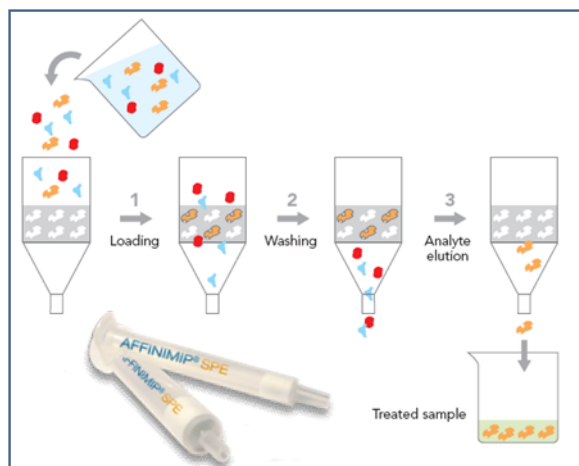


Selective Solid Phase Extraction of Guaiacol using AFFINIMIP® SPE Phenolics



Background

Guaiacol (see figure 1) is a natural occurring compound which is a potential biomarker of woodsmoke. It also contributes to the flavour of many compounds.

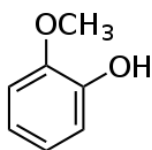


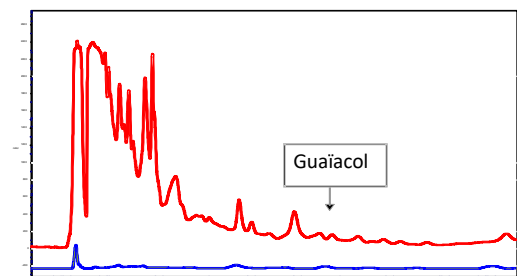
Figure 1. General structure of Guaiacol

This application note describes the analysis of Guaiacol in red or white wine using AFFINIMIP® SPE Phenolics cartridge.

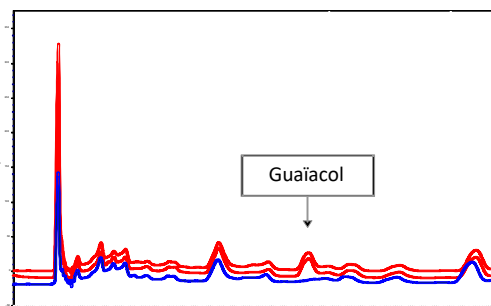
Results

Perfect cleanup

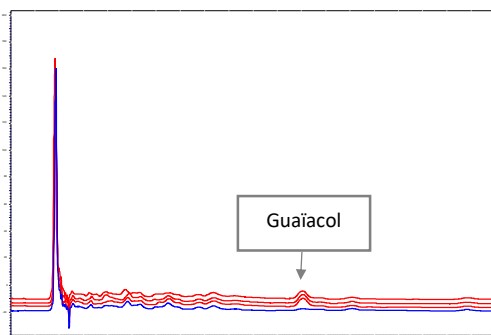
Chromatograms obtained before (red) and after (blue) clean-up with AFFINIMIP® SPE Phenolics of red wine spiked with Guaiacol (0.1µM)



Chromatograms obtained after clean-up with AFFINIMIP® SPE Phenolics of red wine spiked with Guaiacol (0.1µM) (red) or not spiked (blue).



Chromatograms obtained after clean-up with AFFINIMIP® SPE Phenolics of white wine spiked with Guaiacol (0.02µM) (red) or not spiked (blue).



Good reproducibility and high recovery yields

Recovery yields and reproducibility evaluated with 3 cartridges and 3 different batches of AFFINIMIP® SPE Phenolics by matrix (n=9)

	C° (µM)	Recoveries %	RSD _R %
Red wine 1	0.1	88.1	3.9
Red wine 2	0.1	93.1	3.7
White wine 1	0.02	96.8	1.7
White wine 2	0.02	93.5	2.6

Experimental conditions

Solid phase extraction (SPE) protocol

The SPE procedure used a 3mL AFFINIMIP® SPE Phenolics cartridge. The details of each step are as follow:

- Condition the SPE cartridge with 3mL of Acetonitrile (ACN), then with 3mL of deionized Water

- Load up to 2mL of red or white wine
- Wash the cartridge with 3mL of deionized Water then 3mL Water/Acetonitrile (80/20, v/v)
- Elute Guaiacol with 2mL of Methanol

Analysis

HPLC was performed on a ThermoFinnigan Spectra System with a Thermo Hypersil Gold column (150mm x 4.6mm). Separation was carried out using a flow rate of 1mL/min and a mobile phase composed of 15/85 (v/v) Acetonitrile/Water. The detection system was a ThermoFinnigan Spectra System Model UV6000LP set to 272nm. The injection volume was 100µL.

Product references

- **AFFINIMIP® SPE Phenolics**
 - FS103-02 for 25 polypropylene cartridges 3mL
 - FS103-03 for 50 polypropylene cartridges 3mL