



ACQUITY UPLC H-Class PLUS

PERFORMANCE THAT ADVANCES YOUR LAB

Waters
THE SCIENCE OF WHAT'S POSSIBLE.™

TRANSFORM STANDARD PROCEDURES INTO ULTIMATE PERFORMANCE

As an analytical laboratory, you solve problems and provide scientific information to other business units within your company. You require scientific tools that give you definitive results. You need to deploy analytical tools that support a diverse range of samples while fitting into your existing laboratory workflows. What you don't need is to compromise the quality of data or timeliness of the result.

The ACQUITY™ UPLC™ H-Class PLUS System is the next evolution of quaternary based UltraPerformance instrumentation, providing the highest resolution of any quaternary LC system. Whether your goal is to rapidly develop new methods or to routinely analyze large numbers of incoming samples, the ACQUITY UPLC H-Class PLUS System can help you decrease the time to result, while increasing the depth and quality of information received from your sample analysis.

SYSTEMS THAT MEET YOUR NEEDS FOR TODAY AND TOMORROW

- Improve laboratory productivity by transitioning methods to UPLC Technology
- Leverage advanced tools to simplify and streamline your method development workflow
- Improve the characterization of your most complex samples through enhanced resolution
- Increase the analytical value of your samples by leveraging optical and mass information
- Match the need of your laboratory through support of your existing HPLC, UHPLC, and UPLC methods

HIGHEST RESOLUTION OF ANY QUATERNARY LC SYSTEM

Low dispersion

True UPLC performance with band spread of less than 10 μ L for highest chromatographic resolution.

Versatile column management

Support for analytical LC column dimensions up to 300 mm with capacity to automatically select between as many as six analytical columns. Equipped with independently controlled temperature zones, active pre-heating, and eCord™ Intelligent Chip Technology for Waters™ columns.

Optional fraction collection

Temperature controlled and compatible with narrow UPLC peaks.

Gradient SmartStart

Easily adjust for system volume differences when transferring methods from an alternative LC system without alteration to the method table.

Quaternary solvent blending

Delivering precise and accurate separations at pressures up to 15,000 psi. An optional solvent select valve adds access to an additional six solvents. Automated solvent compressibility, integrated solvent degassing, and programmable seal wash maximize flow accuracy, precision, and reliability.



Wide range of detection capabilities

UPLC-optimized detectors to match your application needs, including photodiode array, UV/Vis, fluorescence, refractive index, evaporative light scattering, and mass detection.

Flexible sample support

Accepts either vials or ANSI well plate formats. Extend capacity for high throughput and open access environments with the optional Sample Organizer.

Flow-through-needle injector

Volume range of 0.1 to 1000 μ L and ultra-low carryover performance compatible with your most sensitive LC-MS applications.

Auto-Blend Plus™ Technology

Program gradients directly in terms of pH, molarity, or organic composition to minimize manual mobile phase preparation, reduce human error, and accelerate method robustness testing for chromatographic methods.

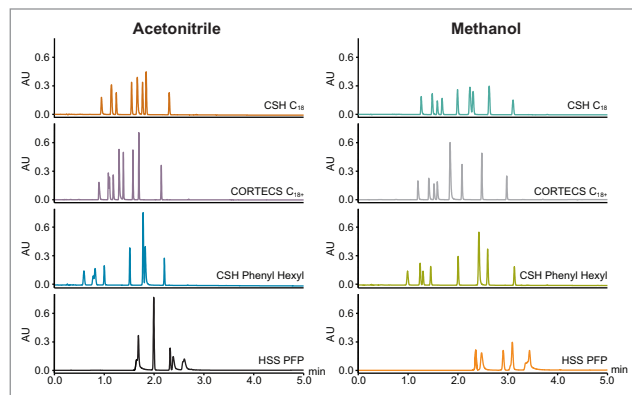
DISCOVERING THE BEST METHOD GETS YOU THE BEST RESULTS

In method development, whether you use a step-wise approach, systematic screening, or a Quality by Design (QbD) protocol, you encounter the same obstacles.

- What conditions should I investigate?
- How do I track my peaks as conditions change?
- How can I reduce the time it takes to develop a robust method?

The ACQUITY UPLC H-Class PLUS System simplifies and streamlines your method development workflow. With automated column selection from up to six, independently controlled column temperature zones, a number of selectivity choices can be easily, and quickly, screened. By incorporating the optional solvent select valve, mobile phase selectivity can be expanded from four to an additional six mobile phase lines to augment its standard quaternary solvent blending.

Combining these system capabilities with the Empower™ Sample Set Generator can help you to completely automate your method development experiment. And with the ACQUITY QDa™ Detector, method development can be significantly accelerated by utilizing mass information to track the movement of peaks when evaluating different method conditions.

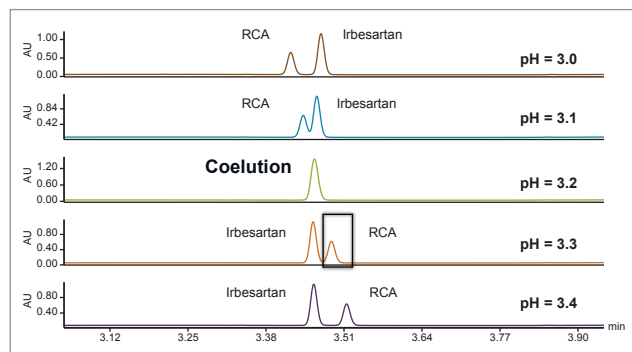


In developing a method for metoclopramide and its related components, the ACQUITY UPLC H-Class PLUS System was configured to automatically screen multiple column and eluent combinations to identify the separation conditions that provided the best chromatographic resolution.

ONLINE ELUENT BLENDING - ANY BUFFER, ANY SOLVENT, ANY pH

Auto•Blend Plus Technology automatically blends your mobile phase to a specified pH and ionic strength or organic modifier percentage, for any set of analytical conditions you need. By leveraging this novel technology, the ACQUITY UPLC H-Class PLUS System frees up analysts time to perform more value-added activities by reducing the number of mobile phase buffers that need to be manually prepared.

Whether you are running biomolecules and require pH gradients for charge variant analysis, or you are performing small molecule method robustness testing and want to test small variations in pH, Auto•Blend Plus Software allows you to program an infinite set of conditions for any analytical method type.

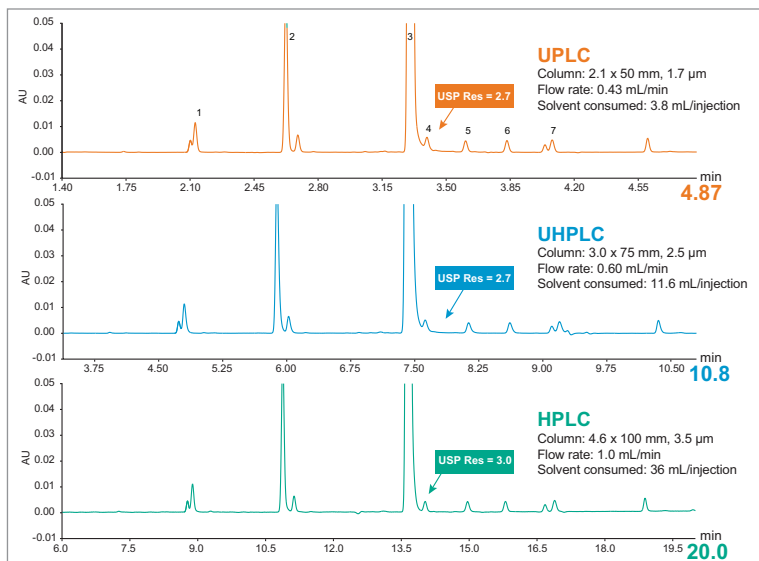


The USP assay for Irbesartan requires that the eluent be adjusted to pH 3.2, however this results in a co-elution of the API and its related compound. By making automated, online adjustments to the pH in 0.1 increments using Auto•Blend Plus, a more robust set of pH conditions can be found.

TAKE YOUR METHODS TO THE NEXT PERFORMANCE LEVEL

Leverage the benefits of UPLC Technology to improve your existing HPLC methods. By scaling your methods to UPLC, your laboratory will benefit from the combination of increased resolution, sensitivity, and speed that comes with modern small particle chemistries.

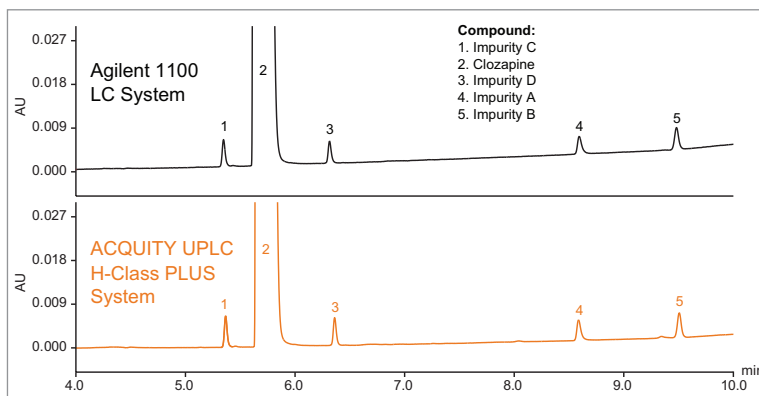
With novel method conversion tools such as the [Columns Calculator](#) and the [Column Coach](#), the process of upgrading your methods has never been easier.



The USP analysis of diclazuril and organic impurities was scaled from HPLC to UHPLC to UPLC. The UPLC method resulted in a 4x reduction in run time with a 10x reduction in solvent consumption resulting in improved sample throughput and reduced cost per analysis.

UPLC TOMORROW, BUT HPLC TODAY

Adopting a new analytical technology that improves laboratory efficiency is advantageous for supporting your new projects and products. But what about all of your existing HPLC analyses that support the products you have today? Designed to accommodate all of your LC method needs, the ACQUITY UPLC H-Class PLUS System is ideally suited to future-proof your laboratory, enabling the support of existing HPLC methods now, and provide significant productivity and cost benefit when utilized for UPLC methods.



For the USP assay of clozapine, the system suitability solution was run on both an Agilent 1100 LC System and the ACQUITY UPLC H-Class PLUS System. For this gradient method, equivalent chromatographic results were achieved on both systems.

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