

EVOLUTE® EXPRESS

96-Well SPE Plates

EVOLUTE® EXPRESS represents a leap forward in high throughput solid phase extraction. The EVOLUTE EXPRESS range of 96-well SPE plates combines powerful EVOLUTE sorbent chemistry with innovative features that enhance productivity by optimizing or even eliminating the need for some traditional steps in the SPE procedure. By truly eliminating the need for conditioning and equilibration, samples can be prepared by loading the plate, washing away interferences and eluting with compatible solvents.



EVOLUTE polymer-based SPE sorbents extract neutral, acidic and basic analytes from biological fluids and other aqueous matrices. EVOLUTE retention and elution characteristics are completely predictable and extractions on these robust sorbents are not affected by drying of the sorbent bed during sample processing. Unlike other polymeric brands, EVOLUTE Express combines a cleaner SPE sorbent with an innovative hardware design, making sample prep simple and more consistent from sample-to-sample.

EVOLUTE EXPRESS ABN

For simultaneous extraction of acidic, basic and/or neutral analytes

EVOLUTE EXPRESS CX

For extraction of basic analytes

EVOLUTE EXPRESS WCX

For extraction of strongly basic analytes

EVOLUTE EXPRESS AX

For extraction of acidic analytes

EVOLUTE EXPRESS WAX

For extraction of strongly acidic analytes

Load-Wash-Elute Procedure

Processing samples using EVOLUTE EXPRESS plates with a simplified Load-Wash-Elute procedure can increase productivity by eliminating the need for the conditioning and equilibration steps. This is made possible due to the combination of the water wettable EVOLUTE sorbents and the aqueous compatible plate components, incorporated in EVOLUTE EXPRESS.

For most applications the Load-Wash-Elute procedure gives the same high analyte recoveries (see Figure 2 overleaf) and low variability as standard SPE but can reduce processing time by one third.

Standard SPE Procedure	EVOLUTE EXPRESS Load-Wash-Elute Procedure
Condition	Not required
Equilibrate	Not required
Load	Load
Wash	Wash
Elute	Elute

Faster, More Efficient Flows

The EVOLUTE® EXPRESS format allows for faster and smoother flow rates, optimized SPE protocols and reduced extraction volumes:

- Faster flow rates on all flow through steps.
- Elimination of clogging which leads to reduced variability across the plate, especially important for automated procedures.
- Reduced processing time for higher throughput and increased lab efficiency.

SPE Step	Processing Time	
	10 mg	30 mg
Condition*	~ 10 s	~ 40 s
Equilibrate*	~ 10 s	~ 45 s
Load	~ 10 s	~ 10 s
Wash 95/5	~ 15 s	~ 40 s
MeOH Elution	~ 10 s	~ 40 s

*These steps can be removed when evaluating Load-Wash-Elute procedure

Table 1. Typical processing times using EVOLUTE EXPRESS ABN 10 mg and 30 mg plates

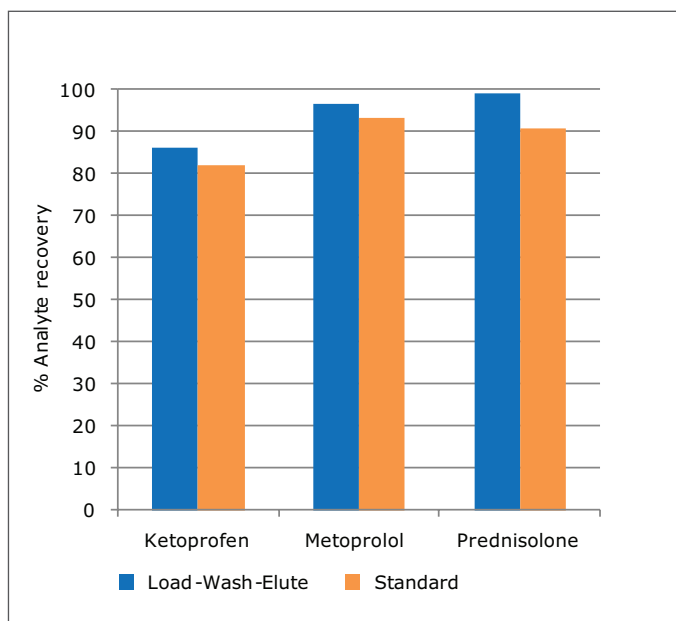


Figure 1. Analyte recovery from plasma using EVOLUTE® EXPRESS ABN Load-Wash-Elute vs. standard SPE procedure

Minimum Elution Volume–Maximizing Efficiency

EVOLUTE EXPRESS plates (10 mg format) can give full analyte recovery using elution volumes of 200 µL allowing direct injection of clean sample extracts. Analytical cycle time can be significantly reduced by removing the need to evaporate and reconstitute samples prior to analysis; this also eliminates the problem of analyte loss during this step.

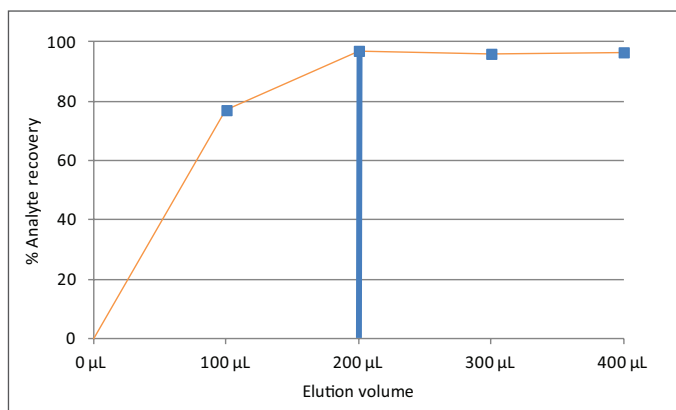
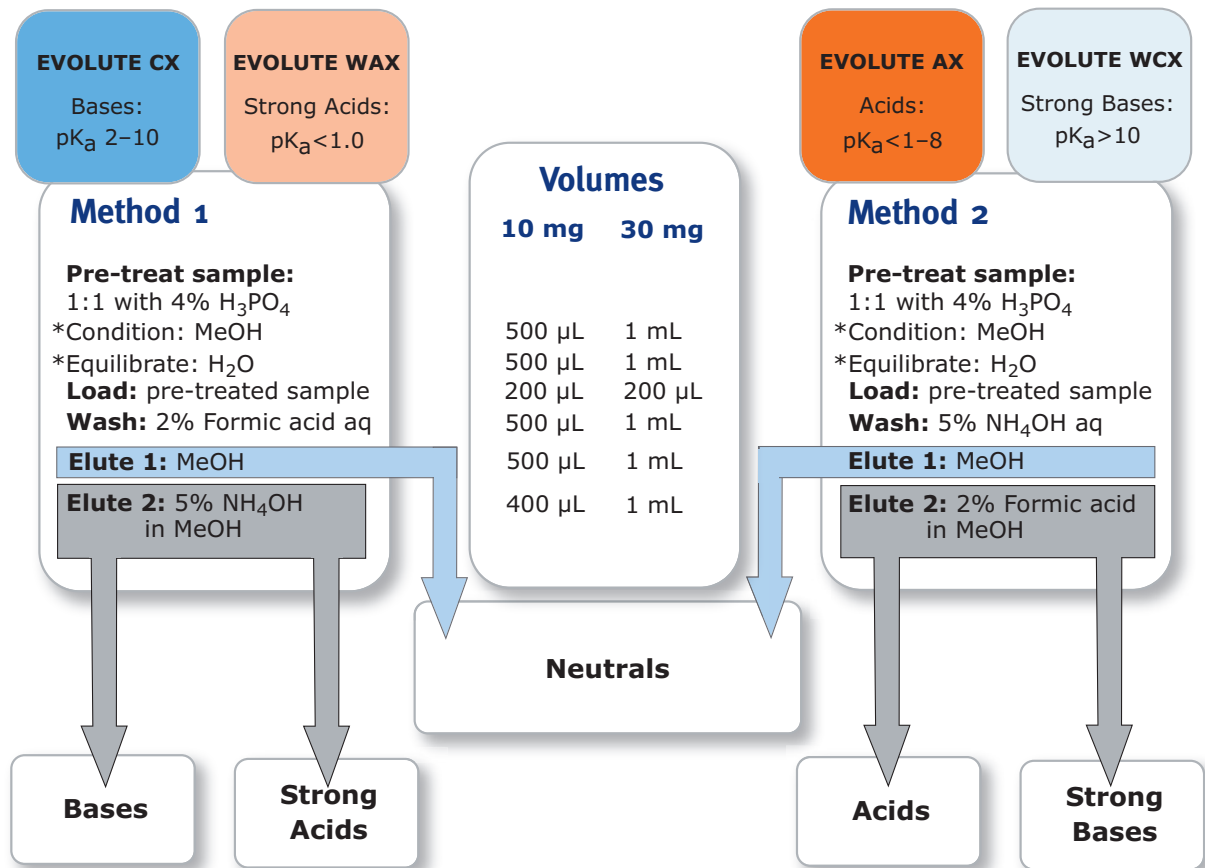


Figure 2. Recovery profile of Ranitidine from plasma using EVOLUTE® EXPRESS CX 10 mg plate with generic extraction protocol

Method Development with the EVOLUTE® EXPRESS Sorbent Selection Plate

The EVOLUTE® EXPRESS Sorbent Selection Plate contains the four EVOLUTE mixed-mode ion-exchange chemistries. It has been designed to provide a single plate for streamlined method development and identify the best solution to sample preparation challenges, for example extraction of unknowns or peptides.

Screening methods for the Sorbent Selection Plate based upon generic extraction protocols are illustrated in Figure 3. Once the best sorbent has been selected, extraction methodology can be optimized using the EVOLUTE User Guide available from www.biotage.com/EVOLUTE.



*These steps can be removed when evaluating Load-Wash-Elute procedure

Figure 3. EVOLUTE® EXPRESS Sorbent Selection Plate screening method

Ordering Information

Description	Part number	Quantity
EVOLUTE EXPRESS ABN 10 mg Fixed Well Plate	600-0010-PX01	1
EVOLUTE EXPRESS ABN 30 mg Fixed Well Plate	600-0030-PX01	1
EVOLUTE EXPRESS CX 10 mg Fixed Well Plate	601-0010-PX01	1
EVOLUTE EXPRESS CX 30 mg Fixed Well Plate	601-0030-PX01	1
EVOLUTE EXPRESS WCX 10 mg Fixed Well Plate	602-0010-PX01	1
EVOLUTE EXPRESS WCX 30 mg Fixed Well Plate	602-0030-PX01	1
EVOLUTE EXPRESS AX 10 mg Fixed Well Plate	603-0010-PX01	1
EVOLUTE EXPRESS AX 30 mg Fixed Well Plate	603-0030-PX01	1
EVOLUTE EXPRESS WAX 10 mg Fixed Well Plate	604-0010-PX01	1
EVOLUTE EXPRESS WAX 30 mg Fixed Well Plate	604-0030-PX01	1
EVOLUTE EXPRESS Sorbent Selection 10 mg Fixed Well Plate	650-0010-PX01	1
EVOLUTE EXPRESS Sorbent Selection 30 mg Fixed Well Plate	650-0030-PX01	1

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