[APPLICATION HIGHLIGHT]

Waters
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ROPINIROLE ON OASIS MCX

INTRODUCTION

Ropinirole is a potent, basic drug with a low oral dose range. A bioanalytical method needs to be developed that can reach a lower limit of quantitation of 0.02 ng/mL, which is lower than what is typically required. The Oasis® MCX µElution 96-well plate was selected for its increased sensitivity through concentration, without drying down which allows reconstituting the extract.

TEST CONDITIONS:

Oasis MCX µElution 96-well plate:

Condition:	200 µL MeOH
Equilibrate:	200 µL H_2O
Load:	400 µL diluted plasma sample (200 µL plasma diluted 1:1 with 4% H_3PO_4)
Wash 1:	200 µL 2% HCOOH
Wash 2:	200 µL MeOH
Elute:	2 X 25 µL 5% NH_4OH in 90:10 MeOH:H_2O (less MeOH used for a cleaner extract – less residual matrix components eluted.)
Injection:	8 µL (direct injection)

Column:	ACQUITY UPLC® BEH C_{18}, 2.1 x 50 mm, 1.7 µm
Mobile Phase A:	10 mM NH_4COOH, pH 9
Mobile Phase B:	MeOH
Flow Rate:	0.5 mL/min

Gradient:

Time (min)	Profile %A	%B	Curve
0.0	95	5	6
2.0	2	98	6
2.5	2	98	6
2.6	95	5	6
3.0	95	5	6

Injection Volume:	8.0 µL
Column Temp:	45 °C
Sample Temp:	15 °C
Sample Diluent:	25:75 H_2O:MeOH
Strong Needle Wash:	60:40 ACN:IPA + 0.5% HCOOH (1200 µL)
Weak Needle Wash:	95:5 H_2O:MeOH (500 µL)

Quattro Premier™

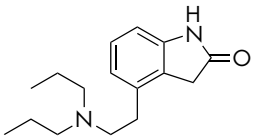
Desolvation Temp:	350 °C
Cone Gas Flow:	50 L/Hr
Desolvation Gas Flow:	700 L/Hr
Collision Cell Pressure:	2.6 x 10(-3) mbar

MRM transitions monitored:

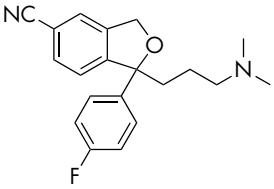
Ropinirole m/z 261.2 > 113.95 (ESI+)
Citalopram (IS) m/z 325.2 > 108.85 (ESI+)

For both analytes, the optimal cone voltage was 40 V. For Ropinirole and Citalopram, the collision energies were 18 eV and 25 eV, respectively.

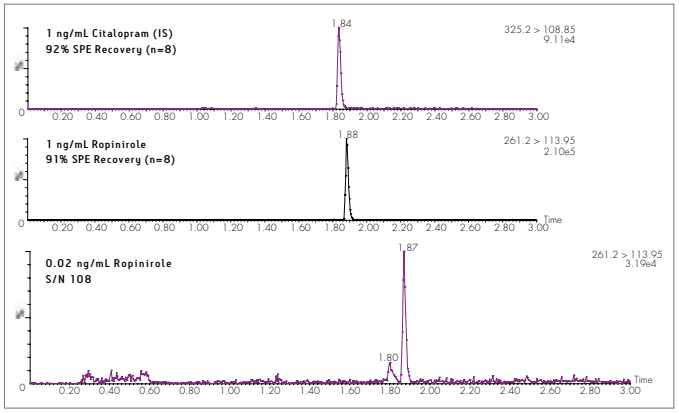
COMPOUNDS:



Ropinirole
MW 260.4
pKa 9.7



Citalopram
MW 324.4
pKa 9.5



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Waters Corporation
34 Maple Street
Milford, MA 01757 U.S.A.
T: 1 508 478 2000
F: 1 508 872 1990
www.waters.com