

Pharmaceutical Residues in Environmental Samples – LC-MS, 2.5 ppb

Waters Corporation



This is an Application Brief and does not contain a detailed Experimental section.

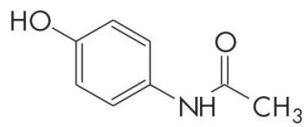
Abstract

This application brief highlights the analysis of pharmaceutical residues in environmental

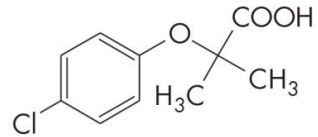
samples using XTerra MS C₁₈ columns.

Introduction

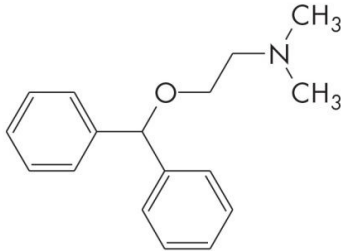
Compounds used in this study includes: 1. Acetaminophen 2. Phenylpropanolamine 3. Salicylic acid 4. Diphenhydramine 5. Clofibric acid 6. Ethynylestradiol 7. Tamoxifen 8. Ibuprofen



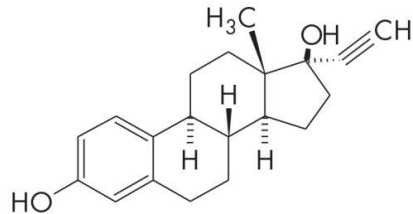
Acetaminophen



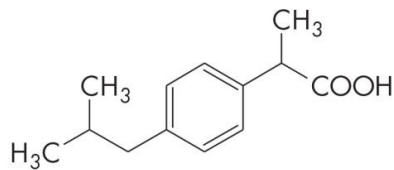
Clofibric acid



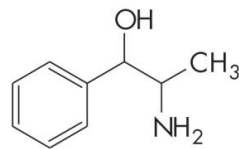
Diphenhydramine



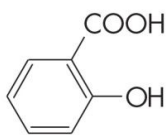
Ethynylestradiol



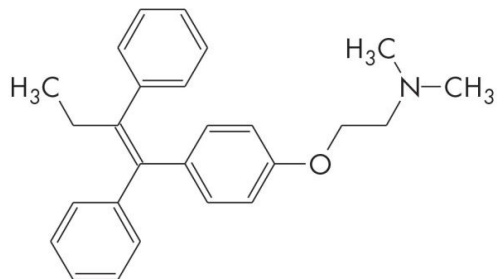
Ibuprofen



Phenylpropanolamine



Salicylic acid



Tamoxifen

Experimental

HPLC Conditions

Column:	XTerra MS C ₁₈ 4.6 x 100 mm, 3.5µm (p/n: 186000436)
Mobile phase A:	15 mM NH ₄ COOH, pH 4.0
Mobile phase B:	MeOH
Flow rate:	1.0 mL/min
Injection volume:	40 µL
Detection:	MS ESI+
Instrument:	Alliance 2695, Micromass ZQ

Gradient

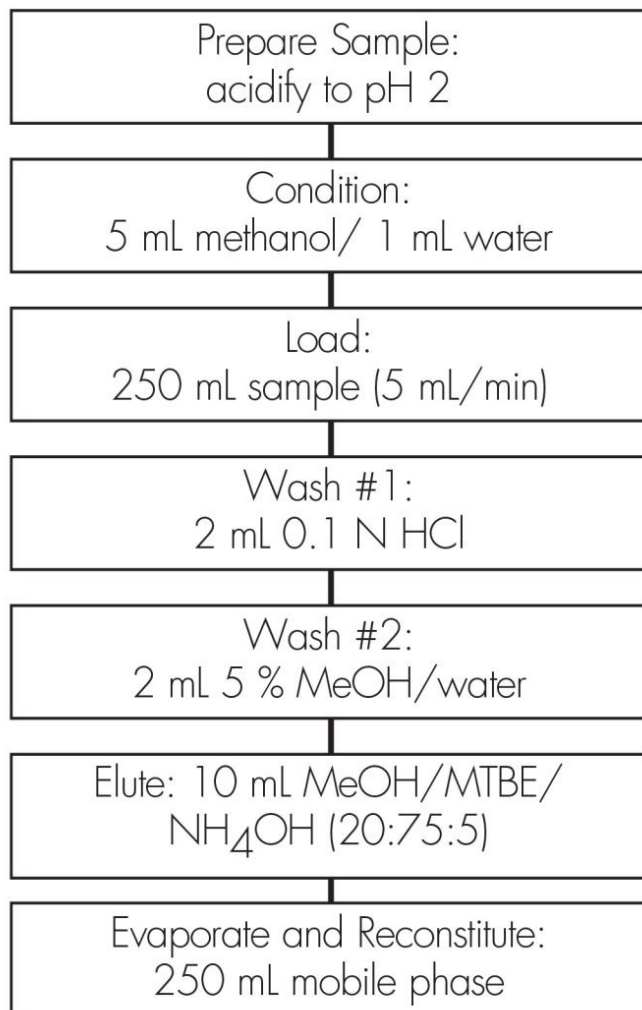
Time (min)	Profile	
	%A	%B
0.0	75	25
10.0	10	90

Optimized SPE Method for LC/MS Determination of Pharmaceutical Residues in Environmental Samples

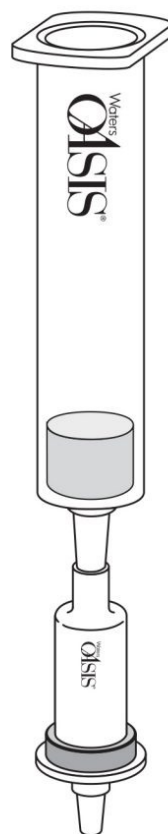
Conditions for

Oasis® MCX 6 cc/150 mg (60 µm) Part Number 186000255

Oasis® HLB Plus Part Number 186000132



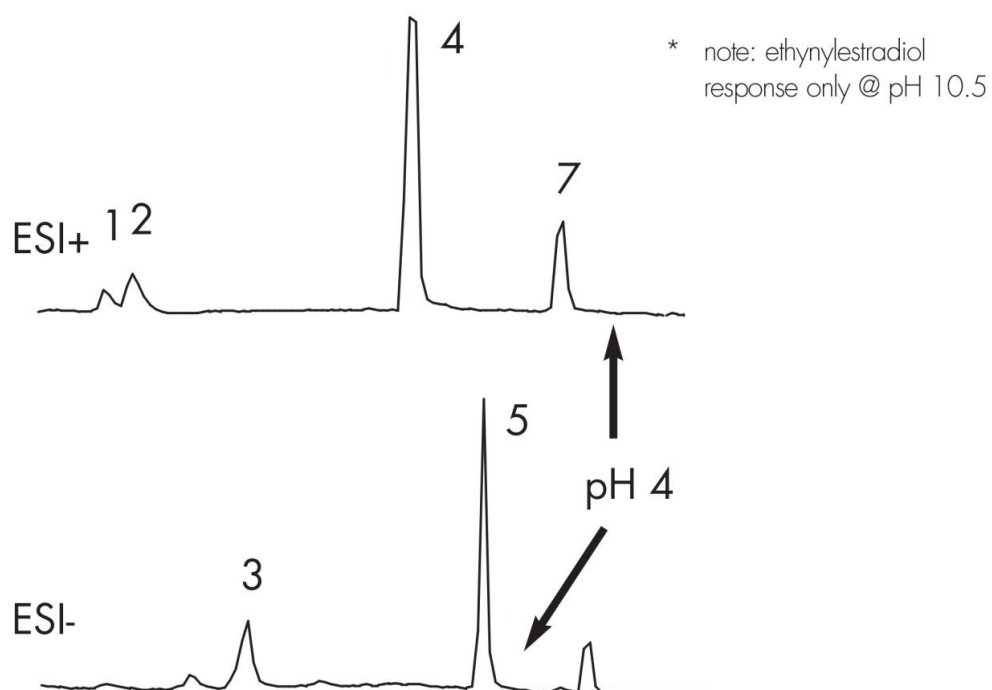
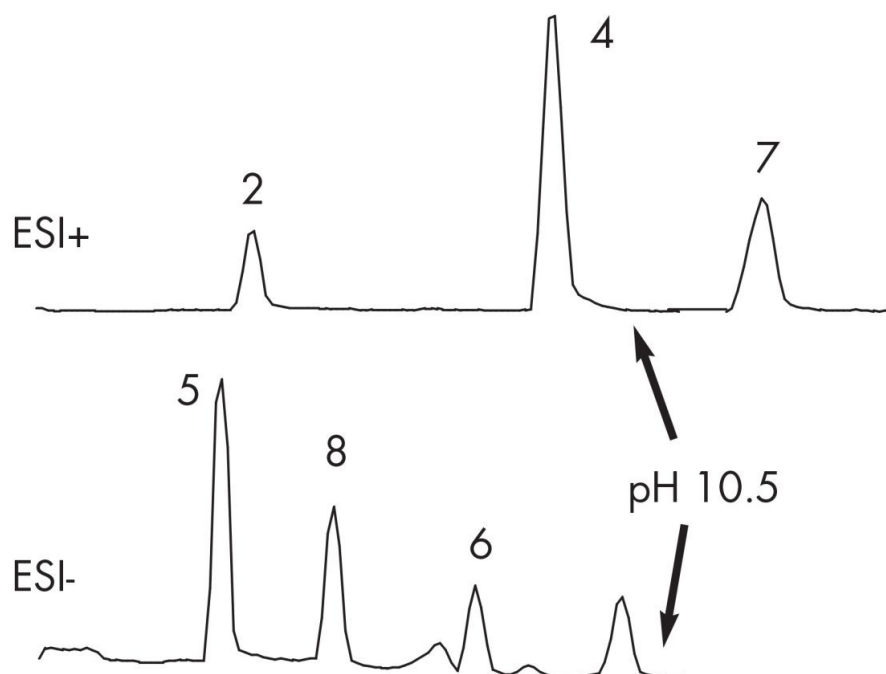
MeOH - methanol MTBE - methyl tbutyl ether
NH₄OH - 30% ammonium hydroxide



Oasis® MCX 6 cc,
150 mg (60 mm)
Part Number 186000255

Oasis® HLB Plus
Part Number 186000132

Results and Discussion



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