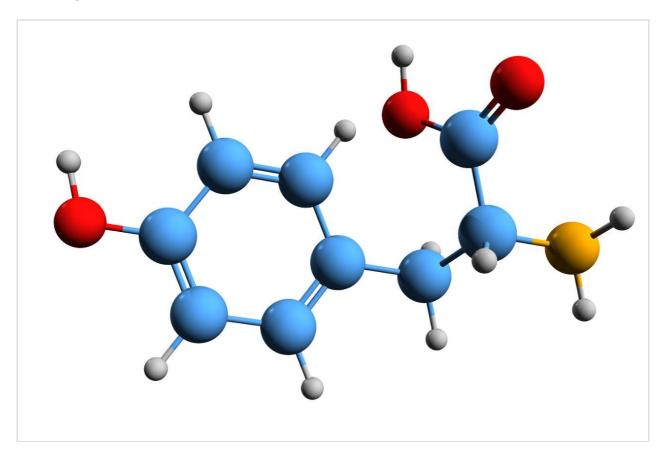
Waters™

Application Note

Analysis of Catecholamines Using XBridge Shield RP₁₈

Waters Corporation



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

Abstract

This application brief highlights the analysis of catecholamines using XBridge Shield RP₁₈ Columns.

Introduction

Catecholamines, such as epinephrine (adrenaline), norepinephrine (noradrenaline), and dopamine, are derived from the amino acid tyrosine and act as important hormones or neurotransmitters.

1. Norepinephrine

3. Dopamine

5. MHPG

7. DOPAC

9. HVA

2. Epinephrine

4. VMA

6. Serotonin

8. 5-HIAA

Test Conditions

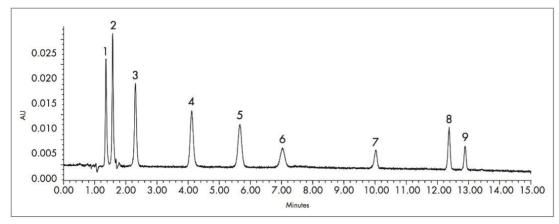
Columns:		XBridge Shield RP $_{18}$ 4.6 X 100 mm, 3.5 μ m p/n: 186003044		
Mobile phase A:		H ₂ O		
Mobile phase B:		ACN		
Mobile phase C:		100 mM HCOONH ₄ , pH 3.0		
Flow rate:		1.0 mL/min		
Injection volume:		10 μL		
Sample Concentration and Diluent:		10 μg/mL in H ₂ O		
Temp.:		30 °C		
Sampling Rate:		5 points /second		
Detection:		UV @ 280 nm		
Time Constant:		1.0		
Needle Wash:		5/95 MeOH/H ₂ O		
Instrument:		Alliance 2695 with 2996 PDA		
Gradient				
Time(min)	%A	%B	%C	
0	90	0	10	
5	90	0	10	

Time(min)	%A	%B	%C
15	65	25	10
16	65	25	10
17	90	0	10
20	90	0	10

System Suitability Parameters

	Retention Time (min)	USP Tailing Factor	Width at 4.4%	USP Resolution
Norepinephrine	1.36	1.18	0.120	
Epinephrine	1.58	1.26	0.137	2.68
Dopamine	2.31	0.97	0.176	7.22
VMA	4.12	0.96	0.232	11.65
MHPG	5.67	1.01	0.251	7.73
Serotonin	7.03	1.05	0.336	5.40
DOPAC	10.03	0.72	0.277	12.29
5-HIAA	12.38	0.94	0.155	14.39
HVA	12.89	0.86	0.160	4.14

Results and Discussion



- Compounds:
 1. Norepinephrine
 2. Epinephrine
 3. Dopamine
 4. VMA
 5. MHPG

- 6. Serotonin 7. DOPAC
- 8. 5-HIAA 9. HVA

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WA60201, June 2007

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