



## Elute LC series

- UHPLC Precision for MS applications

# Delivering Precision and Speed for Mass Spectrometry



*Designed for reproducibility in retention time and peak shape, Elute LC systems are available in a variety of configurations, from entry level HPLC systems to high-throughput, high-performance UHPLC systems with fully automated on-line extraction (OLE) capability.*

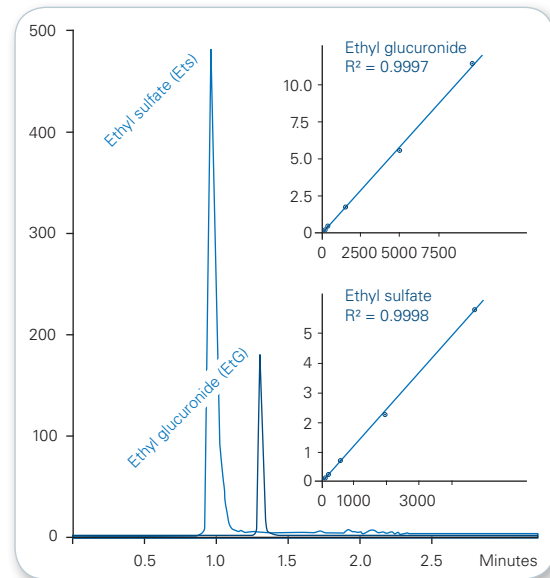
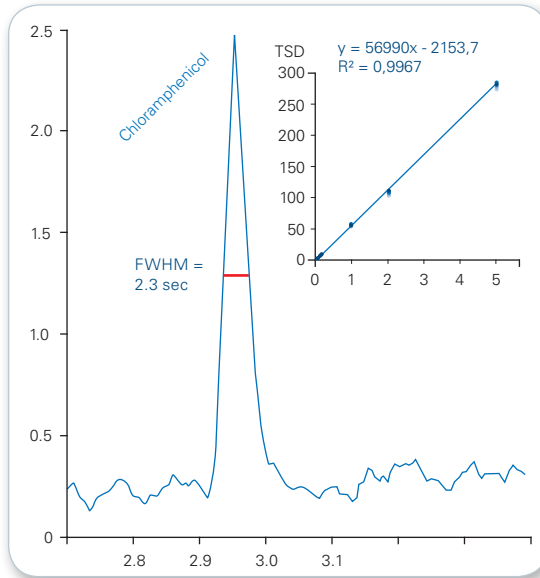
## Designed For Demanding MS Application

The different Elute systems are optimized to match the analytical requirements of your applications:

- The **Elute SP HPLC** offers standard 700 bar performance for any kind of routine lab applications at a market-leading price/performance ratio.
- Ideal for ultrafast separations in small molecule quantitation, the **Elute UHPLC** system delivers high-end, 1300 bar performance.
- The powerful **Elute OLE UHPLC** system adds on-line extraction to ultrafast separation.
- The **Elute HT system** combines ultrahigh analytical performance with any kind of sophisticated front-end preparation prior to UHPLC-MS analysis, based on the PAL 3 platform.



# Reproducible LC-MS Quantitation



The Elute UHPLC system provides great sensitivity in LC-MS applications on EVOQ LC-TQ, combined with an ultra-sharp peak width (FWHM) of ~ 2 seconds. Shown above is the sensitive Chloramphenicol detection (LLOQ 0.02 ppb) well below the Minimum Required Performance Level (MRPL) of 0.3 ppb even in difficult matrix such as eggs (EU decision 2003/181/EC).

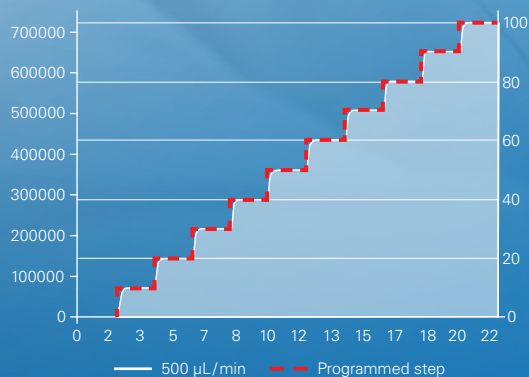
Enabling fast and reliable LC-MS methods developed on the Elute UHPLC coupled to the EVOQ LC-TQ for forensic applications: quantitation of the urine alcohol metabolite markers EtS and EtG in urine by a 3 min UHPLC method.



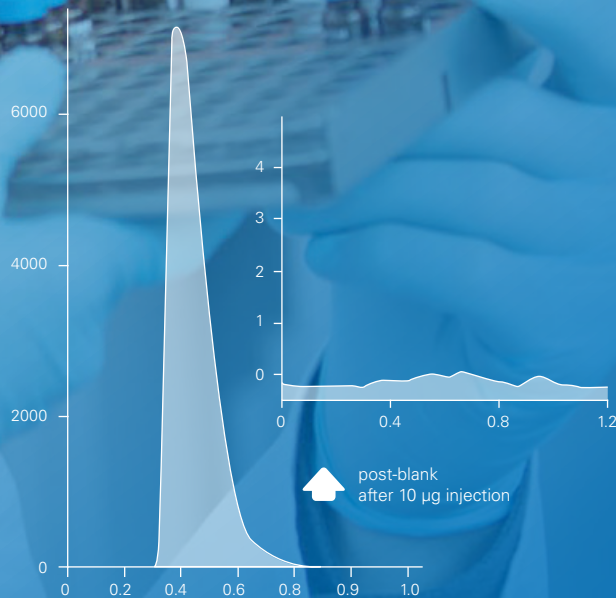
# Confidence Proven by Reliability

Bruker Elute LC systems are built around two pairs of serially-coupled, individually-controlled, linear drive pump heads. These are to provide virtually pulse-free, precise, volumetric flow control independent of flow rate, solvent composition, and compressibility. Whether you need to transfer your UHPLC method to a lab across the hall or across the country, the robust, reliable results of Elute LC systems ensure quick and easy method transfer.

The flow path of Elute LC systems has been optimized to minimize gradient delay volume. The result is high chromatographic resolution, fast gradients, and short cycle times that maximize sample throughput and reduce costs.



# High Uptime – Low Maintenance



Example of near zero carry-over:  
Chlorhexidine 10 µg on column,  
Post-blank = 0.15 ng = 0.0015%

Pumps in the Elute LC systems incorporate true self-priming and self-purging. Once the built-in priming pump aspirates solvent through the pump heads, true prime and purge takes just a few minutes via an electrically actuated purge valve. There is no manual user intervention needed like aspiration with an external syringe pump. To ensure maximum uptime and reduce maintenance costs, Bruker Elute LC system pumps feature an active piston backwash system that flushes the piston rods to extend the life of the piston seals.



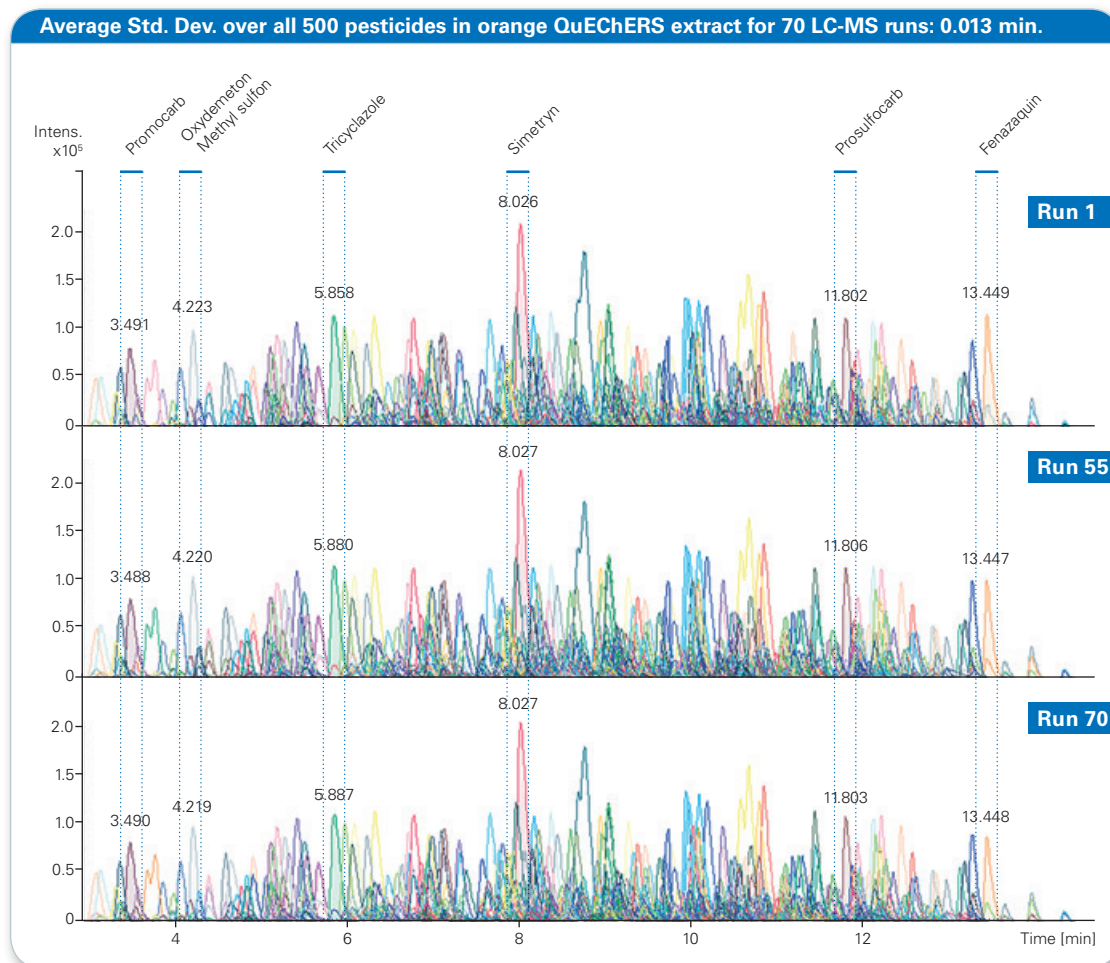
# Retention Time Stability

Due to its innovative pump design, the Elute UHPLC easily stays below retention time deviations < 0.05 minutes, meeting EU SANTE 11945 I 2015 guidelines.



**Javier López Flores, Coordinator of Application Development Lab, Bruker Daltonics, Madrid, Spain**

*The EU SANTE 11945/2015 for pesticide analysis demands a limit of the retention time deviation of < 0.1 min in a batch analysis. The automated Purge & Priming of the Elute enables easy and fast mobile phase exchanges resulting in saving time during daily routine work. Even after column exchanges and specifically working with methods covering very high number of compounds, such as for pesticide screening, we have achieved extremely stable retention times."*



Multi-target screening of > 500 target pesticides in orange QuEChERS extract separated on an Intensity Solo C18 RP column by the Elute UHPLC coupled to an impact II QTOF instrument.

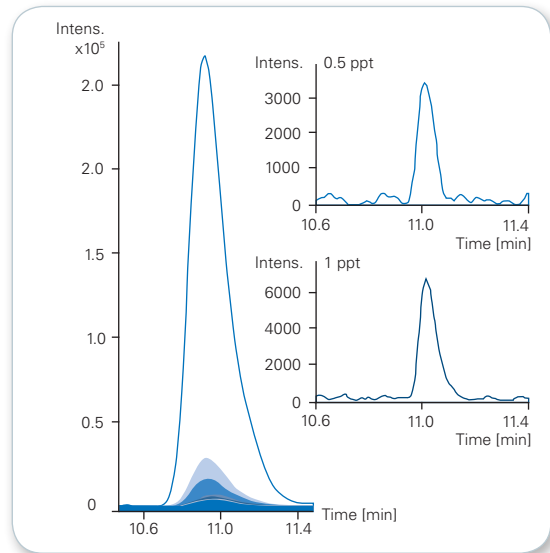
# On-Line Extraction (OLE):

## Flexibility to Maximize Sensitivity and Minimize Time of Analysis

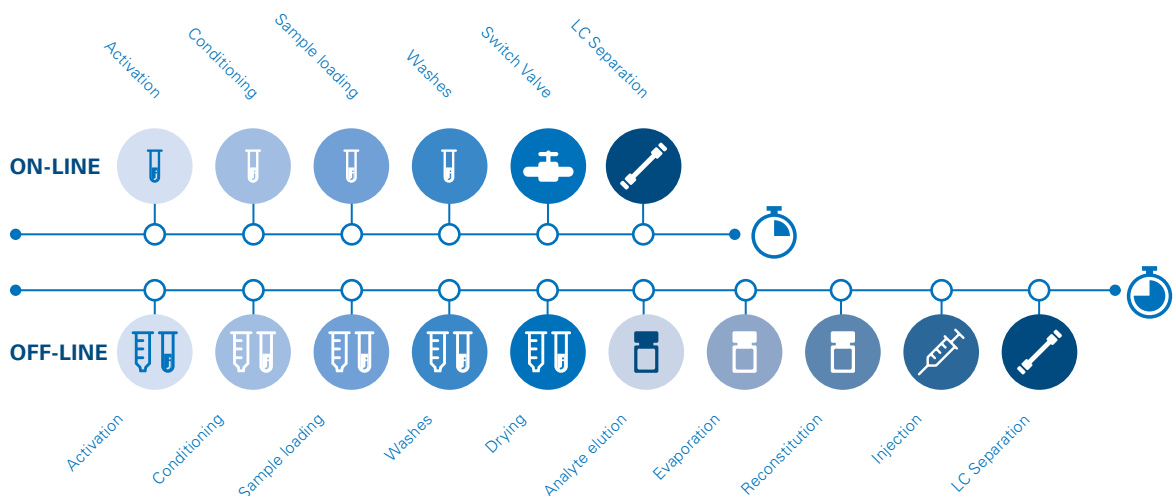
The pre-concentration capability of the Elute OLE makes it the ideal tool for the enrichment of low abundant compounds in water or in complex mixtures like clinical research samples. On-line extraction performed in combination with UHPLC separations improves the quality and consistency of results – by delivering sharper peaks and reducing the chance of operator error inherent in manual methods.

### Benefits of Elute on-line extraction compared to off-line processing

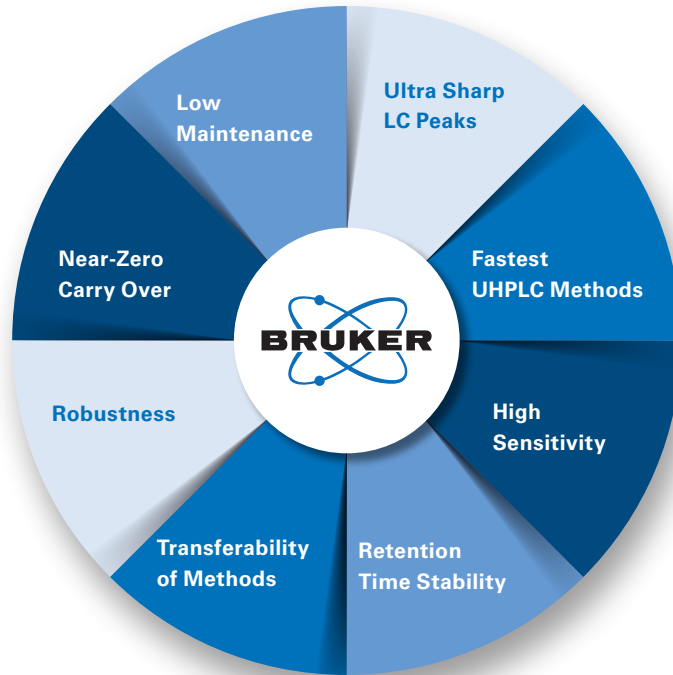
- Direct sample loading by autosampler compared to manual off-line extractions
- 100% of sample is loaded on column compared to sample losses during off-line processing
- Elute OLE is a closed System in contrast to external off-line devices
- OLE can use smaller particle size leading to sharper peaks compared to off-line methods



Pesticides in water (600  $\mu$ l vol.),  
Triazophos 0.5 - 1000 ppt. extracted and separated by  
an Elute OLE system coupled to an impact II QTOF.



# LC Precision for MS Applications



**Prof. Dr. Pim Leonards, Vrije Universiteit Amsterdam – Faculty of Earth and Life Sciences, Department of Environment and Health**

*The Elute OLE coupled to the EVOQ Elite LC-TQ demonstrates high sensitivity for environmentally relevant chemicals such as perfluorinated compounds and flame retardants. Using the OLE to further preconcentrate our samples, we achieve quantitative analysis at ppt-level using small sample volumes, which is of great importance for human biomonitoring studies and environmental analysis."*

For research use only. Not for use in diagnostic procedures.

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