

Ion Funnel

Interface For Mass Spectrometer

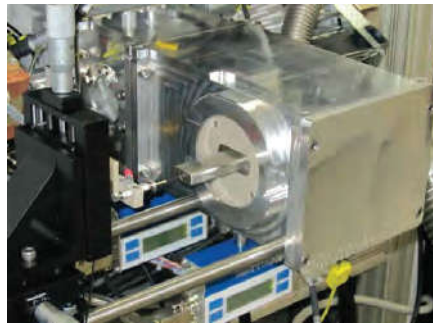
Benefits:

- 20- to 100-fold higher sensitivity
- 5-fold less chemical noise
- Stable robust operation

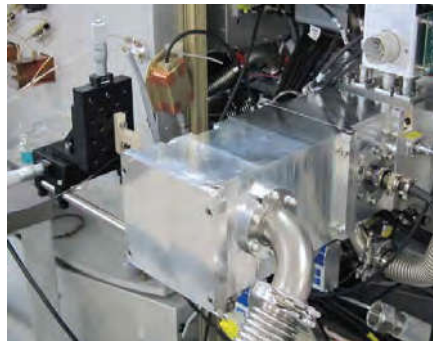
Features:

- Orthogonal injection into the RF field eliminates/drastically reduces instrument contamination
- Typical improvement in LOD varies from 5X to 100X, depending on the mass spectrometer design
- Interface is compatible with any mass spectrometer
- Coefficient of variance is less than 10% in LC-MS analysis of complex samples
- Full programmatic control, turn-key device amenable to custom-engineering

Ion funnel interface coupled to a LECO HRTOF



Ion funnel interface coupled to a Thermo Orbitrap



Ion funnel interface (IFI), a joint product from MassTech, Inc and Spectrograph, LLC and licensed from Pacific Northwest National Laboratory (PNNL), is designed to significantly improve your current mass spectrometer's performance.

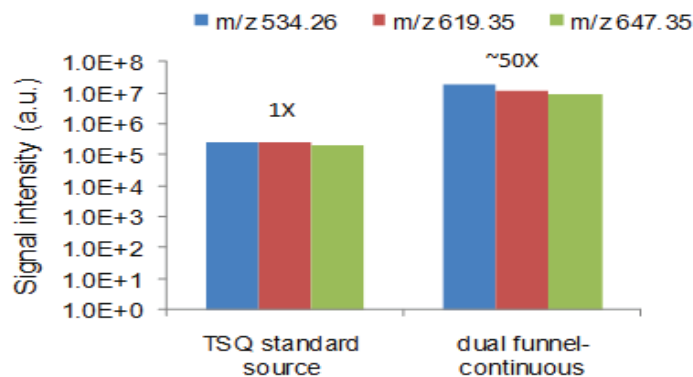
Here is how it works. A number of different types of mass spectrometers employ narrow apertures (skimmers) to separate differentially pumped vacuum regions in the front-end interface. A skimmer is capable of transmitting only a small fraction of an ion beam and thus represents one of the bottlenecks for achieving high analytical sensitivity within a mass spectrometer. IFI replaces your mass spectrometer's skimmer arrangement and enables highly efficient ion transmission through the elevated pressure regions of a mass spectrometer.

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Improved sensitivity in LC-MRM analysis of peptides from highly complex bacterial proteome

Parent ion: [Angiotensin I+3H]³⁺, m/z 432.90

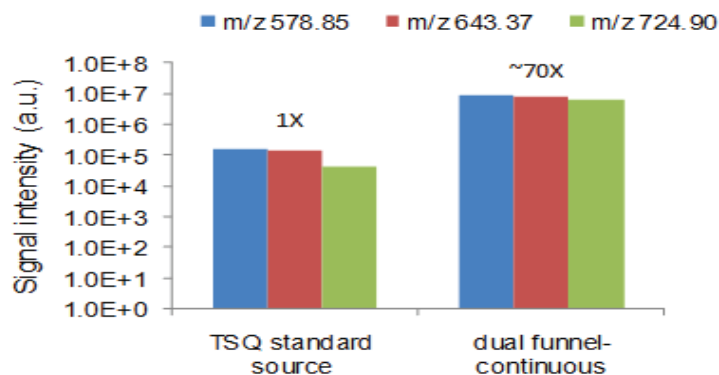


The NanoLC 1D plus Eksigent LC system combined with TSQ Quantum MS

LC column: 75 μ m i.d., 20 cm long packed with C18, 3 μ m particles, 100 Å pores

LC gradient: 40 min (H₂O/0.2%FA:ACN) 2-50%, flow rate 500 nL/min

Parent ion: [Neurotensin+3H]³⁺, m/z 558.31

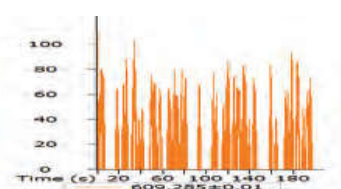
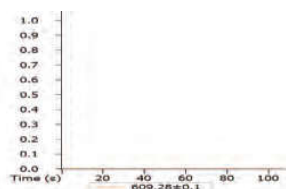


Improved LOD with a commercial TOFMS using direct infusion of reserpine

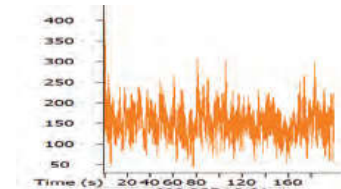
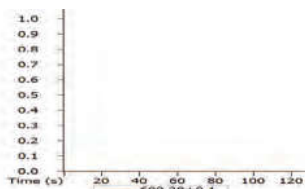
Commercial interface

Ion funnel interface

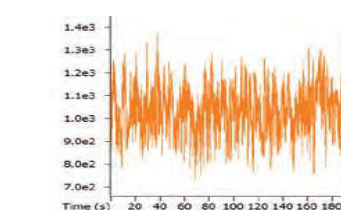
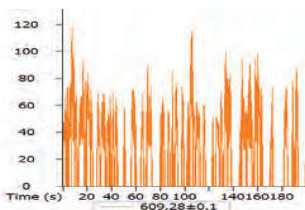
100 fg/ μ L



1 pg/ μ L



10 pg/ μ L



Spectrograph