion sources for versatile analysis of solids, liquids, and gases*
- *Optional autosampler for high volume sample analysis*

Separation and compound identification with RA2100 – HPIMS-MS integrated system

The RA4100 HPIMS-MS instrument allows for simultaneous separation, detection, and identification of compounds by combining high performance ion mobility spectrometry and mass spectrometry. The high resolution HPIMS system coupled with a quadrupole MS includes state of the art hardware and software, and is designed to provide the best sensitivity and superior quantitation performance in target analysis. The RA4100 is a reliable tool for understanding the behavior of standalone HPIMS instruments in field applications.

The RA4100 performs independent ion mobility and mass spectrometry analyses. An ion mobility scan on a selected m/z correlates drift times to m/z ratios.

The data acquisition system allows synchronization with a thermal desorber, autosampler, sample pre-concentrator, and/or chromatographic system. An optional drift gas modification unit provides advanced tools to introduce humidity, dopants, and chemical modifiers into the drift tube for study of molecular ion reactions and interactions.



HPIMS™

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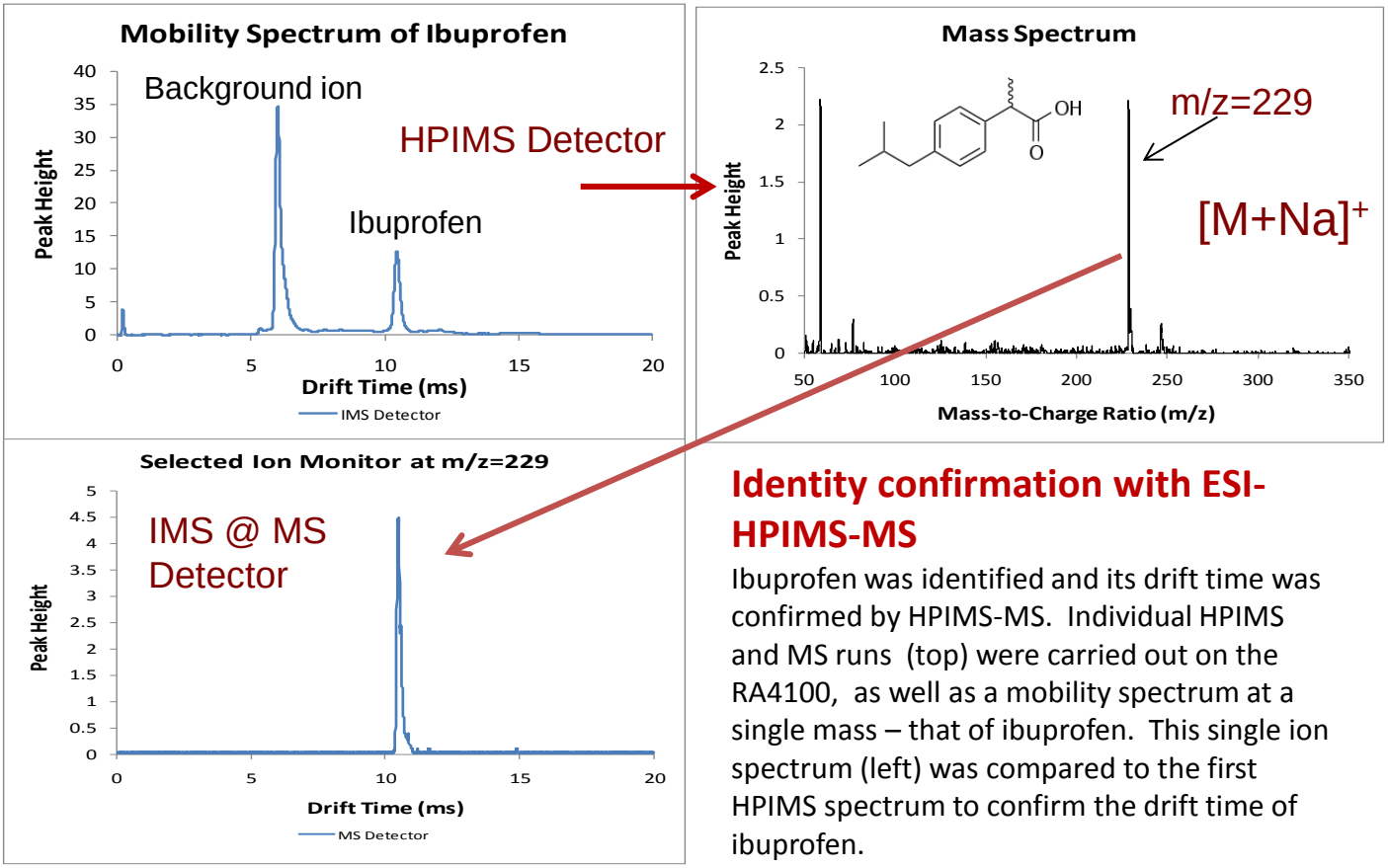
Separate and identify compounds by HPIMS-MS

Ion mobility drift times and m/z ratios are connected by RA4100



Identity confirmation with ESI-HPIMS-MS

Ibuprofen was identified and its drift time was confirmed by HPIMS-MS. Individual HPIMS and MS runs (top) were carried out on the RA4100, as well as a mobility spectrum at a single mass – that of ibuprofen. This single ion spectrum (left) was compared to the first HPIMS spectrum to confirm the drift time of ibuprofen.

Flexible configurations add versatility

Changeable ion sources for solids, liquids, & gases; optional unit for drift gas modification

Ion sources options

Liquid samples are ionized by the Directspray™ ESI source or by the infusion ESI source. The Directspray™ ionizes off of a syringe needle, while infusion connects to an autosampler or flow cell. Solid samples are analyzed from a swab on the thermal desorber, which also includes an inlet for gas analyses.

Drift gas modification unit (DGMU)

An optional drift gas modification unit allows for advanced HPIMS method development. Better ion mobility separation can sometimes be achieved by using structure selective interaction between analytes and specific compounds in the drift gas.

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