

# FREESTYLE™

The Step Towards Complete Automation  
in Sample Preparation

## HPLC Direct Injection Module

The HPLC Direct Injection module is part of the automated sample preparation system FREESTYLE. It enables the complete automation from raw extract to chromatogram without any manual working step and with excellent results at the same time.

Samples can reliably be processed during the night or even at the weekend and the finished chromatograms are available the very next morning.

### Applications:

- Every SPE application being measured directly from the elution container of the SPE or after concentration or a solvent exchange in the EVApuration module.
- Samples which are measured by HPLC and where the solvent gets concentrated in the EVApuration module.
- Samples that are measured by HPLC and where a solvent exchange in the EVApuration module is necessary due to solvent incompatibility of the HPLC like for example GPC-samples.

The module consists of ten positions for standards cooled by a Peltier element. Optionally 1 mL or 4 mL vials may be used. The size of the sample loop is variable; a 20 µL sample loop made of steel is included in delivery as a standard.



*Cooled positions for standards*



*Automated sample preparation system  
FREESTYLE with SPE module, EVApuration  
module and HPLC Direct Injection module*

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The sample preparation is done via the SPE (Solid Phase Extraction) module, via SPE module with online EVaporation or after a solvent exchange and the EVaporation via the GPC (Gel Permeation Chromatography) module. Afterwards the finished samples are injected into the HPLC by sample loop overfilling. The injection volume can be parametrised.

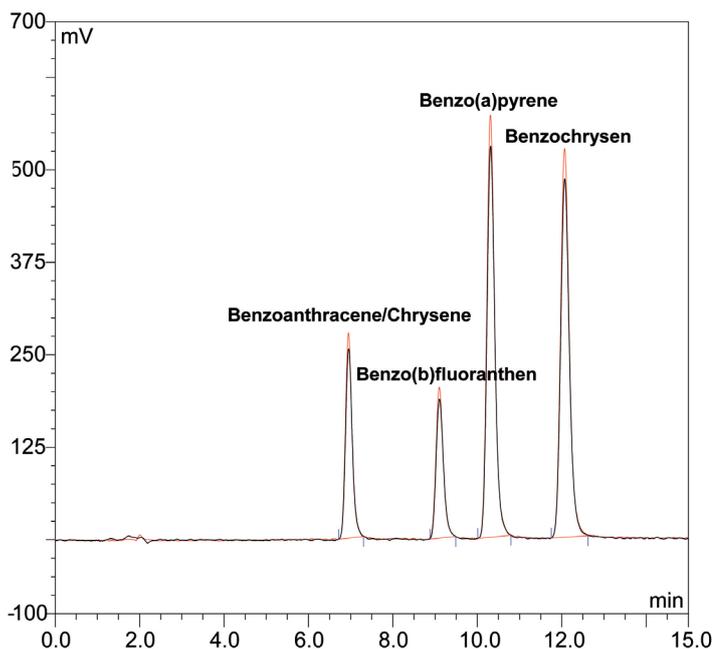
**Advantages:**

- Complete automation of an analytical routine process
- Handling of the sample and the standard without manual intermediate step
- Compatible with any HPLC instrument
- The FREESTYLE system takes over the function of an autosampler - no additional HPLC autosampler required.
- Filling of further aliquots of the sample into vials is possible.

**Results**

The subsequent recovery rates of the determination of PAH via FREESTYLE GPC and HPLC Direct Injection module and the corresponding chromatogram show the excellent results that are achieved using a complete automation with the robotic system FREESTYLE and the HPLC Direct Injection module.

Description	Recovery rates
Benzoanthracene/Chrysene	94 ± 2 %
Benzo(b)fluoranthene	93 ± 3 %
Benzo(a)pyrene	93 ± 2 %
Benzochrysen	94 ± 2 %



Overlay of two fluorescence chromatograms:  
external PAH standard (red) and a finished sample (black)



FREESTYLE  
HPLC Direct Injection module

Would you like to know more about our automated sample preparation system FREESTYLE and its modules?

Just write an e-mail to [info@LCTech.de](mailto:info@LCTech.de) or have a look on our website [www.LCTech.de](http://www.LCTech.de).

