

Ultra-High Pressure Liquid Chromatograph

chrozen UHPLC



The most important thing is to save your precious things,
Time & Cost

All of your effort to analyze the target compounds is all about how fast and reliably you analyze them within a given time and a budget. This is what we call 'Productivity' and 'Efficiency'. ChroZen UHPLC perfectly satisfies these two points by producing the results 4~10 times faster than conventional HPLCs while ensuring both superior sensitivity and resolution. In addition, the system endures real ultra-high pressure, up to 18,800 psi (1,300 bar), with the powerful pump providing the accurate and precise flow rate by applying the concept of linear drive technology for two pairs of serially coupled pump heads, which means you can fully utilize the UHPLC columns and have the reliable data.

YOUNG IN Chromass has produced reliable and superior chromatographs over more than 30 years to this date by dedicating our research and development to chromatographic technologies in Korea. And now we're proud to introduce the real UHPLC with confidence,
chroZen^{*} UHPLC.

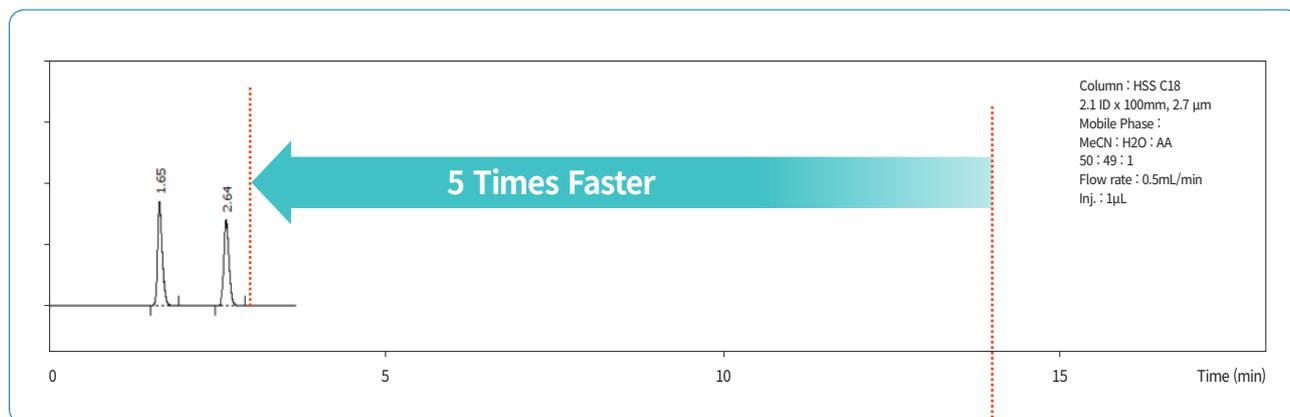
^{*} ChroZen: Trademark of YOUNG IN Chromass



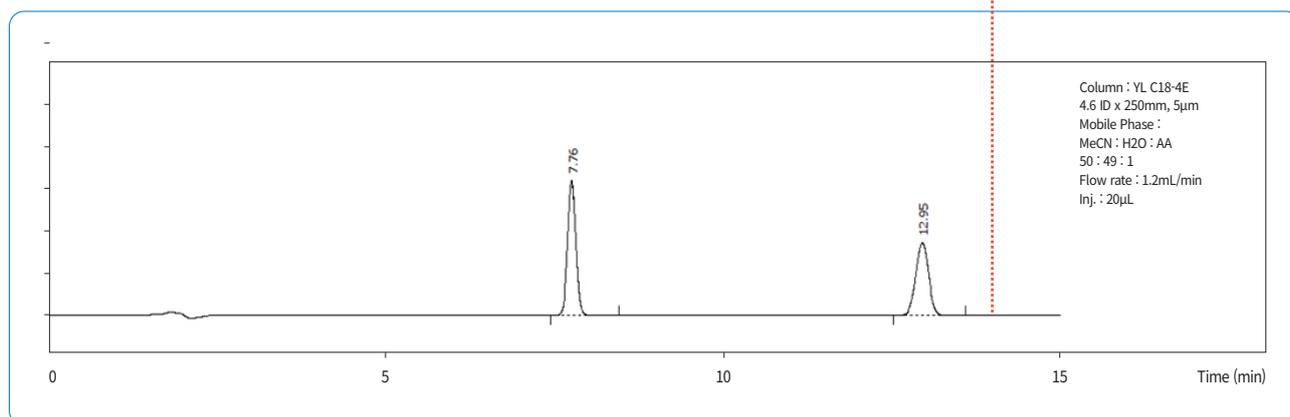
Beyond the Productivity & Efficiency

Higher Productivity

It's required to increase productivity for higher throughput in the industry. If you can have your data 4 to 10 times faster than typical runtimes on average, there would be no reason to hesitate to step forward for the advanced technology. ChroZen UHPLC coupled with the small particle size (sub $2\mu\text{m}$) and short length of column leads very shorter analysis time than the conventional HPLC's and this enables maximizing the overall throughput.



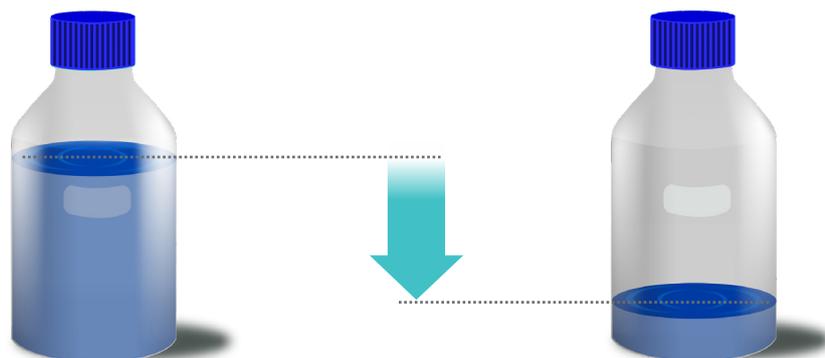
<Analysis of Naproxen & Butyrophenone by **ChroZen UHPLC**>



<Analysis of Naproxen & Butyrophenone by **Conventional HPLC**>

Greater Efficiency

Also, operating UHPLC system at a very low flow rate and injection volume minimizes the consumption of solvents and samples, which runs the analysis at less cost than the conventional HPLC.

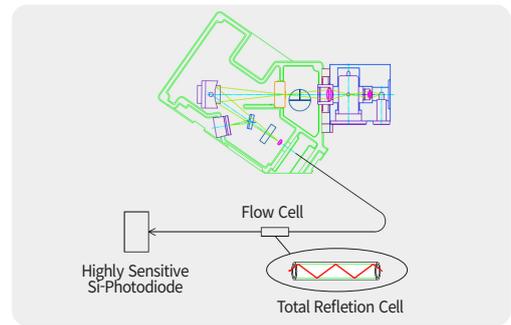


<Solvent Consumption of **Conventional HPLC**>

<Solvent Consumption of **ChroZen UHPLC**>

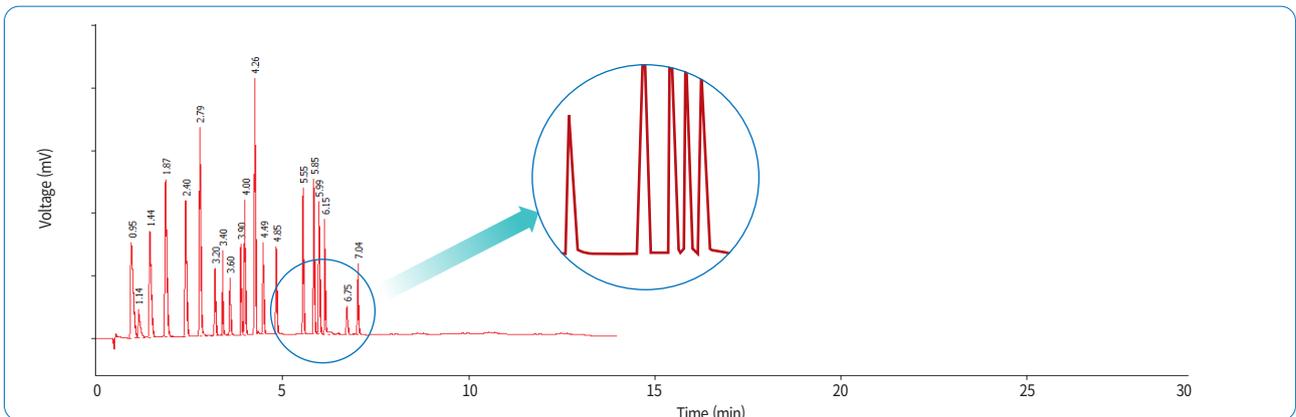
Remarkable Resolution & Sensitivity

The primary concept of UHPLC for the enhanced resolution is to allow the use of UHPLC columns packed with small particle size (sub- $2\mu\text{m}$). Along with this point, ChroZen UHPLC mechanically minimizes the system dispersion with adoption of a low internal volume of total reflection cell applying the liquid core waveguide technology which reduces the loss of light source to maintain the intensity in optical clarity. Also, the very fast data acquisition rate, 125 Hz, enables the rapid data processing for an enhanced effect on peak heights and width. Thus, it enriches the higher resolution and sensitivity.

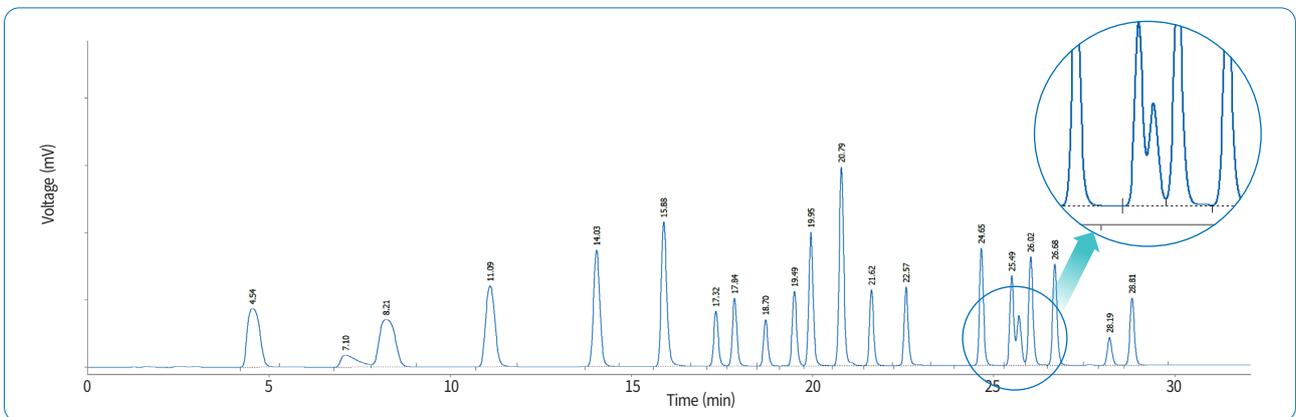


<Total Reflection Cell with the Liquid Core Waveguide Technology>

Enhanced Resolution



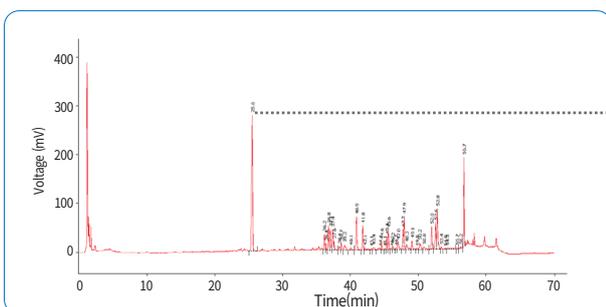
<Analysis of Residual Pesticides by ChroZen UHPLC>



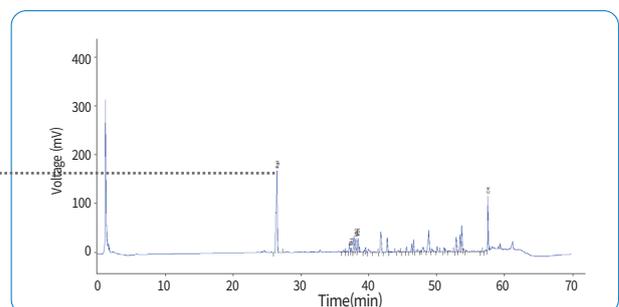
<Analysis of Residual Pesticides by Conventional HPLC>

Improved Sensitivity

Remarkably reduced system dead volume generates improved sensitivity than the conventional HPLC. The below data comparisons were performed in the same analysis condition, which means there's only difference in system, but still shows the sensitivity difference.



<Analysis of Saponine by ChroZen UHPLC (same amount)>

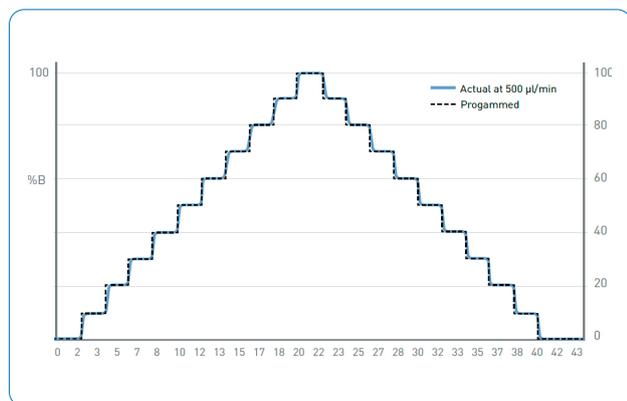


<Analysis of Saponine by Conventional HPLC (same amount)>

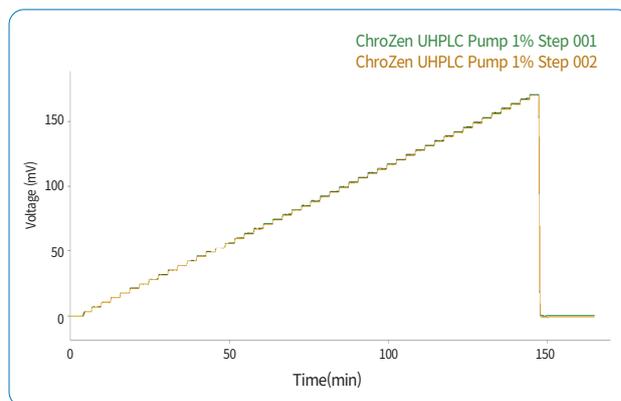
More than Reliability

Stable Gradient

The robust ChroZen UHPLC pump coupled with two pairs of serially operated pump heads individually controls four pump heads to achieve the reliable performance such as stable, precise and accurate flow rate by **truly automatic compressibility compensation**. This results in the rapid gradient response which enables the accurate control of step gradients for ultra-fast separations.

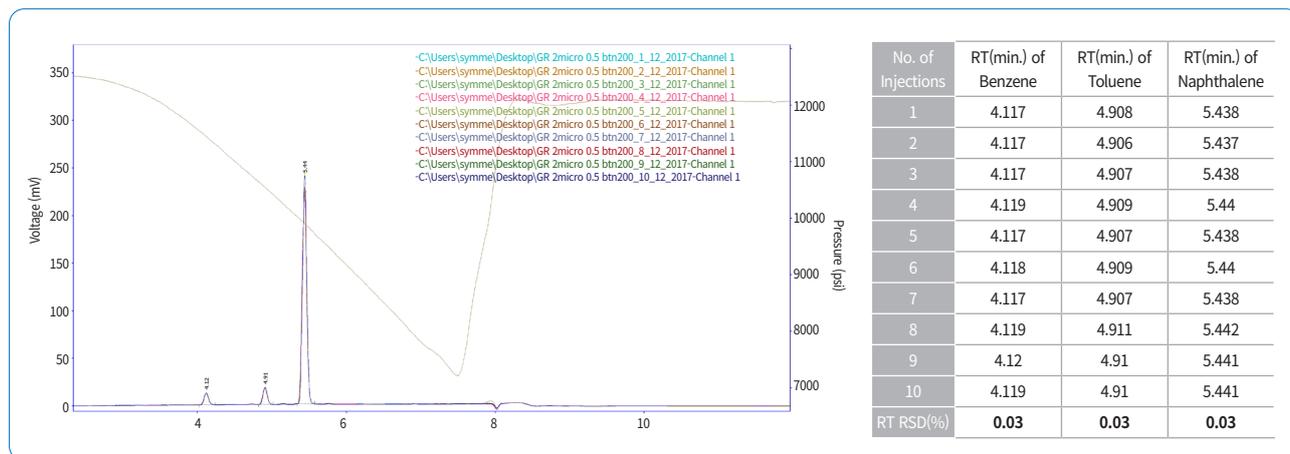


<Ultra fast gradient response for precision of solvent composition>



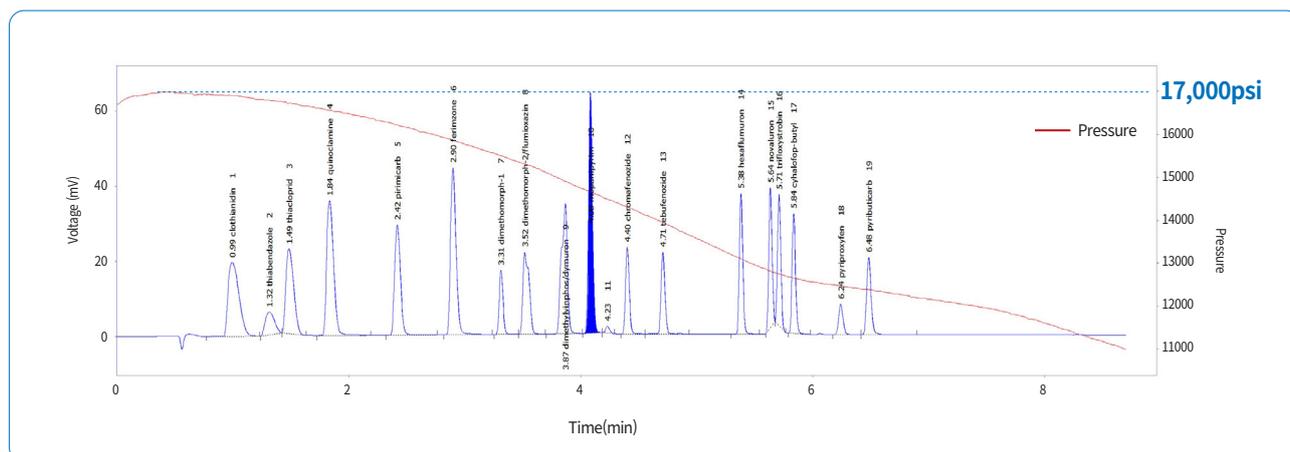
<1% Step Gradient Resolution (1~52%)>

The precise flow rate provides lower than 0.05 % RSD at even the gradient mode.



High Pressure Endurability

The longer you use UHPLC columns, the higher backpressure the system has to endure. ChroZen UHPLC endures real ultrahigh pressure, up to 18,800 psi, that utilizes the life time of UHPLC columns as long as possible.



Specifications

ChroZen UHPLC Pump

- Hydraulic system: Dual pistons in series pump with proprietary individual servo-controlled linear drive technology, featuring truly automatic compressibility compensation
- Flow range: 0.001 ~ 2.000 mL/min (Max. 5 mL/min), 0.001 increment
- Flow rate precision: $\leq 0.075\%$ RSD or 0.005 min SD, whichever is greater
- Maximum operating pressure: 18,850 psi (1300 bar)
- Solvent selection: 2 solvents per pump module (A/B)

ChroZen UHPLC Column Oven

- Temperature range: 4°C (Cooling) ~ 90°C
- Temperature stability: $\pm 0.05^\circ\text{C}$
- Column capacity: 3 columns up to 150 mm length

ChroZen UHPLC Autosampler

- Sample capacity: 96 vials (2ml)-Standard
- Sample cooling/heating (Standard) : $4^\circ\text{C} \pm 2^\circ\text{C} \sim 40^\circ\text{C}$
- Carry over: 0.05%
- Precision reproducibility: RSD < 0.5% for partial loopfill injections, injection volumes > 5 μL at constant pressure
- Pressure range: 0 ~ 18,000 psi (0 ~ 1240 bar)

ChroZen UHPLC UV/VIS Detector

- Wavelength Range: 190 ~ 900 nm (Dual Wavelength Detection)
- Wavelength Accuracy: ± 1 nm
- Wavelength Precision: ± 0.1 nm
- Linearity: > 2.0 AU upper limit
- Noise level : $< \pm 0.5 \times 10^{-5}$ AU, at 254 nm (single wavelength detection)
- Drift : $< 4 \times 10^{-4}$ AU/hour

ChroZen UHPLC PDA Detector

- No. of PDA Channel: 1024
- Wavelength: 190 ~ 950
- Noise Level: $< \pm 0.7 \times 10^{-5}$ AU (Empty Cell, 2 sec Response Time, 254 nm)
- Drift: 4×10^{-4} AU/hr (Baseline Correction)
- Wavelength Accuracy: < 1 nm

ChroZen UHPLC Fluorescence Detector

- Light source: 150 W Xe lamp (8.5A)
Hg lamp (for wavelength check)
- Excitation wavelength setting range: 200 to 850 nm, zero order
- Emission wavelength setting range: 250 to 900 nm, zero order
- Wavelength accuracy: ± 3 nm
- Wavelength reproducibility: ± 0.5 nm
- Sensitivity:
 - Water Raman S/N ratio: 900 or over (Em spectrum bandwidth: 15 nm)
 - Water Raman S/N ratio: 1200 or over (Em spectrum bandwidth: 30 nm)

ChroZen UHPLC Refractive Index Detector

- Linearity: 600 μRIU
- Noise: 5×10^{-9} RIU or less (Response : 1.5 seconds)
- Drift: 2×10^{-7} or less (Pure water 1mL/min, Purge OFF)
- Temperature Control: OFF, 30 ~ 55°C (Double Temperature Control)



60, Anyangcheondong-ro, Dongan-gu, Anyang-si,
Gyeonggi-do, 14042, Korea
TEL: 82-31-428-8700 / FAX: 82-31-428-8787
E-mail: export@youngincm.com
Homepage: www.youngincm.com



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