API 5000™
LC/MS/MS System
The world’s most sensitive LC/MS/MS system
A new benchmark for quantitative small molecule analysis.

The API 5000™ LC/MS/MS system is today’s most sensitive triple quadrupole mass spectrometer for complex bioanalytical samples. Designed to deliver the lowest limits of detection for the most demanding DMPK and ADMET studies, the system combines new QJet™ ion guide technology with the proven Turbo V™ ion source and a powerful new generation of Analyst® software. The result is a robust, high-throughput platform for every phase of pharmaceutical development, from drug discovery through clinical trials—and a new level of quantitative performance in a reliable, easy-to-use system.
Advanced technology in a class by itself.

**Innovative Turbo V™ ion source**
Efficiently ionizes compounds and virtually eliminates cross-contamination, even with large sample loads. Embedded ceramic heater technology and improved gas dynamics contribute to the system's low detection limits, and enable highest sensitivity quantitation over the wide range of flow rates used in pharmaceutical analyses.

Quick-change ESI and APCI probes let you switch between ionization modes in seconds.

**PhotoSpray® ion source**
An additional option for atmospheric pressure photo-ionization, the PhotoSpray source expands the range of compounds that can be analyzed, often at higher sensitivities than ESI or APCI.

**Proprietary Curtain Gas™ interface**
Reduces the need for routine maintenance and ensures maximum uptime and productivity by protecting the interface region and quadrupole analyzer from contamination.

**DuoSpray™ ion source**
The optional DuoSpray™ ion source contains both ESI and APCI inlets, allowing computer-controlled optimization of ionization parameters for each compound during an LC run, making it an ideal tool for fast method development as well as increasing throughput and data quality.
Revolutionary new QJet™ ion guide
Replaces the skimmer in earlier triple quad designs, dramatically improving sensitivity. QJet ion guide technology captures more ions that enter the instrument, more efficiently separates ions from neutrals, and focuses them into Q0.

Patented LINAC® collision cell
Ensures maximum ion transfer—free of cross-talk—in MS/MS mode, allowing simultaneous multi-compound analyses and enabling you to monitor more compounds and MRM (multiple reaction monitoring) transitions without any appreciable loss in signal. LINAC collision cell technology enables fast scanning without compromising performance in all modes of operation, including product ion, precursor ion, and neutral loss scans.

High throughput for the networked lab
Applied Biosystems/MDS SCIEX combines the world’s most sensitive mass spectrometer with the industry’s leading software for robust, high performance quantitation. Analyst® software delivers a new standard in compliance, throughput, and ease-of-use.

The best quantitation tools for rapid results—reduce your integration method development and data review time

Rapid acquisition method development—automated compound optimization and tuning routines

Intelligent integration—new, parameter-free algorithms reduce time spent revising and reviewing results

The most comprehensive suite of features available for 21 CFR Part 11 compliance—complete, role-based security, auditing, and electronic records

Centralized security management—power and flexibility in one easy-to-use console provides the finest security model for regulated labs

Powerful auditing features—complete, easily managed auditing tools give you project-based auditing on your terms, for all levels of compliance

Direct network acquisition—eliminate manual file management and enhance your data security by acquiring data directly over your network

Support for your workflow—from LIMS to processing tools, Analyst software has the flexibility to be integrated quickly into your environment

The IntelliQuan integration algorithm provides a new level of confidence in automatic integration. Produce high quality results without having to set integration parameters in advance. IntelliQuan minimizes manual intervention during integration and speeds up data review, reducing your data analysis time to improve your lab’s productivity.
Excellent linearity over a wide dynamic range is illustrated in this calibration curve of eight replicate injections at each concentration of buspirone. From the table, the statistics and accuracy demonstrate unparalleled consistency and reproducibility required for quantitation in regulated environments.

Over two days and 500 plasma sample injections, the API 5000™ system demonstrates excellent reproducibility and stability for the response of the compound and internal standard.

Ideal for small molecule analysis
The API 5000™ LC/MS/MS system gives you unequalled accuracy and precision for quantitative analysis. It also offers linearity over a wide dynamic range and exceptional sensitivity for routine quantitation of low abundance compounds in complex matrices—delivering greater signal-to-noise than the industry-standard API 4000™ system.

Expert results—even for non-experts
This is not only the most powerful triple quad available; it is also the easiest to use. From automated methods development to quick, simple routine maintenance, the API 5000 system is designed to make it easy for you to get the answers you need, even if you are just getting into mass spectrometry.

Unattended, high-throughput operation
The API 5000 system is engineered for continuous duty operation in high-throughput regulated laboratories. With a full complement of advanced automation features, it fits seamlessly into your workflow, and requires limited user intervention.

This chromatogram acquired at unit resolution of both Q1 and Q3 demonstrates outstanding S/N for 10 fg of buspirone injected on column. This data is taken from one of the eight replicate injections of the lowest concentration in the calibration curve shown in the figure at right. At this level, the %CV is an impressive 3.5.

Over two days and 500 plasma sample injections, the API 5000™ system demonstrates excellent reproducibility and stability for the response of the compound and internal standard.
Mass spectrometry is a critical and core enabling technology for the life sciences. From basic research to drug discovery and development, clinical research, forensic, food, and environmental analysis, mass spectrometry-based methods play a key role.

When you choose Applied Biosystems/MDS SCIEX as your partner, you’re choosing to work with the leading developer of LC/MS/MS technologies. We are committed to remaining at the forefront of life science research by providing you with the tools you need to succeed.

Support You Can Depend On—Whenever and Wherever You Need It
Our LC/MS/MS systems are backed by one of the world’s most extensive service and support organizations staffed by professionals who are trained and dedicated to keep your system running at peak performance and productivity 24 hours a day, seven days a week.

Maximize Instrument Uptime with Applied Biosystems BioMonitor® Service
With our BioMonitor Service, we can remotely and proactively track critical system parameters over the Internet and identify potential instrument problems before they affect your lab’s efficiency. Using a combination of remote monitoring, preemptive monitoring and remote diagnostics, our award-winning BioMonitor Service is helping many of our customers achieve a significant increase in instrument uptime.

What could your lab do with the world’s most sensitive LC/MS/MS system?
We’d like to help you consider the possibilities. For more information about the API 5000™ system, call the Applied Biosystems sales office nearest you, or visit http://www.appliedbiosystems.com/5000