

Press Release

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LCMS-IT-TOF

Tandem mass spectrometer with MSⁿ capabilities

One of the fastest hybrid systems /

More qualitative information in a single experiment /

Maximized sensitivity and selectivity

Shimadzu, one of the world leaders in analytical instrumentation, has recently introduced a novel high-performance mass analyzer to the European market. The LCMS-IT-TOF is a hybrid-type system combining two mass spectrometric technologies, ion trap (IT) and TOF (time-of-flight). The LCMS-IT-TOF is ideally suited to the identification and characterization of unknown compounds as well as analysis of impurities and contaminations. It targets application areas such as metabolomics, proteomics, metabolite identification and biomarker discovery, all of which are of interest to forensics, environmental chemistry and pharmaceutical analysis.

The new instrument provides more qualitative information about a sample collected in one single experiment. In this way, there is no need for multiple analyses or analysis of the sample via several different types of instruments. In addition, one single injection yields

information on positive as well as negative ions, which is extremely useful for the analysis of unknown compounds. Thanks to an auto-tuning function and the easy-to-operate LCMSsolution software, scientists are able to obtain excellent results for their research projects.

Maximized sensitivity and selectivity

Coupling ionization at atmospheric pressure (API) with ion trap and TOF technologies, the LCMS-IT-TOF delivers high mass accuracy and high mass resolution independently of the MS mode.

Owing to the high quality of the acquired data, candidate composition formulas of unknown compounds can be generated with the aid of the software supplied with the instrument.

The performance of this quadrupole ion trap and the optimized ion transport to the TOF analyzer allows maximum sensitivity and selectivity to go hand-in-hand. The ion trap is not only used to focus ions prior to ejection into the TOF analyzer, but it also supports fragmentation, MSⁿ analysis and high precursor ion selection capabilities. A highly precise precursor ion selectivity is provided for the isolation of ions for further fragmentation analysis, simplifying the interpretation of MS/MS data and enhancing the detection selectivity, particularly for complex matrices.

The fast switching speed of only 100 ms between positive and negative ionization, combined with patented Compressed Ion Injection (the transformation of a continuous ion beam into discrete ion pulses), Ballistic Ion Extraction and Dual-Stage Reflectron technologies, make the LCMS-IT-TOF a true milestone for biomarker discovery, metabolite identification, proteomics and the analysis of impurities.



Caption: New hybrid of a high-performance mass analyzer:
the LCMS-IT-TOF

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