

Shimadzu LCMS- 8060

The LCMS-8060 features an optimized ion guide and new technologies incorporated in the ion transport optical system.

As a result, the ion sampling efficiency and ion focusing capability are significantly increased, to achieve improved sensitivity, approx. 3 times better than that of the LCMS-8050. Inheriting the high-speed performance of the LCMS-8050, this flagship model in the UFMS series features both the world's highest level of sensitivity and the world's highest throughput. It is capable of detecting ultra trace components in complex matrices, which have been difficult to detect to date, both quickly and with high sensitivity. This will contribute to further improvements in data quality in all types of trace quantitative analysis applications, such as for biological samples, which requires the highest level of sensitivity.



The Shimadzu LCMS- 8060 can solve complex problems

High-sensitivity quantitation of intact catecholamines (CAs) in human plasma.

In clinical research, plasma catecholamines and their O-methylated metabolites (metanephrines) are measured as biomarkers for diseases such as hypertension, pheochromocytoma or neuroblastoma.

It is a challenging assay as the low physiological levels of CAs, physicochemical properties, and potential interferences require high sensitivity and specificity.

We developed a SPE-LC/MS/MS assay by using LCMS-8060 to detect catecholamines at ultra-high sensitivity without matrix interferences. As the measurement cycle time was 12 mins including the column re-equilibration the LCMS-8060 assay opens new possibilities for multiplexed sample analysis and higher sample throughput.

Features Shimadzu LCMS-8060

Sensitivity of Shimadzu LCMS-8060

By redefining the ion focusing capability on the UF-Qarray, the LCMS-8060 brings a meaningful impact to quantitative detection and opens new opportunities for scientists to deliver solutions that make a true difference. The newly developed UF-Qarray ion guide is a groundbreaking technology that increases LC/MS/MS sensitivity by enhancing ion signal intensity and reducing noise. By improving the ion sampling device, the ion guide, and the vacuum efficiency, the LCMS-8060 delivers a new vision of sensitivity and makes a real difference to working better and faster.

Stability of Shimadzu LCMS-8060

The robustness of the LCMS-8060 and modified ion optics was also assessed by injecting 2400 samples of femto-gram levels of alprazolam spiked into protein-precipitated human plasma extracts over a 6 day period (over 400 samples were injected each day). The RSD of peak area response was 5% over this test period, using a deuterated internal standard (alprazolam-d5) the RSD was 3.5%. As part of the robustness test the vacuum system was vented to model a transient power failure with no effect on signal response or baseline noise level.

Speed of Shimadzu LCMS-8060

Inspired by the need to balance advanced high speed MS/MS detection technologies with unrivalled LC performance, we were the first mass spectrometry company in the world to deliver a scan speed of 15,000 u/sec and a polarity switching speed of 15 msec. In the LCMS-8060 the scan speed is now increased to 30,000 u/sec and a polarity switching speed of 5 msec making a real difference to working better and faster.

Fast polarity switching of Shimadzu LCMS-8060

The LCMS-8060 uses UF Technologies to switch polarity in 5 msec.

Shimadzu LCMS-8060 detects more

- Fast cycle time helps to detect more compounds with greater confidence and precision.
- Faster polarity switching time maximizes dwell times and helps to optimize the cycle time of LC/MS/MS methods.