

Instruction sheet

AFFINIMIP® SPE Phenolics cartridges

Users should read all instructions before using this kit.

For laboratory use only

AFFINIMIP® SPE Phenolics is:

- **Developed and manufactured by AFFINISEP**

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Method for Selective Phase Extraction of Phenolic compounds using Molecularly Imprinted Polymers

1 INTRODUCTION

AFFINIMIP®SPE Phenolics has been developed to selectively extract Phenolic compounds.

In this guide, several loading solutions have been described in order to use the best condition for your application. Furthermore, within each protocol, some instructions enable an evolution of the protocols depending on the results obtained during the elution step.

By using **AFFINIMIP® SPE**, the expected result is a clean-up and a pre-concentration of the sample at trace levels.

2 PRINCIPLE OF AFFINIMIP® SPE

AFFINIMIP® SPE is a solid phase obtained by a polymerisation process to create a three-dimensional network that recognizes the shape and functional group positions of a template molecule. The **AFFINIMIP® SPE** selectivity comes from the technology of molecularly imprinted polymer (MIP) used during the synthesis.

3 PRODUCT INFORMATION

Description of the kit

Each solid phase extraction cartridge contains 100mg of sorbent in a 3mL cartridge.

Information and storage

Storage: Room temperature.

4 PRECAUTIONS FOR USE

SPE methods developed for C18 or other sorbents are not appropriated for **AFFINIMIP® SPE Phenolics.**

5 GENERAL INSTRUCTIONS FOR SPE

5.1 Equipment required

In addition to standard laboratory equipment, the following material is required for the use of **AFFINIMIP® SPE** cartridges:

- Manifold or SPE automate
- Nitrogen Mini-vap evaporator or a vacuum concentrator to dry the collected sample

5.2 Flow rate

Flow information is given for each step in the protocol. It is important to follow these instructions.

Especially during the loading, if the sample flow rate is too high, components may not interact sufficiently with the sorbent and the analyte recovery yield will be lower.

6 CLEAN-UP PROCEDURE:

Two protocols with different loading compositions are described for **AFFINIMIP® SPE Phenolics** cartridges.

The volume and the nature of solvents should be adapted (especially for the washing steps) to the nature of interferents.

6.1 Preparation of solutions

- Solution Acetonitrile – 2% Methanol (v/v)

In a 10mL-volumetric flask, add 0.2mL of Methanol and complete with Acetonitrile.

- Solution Methanol – 2% Acetic Acid (v/v)

In a 10mL-volumetric flask, add 0.2mL of Acetic Acid and complete with Methanol.

- 60/40 deionized water / Acetonitrile (v/v)

In a 10mL-volumetric flask, add 4 mL of Acetonitrile and complete with deionized water.

- 58/40/2 deionized water /Acetonitrile/Acetic Acid (v/v/v)

In a 10mL-volumetric flask, add 0.2 mL of Acetic Acid then 4mL of Acetonitrile and complete with deionized water.

6.2 Protocol with an hydro-organic loading solution

Step (Flow rate)	AFFINIMIP® SPE Phenolics (100mg/3mL)
Equilibration with (2 drops/s)	<ul style="list-style-type: none"> ▪ 3mL MeOH-2% Formic Acid ▪ 3mL Acetonitrile ▪ 3mL water ▪ Do not allow the cartridge to dry during conditioning
Loading (L) (1 drop every 2 seconds)	<p>1-12mL of sample prepared in water or a mixture of water/organic solvent (Acetonitrile, Methanol or Ethanol) (with a maximum of 40% of organic solvent)</p>
Washing of interferents (W1) (1 drop/s)	<p>For very aqueous sample, AFFINISEP advises to do a first washing step with</p> <p style="text-align: center;">1-6mL water</p>
Washing of interferents (W2) (1 drop/s)	<p>AFFINISEP advises to wash with</p> <p>1-9mL deionized water /Acetonitrile (v/v) (with a maximum of 40% of Acetonitrile)</p> <p>If too many interferents are in the elution step, we recommend you to replace the previous washing step by the following one:</p> <p>1-3mL 58/40/2 deionized water /Acetonitrile/Acetic Acid (v/v/v)</p>
Elution (E) (1 drop/s)	<p>To make a fast solvent evaporation, AFFINISEP advises to elute with</p> <p style="text-align: center;">3mL Methanol</p> <p>If the analyte remains in the cartridge due to strong interactions, We recommend you to use the following elution step:</p> <p style="text-align: center;">2mL Methanol - 2% Acetic Acid (v/v)</p> <p style="text-align: center;">OR</p> <p style="text-align: center;">2mL Methanol - 2% Formic Acid (v/v)</p>

6.3 Protocol with dichloromethane loading solution

The dichloromethane loading solution must be dry. It can be dried for instance with magnesium sulfate.

Step (Flow rate)	AFFINIMIP® SPE Phenolics (100mg/3mL)
Equilibration with (2 drops/s)	<ul style="list-style-type: none"> ▪ 3mL MeOH-2% Acetic Acid ▪ 3mL MeOH ▪ 3 mL Dichloromethane ▪ Do not allow the cartridge to dry during conditioning
Loading (L) (1 drop every 2 seconds)	1-6mL of sample in Dichloromethane
Washing of interferences (W) (1 drop/s)	1-6mL Dichloromethane
Elution (E) (1 drop/s)	<p>To make a fast solvent evaporation, AFFINISEP advises you to elute with</p> <p style="text-align: center;">3mL Methanol</p> <p>If the analyte remains in the cartridge due to strong interactions, We recommend you to use the following elution step:</p> <p style="text-align: center;">2mL Methanol - 2% Acetic Acid (v/v)</p> <p style="text-align: center;">OR</p> <p style="text-align: center;">2mL Methanol - 2% Formic Acid (v/v)</p>

6.4 Use of the elution fraction (E)

The elution fraction (E) is evaporated until dryness under nitrogen with a mini-vap evaporator at room temperature (or a centrifugal evaporator). The residue is dissolved in 0.5mL of mobile phase for further analysis. Alternatively, the elution fraction may be diluted to a known volume by addition of water for further analysis.

PRODUCTS LIST

AFFINIMIP® SPE Products	Designation	Description
Multimycos10	AFFINIMIP® SPE Multimycos10	selective SPE cartridges 3mL for ZON, OTA, HT-2, T-2, Aflatoxins and Fumonisin
Zearalenone	AFFINIMIP® SPE Zearalenone	selective SPE cartridges 3mL for ZON
Ochratoxin A	AFFINIMIP® SPE Ochratoxin A	selective SPE cartridges 3mL for OTA
Patulin	AFFINIMIP® SPE Patulin	selective SPE cartridges for Patulin
	AFFINIMIP® SPE Patulin & Pectinase kit	kit of selective SPE cartridges for Patulin + 50mL pectinase enzyme solution
Deoxynivalenol	AFFINIMIP® SPE Deoxynivalenol	selective SPE cartridges 6mL for DON
Phenolics	AFFINIMIP® SPE Phenolics	selective SPE cartridges for Phenolic compounds
Estrogens	AFFINIMIP® SPE Estrogens	selective SPE cartridges for Estrogens
Zeranol Residues	AFFINIMIP® SPE Zeranol Residues	selective SPE cartridges for Zeranol Residues
Bisphenol A	AFFINIMIP® SPE Bisphenol A	selective (PP or Glass) SPE cartridges for Bisphenol A
FumoZON	AFFINIMIP® SPE FumoZON	selective SPE cartridges for Fumonisin and Zearalenone
Chloramphenicol	AFFINIMIP® SPE Chloramphenicol	selective SPE cartridges for Chloramphenicol
Tamoxifen	AFFINIMIP® SPE Tamoxifen	selective SPE cartridges for Tamoxifen
Catecholamines	AFFINIMIP® SPE Catecholamines	selective SPE cartridges for Catecholamines
	AFFINIMIP® SPE Catecholamines	selective SPE cartridges for Catecholamines
Metanephrines	AFFINIMIP® SPE Metanephrines	selective SPE cartridges for Metanephrines
Amphetamines	AFFINIMIP® SPE Amphetamines	selective SPE cartridges for Amphetamines
PECTINASE	Pectinase solution	50 mL pectinase enzyme solution
AttractSPE™ Products	Designation	Description
W/O	AttractSPE™ W/O	HLB SPE cartridges sorbent
SCX	AttractSPE™ SCX	Strong Cation Exchange SPE cartridges sorbent
WCX	AttractSPE™ WCX	Weak Cation Exchange SPE cartridges sorbent
SAX	AttractSPE™ SAX	Strong Anion Exchange SPE cartridges sorbent
WAX	AttractSPE™ WAX	Weak Anion Exchange SPE cartridges sorbent
DVB	AttractSPE™ DVB	Reversed Phase Copolymer SPE cartridges sorbent
Anionic & Cationic AttractSPE polymeric cartridges	AttractSPE™ KIT	Kit of 10 cartridges of each sorbent (SAX, WAX, WCX, SCX)

For more information:

For more information on our products & services, please visit www.polyintell.com