

Solid Phase Extraction (SPE) Method Development for Thermo Scientific SOLA and SOLA μ

Consistent excellence for bioanalysis

Thermo Scientific™ SOLA™ products are designed for bioanalytical and clinical research analysts who are tasked with providing high-quality analytical results from complex biological samples in a high-throughput environment, while complying with strict legislation. These demands are compounded by the continued push to higher efficacy drugs and long acting formulations which continue to drive sensitive requirements to lower levels to enable accurate quantification.

In order to meet these demands, bioanalytical methods must provide:

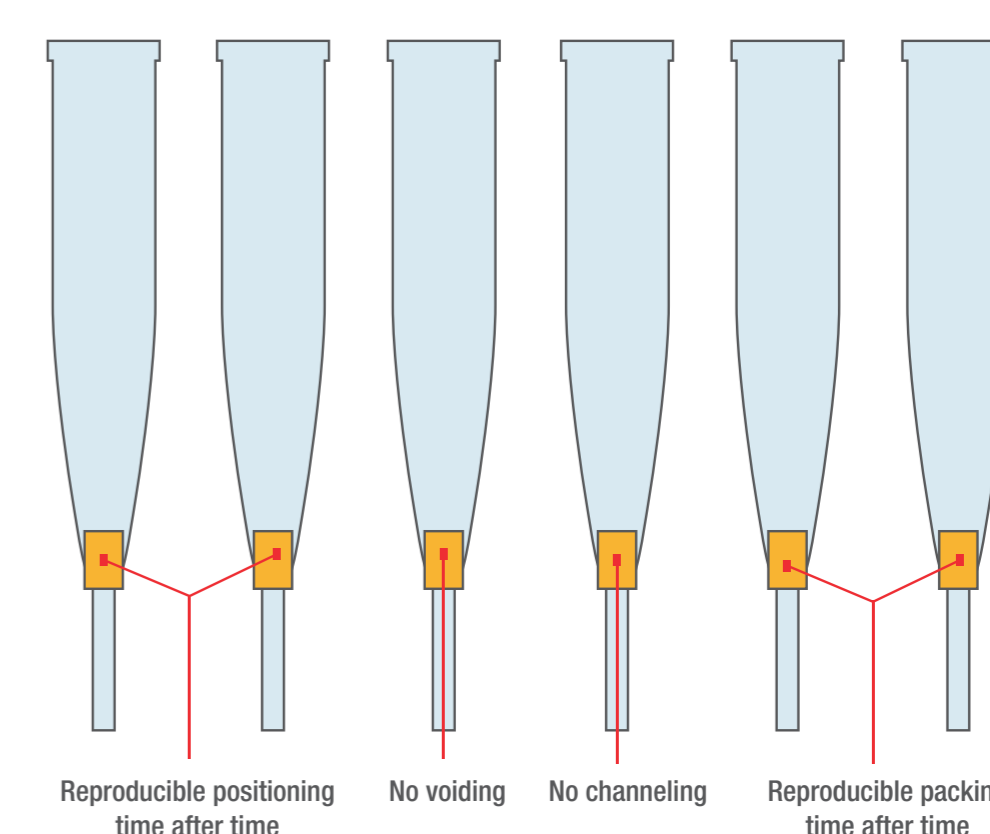
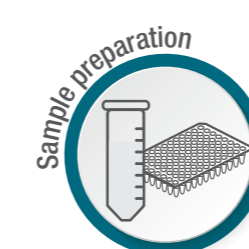
- Robustness – low analytical failure rates
- Ability to process low sample volumes
- High sensitivity
- High reproducibility
- Ease of use
- High throughput processing
- Efficient and fast processes



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Acidic Compounds		Neutral Compounds	Basic Compounds	
Strong Acids	Weak Acids	Neutral Compounds	Weak Bases	Strong Bases
(pK _a < 2)	(pK _a 2-4)		(pK _a 8-10)	(pK _a > 10)

The SOLA SPE range meets these demands due to the unique and innovative frit-less SPE technology which eliminates the issues with traditional loose-packed SPE formats (see figure to the right). Combining the support material and active media components into a solid, uniform sorbent bed provides stable and controllable flow through characteristics and has an added advantage when dealing with viscous biological samples, as it prevents blocking and enables high throughput processing.



The manufacturing process also allows for high levels of reproducibility, not only from cartridge to cartridge or well to well but also batch to batch. The Thermo Scientific™ SOLA μ ™ SPE range has the added benefit of being able to provide:

- Up to a 20 fold increase in sensitivity
- Ability to process samples restricted in volume
- Increased workflow efficiency and sample integrity

SOLA WAX	SOLA SAX	SOLA HRP	SOLA SCX	SOLA WCX
Mixed mode weak anion exchange	Mixed mode strong anion exchange	Reversed phase	Mixed mode strong cation exchange	Mixed mode weak cation exchange
Generic method protocol for cartridge and 96 well plate formats				
Condition: 500 μ L methanol	Condition: 500 μ L methanol	Condition: 500 μ L methanol	Condition: 500 μ L Methanol	Condition: 500 μ L methanol
Equilibrate: 500 μ L water with 1% formic acid	Equilibrate: 500 μ L water with 1% ammonium hydroxide	Equilibrate: 500 μ L Water	Equilibrate: 500 μ L Water with 1% formic acid	Equilibrate: 500 μ L water with 1% ammonium hydroxide
Load: 50-500 μ L of sample at 1 mL/min	Load: 50-500 μ L of sample at 1 mL/min with 1% ammonium hydroxide	Load: 50-500 μ L of sample at 1 mL/min	Load: 50-500 μ L of sample at 1 mL/min with 1% formic acid	Load: 50-500 μ L of sample at 1 mL/min with 1% ammonium hydroxide
Wash 1: 500 μ L water	Wash 1: 500 μ L water with 1% ammonium hydroxide	Wash 1: 500 μ L 5% Methanol in water	Wash 1: 500 μ L Water with 1% formic acid	Wash 1: 500 μ L water with 1% ammonium hydroxide
Wash 2: 500 μ L methanol	Wash 2: 500 μ L methanol with 1% ammonium hydroxide		Wash 2: 500 μ L Methanol with 1% formic acid	Wash 2: 500 μ L methanol with 1% ammonium hydroxide
Elute: 200-500 μ L methanol with 1% ammonium hydroxide	Elute: 200-500 μ L methanol with 1% formic acid	Elute: 200-500 μ L Methanol	Elute: 200-500 μ L Methanol with 1% ammonium hydroxide	Elute: 200-500 μ L methanol with 1% formic acid

SOLA μ 96 Well Plates

Description	Bed weight	Well volume	Cat. no.	Quantity
SOLA μ HRP	2 mg	1 mL	60209-001	1 each
SOLA μ SCX	2 mg	1 mL	60209-002	1 each
SOLA μ SAX	2 mg	1 mL	60209-003	1 each
SOLA μ WCX	2 mg	1 mL	60209-004	1 each
SOLA μ WAX	2 mg	1 mL	60209-005	1 each

SOLA SPE Cartridges

Description	Bed weight	Well volume	Cat. no.	Quantity
SOLA μ HRP	10 mg	1 mL	03-150-391	100 pack
SOLA μ SCX	10 mg	1 mL	03-150-392	100 pack
SOLA μ SAX	10 mg	1 mL	03-150-393	100 pack
SOLA μ WCX	10 mg	1 mL	60-109-004	100 pack
SOLA μ WAX	10 mg	1 mL	03-150-401	100 pack

SOLA 96 Well Plates

Description	Bed weight	Well volume	Cat. no.	Quantity
SOLA μ HRP	10 mg	2 mL	03-150-394	1 each
SOLA μ SCX	10 mg	2 mL	03-150-395	1 each
SOLA μ SAX	10 mg	2 mL	03-150-396	1 each
SOLA μ WCX	10 mg	2 mL	03-253-939	1 each
SOLA μ WAX	10 mg	2 mL	60-309-005	1 each

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