Supelco®
Analytical Products

MERCK

Supel™ Swift HLB SPE cartridges - Solid Phase Extraction Made Easier

Enhance your sampling technique for accurate and precise LC-MS analysis

Supel™ Swift HLB SPE is a polymeric stationary phase for solid phase extraction prior to instrumental analysis. It has both hydrophilic and lipophilic functional groups for the extraction of a broad range of compounds from aqueous samples. It retains analytes having different polarities and Log P values due to its hydrophilic and lipophilic balance (HLB) property. Benefits of *Supel™ Swift HLB* SPE cartridges include:

- Suitable to the generic methodology
- Wide applicability
- Ideal for LC-MS and other workflows

The possibility of 3-step SPE

Supel™ Swift HLB SPE cartridges can reduce the number of steps in the solid phase extraction of your analyte from 5 to 3. You can directly load your sample onto the *Supel™ Swift HLB SPE cartridge* bed and potentially eliminate the need for cumbersome pre-conditioning steps. This feature of the Supel™ Swift HLB SPE cartridges reduces the number of errors in sample processing and simplifies sample preparation.

5-Step Method (Standard)		3-Step Method (Simplified)
Prime with 300 µL MeOH	❶ Condition	
Condition with 300 µL H_2O	❷ Equilibrate	
Load 200 µL Diluted Serum	❸ Load	Load 200 µL Diluted Serum
Wash with 200 µL 5% MeOH in H_2O	❹ Wash	Wash with 200 µL 5% MeOH in H_2O
Elute with 300 µL 50/50 ACN/MeOH, 2x	❺ Elute	Elute with 300 µL 50/50 ACN/MeOH, 2x

Figure 1. General processing of samples (serum 1:1 diluted) with *Supel™ Swift HLB cartridges* (30 mg/1 mL) using a 5-step method and a 3-step method

Superior flow rates

Flow rates are critical to SPE success during the load and elute step of SPE. *Supel™ Swift HLB SPE cartridge* has an optimized sorbent design to provide fast and efficient flow rates. It shows 20% faster flow rates than another broadly marketed fast-flow HLB cartridge in the SPE of diluted plasma **(Table 1)**.

Table 1. Flow/processing time comparison vs another commercially available fast-flow HLB sorbent (n=3 cartridges) at same vacuum conditions

	Supel™ Swift HLB SPE cartridge	Commercially Available Fast-Flow HLB product	Difference
Processing time (seconds)	36	45	-20%
RSD	2.6	3.2	
RSD%	7.2%	7.1%	

Excellent recovery for a wide range of compounds having different polarities and Log P values

Supel™ Swift HLB SPE cartridges offers good recovery for a wide range of compounds and polarities. **Figure 2** presents absolute recoveries of compounds ranging in log P from -0.9 to 4.8 using *Supel™ Swift HLB SPE cartridges* with both the 3-Step and 5-Step methods from plasma.

All-in-all, the 5-Step method shows better recoveries as compared to the 3-Step process. In the 5-Step process, all twenty analytes had recoveries between 80% and 120%. However, eighty percent of the analytes still showed recoveries in the 80% to 120% range by the 3-Step process.

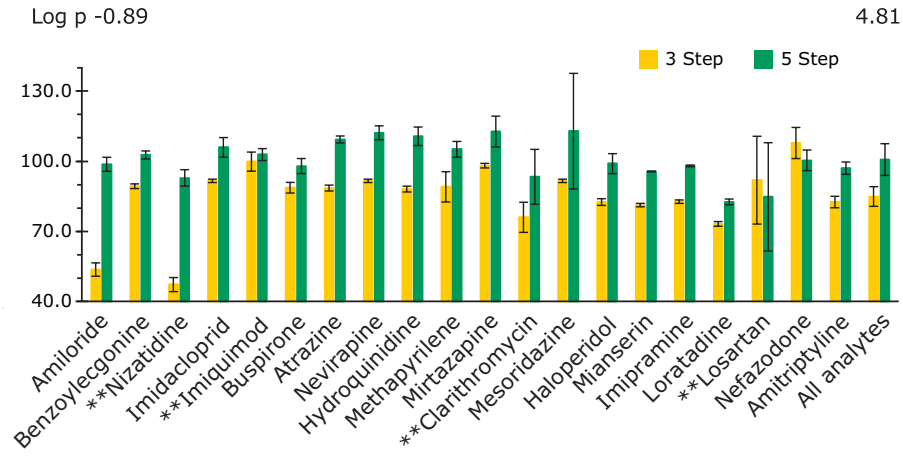

Figure 2: Summary of Recovery for the 3- and 5-Step Process using *Supel™ Swift HLB SPE cartridges*. Analytes are ordered by increasing log P values.

Reduced ion suppression/enhancement for better LC-MS analysis

Samples processed with *Supel™ Swift HLB SPE cartridges* show minimal ionization impact across the compound testing range. The exceptional performance of *Supel™ Swift HLB SPE cartridges* for signal suppression or enhancement was in stark contrast to another HLB cartridge on the market, which exhibited signal suppression/enhancement of more than 10% for most of the analytes tested.

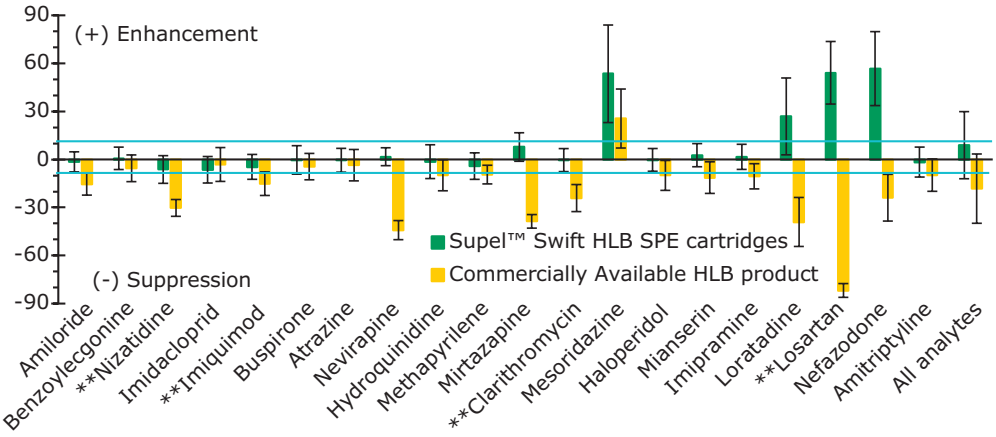

Figure 3. Signal suppression or enhancement effects for *Supel™ Swift HLB SPE cartridges* and another commercially available HLB product using the 5-Step method. Analytes are arranged in order of their increasing log P values.

** Analytes did not have an internal standard.

See our complete offering of Supel™ Swift HLB SPE Products at:

SigmaAldrich.com/SupelSwiftHLB

To place an order or receive technical assistance

Order/Customer Service: **SigmaAldrich.com/order**
Technical Service: **SigmaAldrich.com/techservice**
Safety-related Information: **SigmaAldrich.com/safetycenter**

Merck KGaA
Frankfurter Strasse 250
64293 Darmstadt, Germany

SigmaAldrich.com

MK_FL6258EN Ver. 1.0 32097 07/2020