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Robotic System for Automated Sample Preparation: FREESTYLE

FREESTYLE SPE

Dual-SPE

# Automated Dual-SPE



## Two Solid Phase Extractions processed automatically within one method

The FREESTYLE system allows automated processing of two Solid Phase Extractions one after another without manual steps, around the clock, with excellent results, and without cross-contamination.

Since 1989 all living and slaughtered food-producing animals and their primary products have to be monitored for residues of health-risky substances throughout the EU, such as urine samples of animals for steroids, whose use as growth promoter is not permitted. The EU regulation defines upper thresholds which in turn mean that the analytical methods have to be able to detect and measure below these thresholds

which in this case are below 1 µg/l urine. Obviously this means that synthetic steroids have to be detected in a very low concentration in urine.

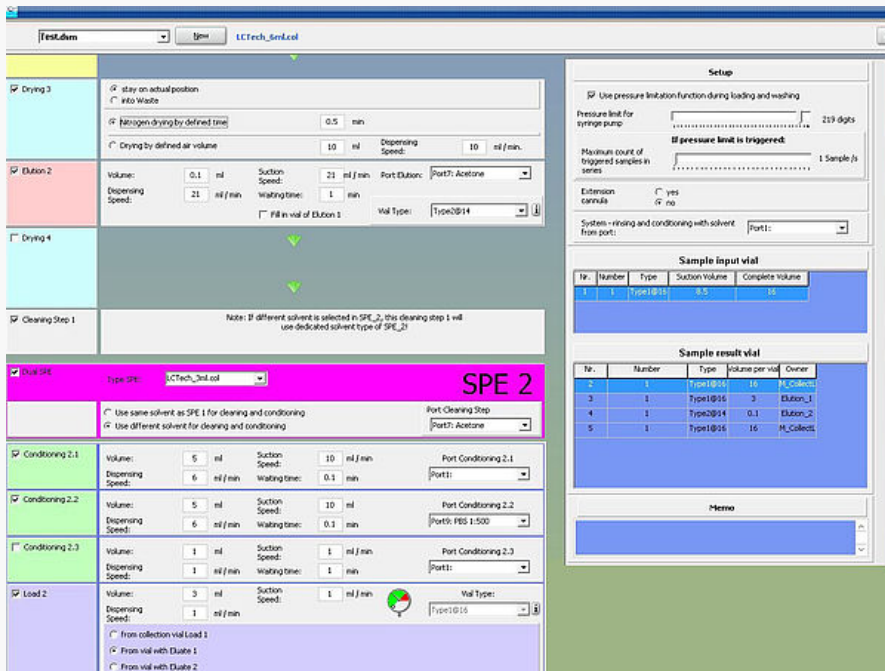
The manual sample preparation is very time consuming due to the two Solid Phase Extractions that have to be handled one after another. Each sample has to be monitored constantly due to the different viscosity of the samples to avoid the blocking or running dry of columns.



*FREESTYLE BASIC equipped with SPE module*

### **Faster processing, higher sample throughput**

With FREESTYLE SPE two Solid Phase Extractions with different column formats can be operated one after another within the same single method. A special software modification makes the set-up of this method possible by simply clicking the required parameters. The method is stored and can easily be selected when needed thus every employee can use it in daily routine.



Method Set-up for "Dual-SPE"; two Solid Phase Extractions one after the other



Plungers specially developed to reduce the dead volume of the SPE-columns to a minimum can lead to higher flow rates and thus reduce the process time per sample while increasing the sample throughput.

The combination of the plungers with the positive system pressure of up to 4 bar enables the FREESTYLE system to push almost every sample through the column even difficult matrices as i.e. urine due to its different consistence. However, in case a column gets blocked, the pressure monitoring of the systems stops the processing of this sample, marks it in the software and begins with the handling of the next sample in row. This allows an operation around the clock, even at the weekend.



## Excellent results

The automation of the Dual-SPE is already used in daily routine with convincing results:

- The sensitivity is as good as achieved with manual processing
- Improved consistency of measurement signals due to constant loading pressure onto the columns

- Significant reduction of standard deviation
- No cross-contamination

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## Brochures

[General FREESTYLE brochure \(pdf | 3 MB \)](#)  
[FREESTYLE SPE forensics & toxicology brochure \( pdf | 924 KB \)](#)

## Video

[FREESTYLE SPE - Automated solid phase extraction \(SPE\)](#)

## Application notes

[Automated determination of steroids in urine of food-producing animals \( pdf | 669 KB \)](#)

## Press release

[New sample loading for the automated sample preparation: Bidirectional SPE \( pdf | 226 KB \)](#)

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