Waters™

應用手冊

Pharmaceutical Compounds in Plasma

Waters Corporation

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

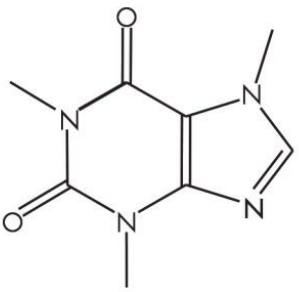
Abstract

This application brief demonstrates analysis of pharmaceutical compounds in plasma.

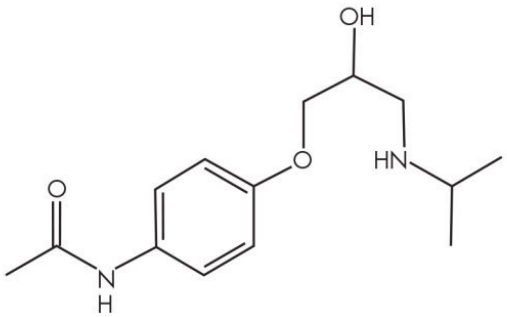
Introduction

The compounds used in this study are –

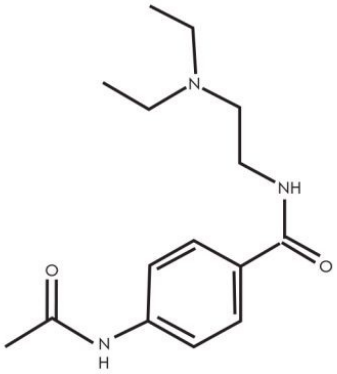
1. Caffeine
2. Practolol
3. N-acetyl procainamide
4. Propranolol
5. Methoxyverapamil
6. Amitriptyline



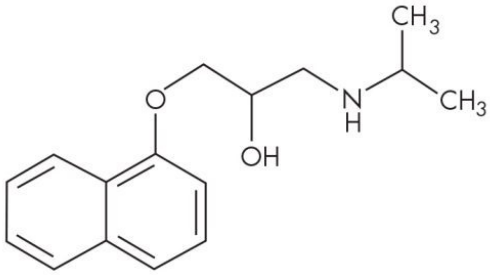
Caffeine



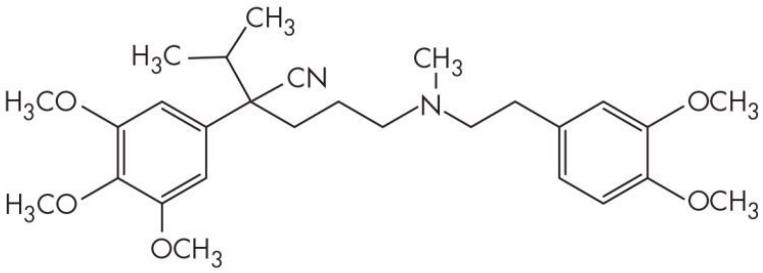
Practolol



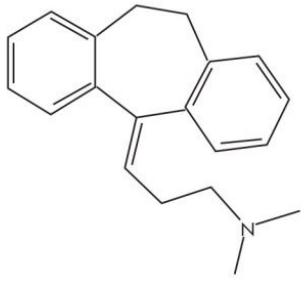
N-acetyl procainamide



Propranolol



Methoxyverapamil



Amitriptyline

Experimental

LC Conditions

Column:	Xterra MS C_{18}, 2.1 x 20 mm *IS*, 3.5 µm, (p/n: 186001
Mobile phase A:	10 mM NH_4HCO_3, pH 10
Mobile phase B:	Methanol
Flow rate:	0.4 mL/min
Injection volume:	20 µL
Sample concentration:	5 µg/mL
Temperature:	Ambient
Detection:	MS
Instrument:	Waters 277 Sample Manager, Waters 1525 Binary H Pump and Waters Micromass Quattro Ultima

Gradient

Time (min)	Profile	
	%A	%B
0.0	100	0
5.0	5	95

MS Conditions

Quattro Ultima

ES^+ MRM cone (V):	5.0

Quattro Ultima

Capillary:	3.5
Source temp. (°C):	150
Desolvation temp. (°C):	400
Cone gas flow (L/Hr):	50
Desolvation gas fLow(L/Hr):	550
LM resolution 1 & 2:	13.5
HM resolution 1 & 2:	13.5
Ion energy 1:	0.4
Ion energy 2:	0.8
Multiplier (V):	650

Sample Preparation

SPE:	Oasis HLB µElution Plate, (p/n:186001828BA) p/n:186001828BA
Condition:	200 µL Methanol
Equilibrate:	200 µL Water
Load:	150 µL Spiked rat plasma with 2% H_3PO_4, diluted with 1:1 Water

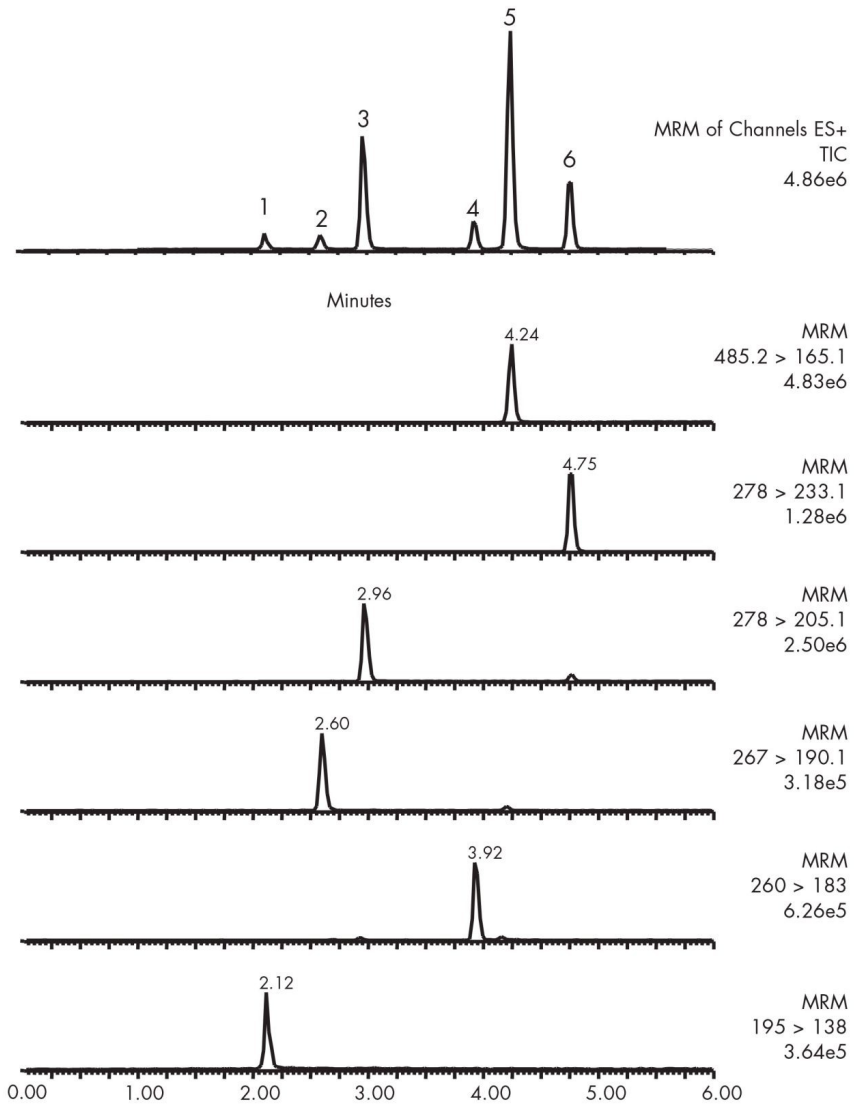
Wash:	200 µL 5% Methanol in Water
Elute:	50 µL Methanol
Dilute:	100 µL Water

Results and Discussion

Compounds (MRM Transitions, Cone voltage (V), CID (eV)

1. Caffeine (195 > 138; 20; 20)
2. Practolol (267 > 190.1; 30; 20)
3. N-acetyl procainamide (278 > 205.1; 25;20)
4. Propranolol (260 > 183; 25;18)
5. Methoxyverapamil (485.2 > 165.1; 45; 30)
6. Amitriptyline (278 > 233.1; 25; 17)

The top figure is the total ion current, followed by the extracted ion signals for each of the three analytes.



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