

HPLC AUTOSAMPLER



The HPLC autosampler features a patented integrated constant pressure needle and a precise syringe pump, guaranteeing exact injection volumes and superb linearity for highly accurate results. With a meticulously treated sampling needle—high-polish on the outer surface and passivation on the inner surface—it minimizes sample residue. Additionally, thorough washing of both surfaces substantially diminishes carryover.

APPLICATIONS

- **Pharmaceutical Analysis:** Automated sample injection for drug discovery, quality control, and bioequivalence studies.
- **Food & Beverage Testing:** Detects additives, contaminants, and nutritional components with high precision.
- **Environmental Monitoring:** Analyzes pollutants, pesticides, and organic residues in soil and water samples.
- **Clinical & Biomedical Research:** Supports biomarker identification, metabolomics, and clinical diagnostics.
- **Chemical & Petrochemical Industry:** Used for purity testing, polymer analysis, and chemical composition studies.
- **Biotechnology Applications:** Enables protein, peptide, and nucleic acid separation for advanced research.
- **Forensic Science:** Provides accurate quantification of drugs, toxins, and trace evidence in forensic samples.
- **High-Throughput Screening:** Ideal for labs requiring rapid, reproducible injections across 96 & 384 well plates.

FEATURES

PRECISION

Precise Injection Volume

The TT-HPLC autosampler features a patented integrated constant pressure needle and a precise syringe pump. This setup ensures precise injection volumes and exceptional linearity, resulting in more precise and accurate outcomes.

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Low carryover to make results more accurate

The sampling needle undergoes a high-polish treatment on the outer surface and passivation on the inner surface, effectively minimizing sample residue. Performing needle washing for both the outer and inner surfaces significantly reduces carryover.

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Sample	Peak area	Carryover
Caffeine 3000ppm	Overload	(0.559/3286.287 x 20) x 100% = 0.00085%
Blank sample after needle washing	0.559	
Caffeine 150ppm	3286.287	

RELIABILITY

Design of needle

Our integrated constant pressure sampling needle ensures balanced air pressure inside and outside the sample bottle during sampling. Additionally, the injection port is positioned on the sidewall to prevent bottle pad debris from obstructing the needle during puncturing.

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Design of degassing unit of washing liquid

The built-in autosampler degassing unit effectively removes air bubbles from the washing liquid, preventing interference caused by them.

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Design of mechanical arm

The ball monorail design of the mechanical arm prevents it from locking while in motion, ensuring smooth operation. When combined with motor closed-loop control and an out-of-step protection algorithm, it enhances stability during operation.

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Design of self-compensation injection pump

We utilize a maintenance-free self-lubricating guide device and self-compensating sliding screw to provide real-time compensation for minor wear. This setup ensures excellent motion accuracy and greater durability.

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Ease of use

In the preloaded sample injection mode, the injection time can be reduced to 5 seconds, significantly enhancing efficiency.

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Multiple injection modes, coupled with sample temperature control technology, cater to various detection requirements, especially for rare or unstable samples. An optional dehumidification function prevents condensed water formation, avoiding sample dilution and ensuring precise results. The in-front injection valve also streamlines maintenance for convenience and efficiency.

TECHNICAL SPECIFICATIONS

Sample capacity	108, 2mL(96&384 well plates)
Injection range	0-100μL
Injection mode	Low-loss, microliter carrying, full-loop
Injection time	Minimum to 5s
Carryover	0.003%
Degassing unit	Online degassing(optional)
Temperature control	4-40°C(optional)



Torontech Inc.

251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada 

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC

601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA 

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE

Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE 

Phone: +971 488 19252
Email: me@torontech.com

