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**Hitachi High-Technologies Launches New UHPLC System, ChromasterUltra Rs**

Providing high precision and reliability in ultra high-performance analysis  
through the world's highest 140 MPa system pressure tolerance

Hitachi High-Technologies Corporation (TOKYO: 8036, Hitachi High-Tech) today announced the global launch of ChromasterUltra Rs, a new Ultra High Performance Liquid Chromatography (UHPLC) system that achieves enhanced ultra high speed, high resolution and high sensitivity analysis.

UHPLC systems are analytical tools for performing highly accurate qualitative and quantitative measurements of the composition, concentration and other parameters of liquid soluble substances. UHPLC systems can dramatically shorten analysis time compared with conventional liquid chromatographs. These systems are extremely versatile in terms of the samples and substances they can measure, and serve as crucial analytical tools in a variety of analytical contexts such as R&D and quality assurance in the pharmaceutical, chemical and food & beverage industries. The estimated size of the global market for UHPLC systems in 2013 is more than ¥50 billion.

The pharmaceutical sector represents a particularly large share of the UHPLC systems market. In the drug development process, impurities that are generated in each process can have a significant bearing on the quality and safety of a drug. Among those impurities, even trace amounts of genotoxins can cause adverse health effects. This has prompted calls for further technological innovation in substance and structural analyses to reliably detect impurities, as seen in the tightening of regulations in Europe and other countries around the world. In addition, the broad range of physical properties presented by impurities has given rise to problems such as a decline in sensitivity when impurities are detected simultaneously and an extensive time required for analysis. As a result, the need for ultra high speed and high resolution analysis has increased even further.

Hitachi High-Tech developed the new UHPLC system ChromasterUltra Rs to achieve high resolution and high sensitivity in ultra high speed analysis. In particular, ChromasterUltra Rs was developed to solve the issues faced by R&D sites in the pharmaceutical sector and support their needs.

By realizing the world's highest system pressure tolerance of 140 megapascals (MPa), ChromasterUltra Rs allows ultra high-speed analysis as well as the use of mobile phases such as methanol that are susceptible to increases in analysis pressure. This enables many different analysis variations. ChromasterUltra Rs also achieves even higher resolution and analysis performance as a result of the development of a new fine particle column with enhanced separation performance and an extended column length, in combination with a high system pressure tolerance and a low dispersion system.

Hitachi High-Tech is launching ChromasterUltra Rs as its first new model since the previous model was rolled out 6 years ago. Following the launch of the Chromaster High Performance Liquid Chromatography (HPLC) system in 2011, Hitachi High-Tech has been working to enhance the Chromaster series by upgrading and expanding the product lineup.

Going forward, Hitachi High-Tech will conduct sales activities worldwide, while continuing to support the needs of a variety of analysis sites such as analysis centers in the pharmaceutical, chemical, food & beverage and other industries, with the aim of selling these systems in growing markets.

Furthermore, Hitachi High-Tech plans to exhibit an actual model of this system at the JASIS 2013 exhibition to be held from September 4 to 6, 2013. (Venue: Makuhari Messe International Convention Complex, Chiba Prefecture).



## ChromasterUltra Rs

### Main Features

#### -Ultra High Speed Analysis

The system supports high-speed analysis with the world's highest system pressure tolerance of 140 MPa, while improving analysis variations by expanding the range of options for using mobile phases susceptible to increases in analysis pressure.

#### -High Resolution Analysis

The system achieves high resolution analysis with 50,000 theoretical plates. This is achieved through the combination of the newly developed Hitachi LaChromUltra II ODS C18 Column (particle diameter: 1.9 $\mu$ m, length: 250 mm), the world's highest system pressure tolerance of 140 MPa, and a rigorous low dispersion system.

#### -High Sensitivity Analysis

The diode array detector standardly comes with a total reflection type capillary flow cell (optical path length of 10 mm).

Through the adoption of a total reflection capillary structure and new optical technologies, the system enables both high resolution and high sensitivity, by simultaneously enhancing low noise, low cell volume and high sensitivity performance. By combining this with a high sensitivity total reflection type capillary flow cell (optical path length of 65 mm; optional), superior sensitivity can be obtained. (Roughly 10 times higher sensitivity than Hitachi High-Tech's conventional LaChromUltra model (under the Company's specified conditions)).

### Sales volume target

300 units a year

### Product website

<http://www.hitachi-hitec.com/global/science/lc/chromasterultra.html>

### JASIS 2013 website

<http://www.jasis.jp/2013/en/>

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