

How does a new benchtop LC-IT/TOF compare with a high performance tripple quadrupole LC-MS-MS system for ADME studies of drug candidates ?

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Quantification of drug substances in plasma and other complex biological samples have been performed using a combination of fast LC (short column and high flow rate) and a fast scanning and sensitive time of flight mass spectrometer. Following results have been achieved: High speed of analysis (2.2 minutes cycle time), high chromatographic performance (0.4 sec. peak width at half height with 60 sec. gradient), large dynamic range and linear calibration curve (typical 1- 20 000nM). A comparison by running a number of plasma sample on both a triple quadrupole mass spectrometer and the 2D-Trap-TOF mass spectrometer shows that the quantitative results and the sensitivity were comparable. Use of narrow mass window higher selectivity without losing sensitivity can be achieved. Also accurate mass measurements and isotopic patterns by the 2D-Trap-TOF are of great value in bioanalysis work.

Data from a new Field Free Desorption APCI reagent ion gun (FF DAPCI) will be presented.

This technology can be used analysing samples direct without sample preparation. Examples of analysis of drug-tablets, dollar-bills and other surfaces will be shown. This new technology is more sensitive than other available techniques without having to use expensive gases.

A new combination flat membrane ESI probe/ElectroCapture instrument is under development.

HD-exchange data from this new technology will be presented. Proteins that are captured in the ElectroCapture Cell can now also be folded and un-folded on-line by the unique pH-scanning possibility.

Deuterium or/and metal-ions can be added to the protein/enzyme at different conformational stages without having to mix it in the analyte.