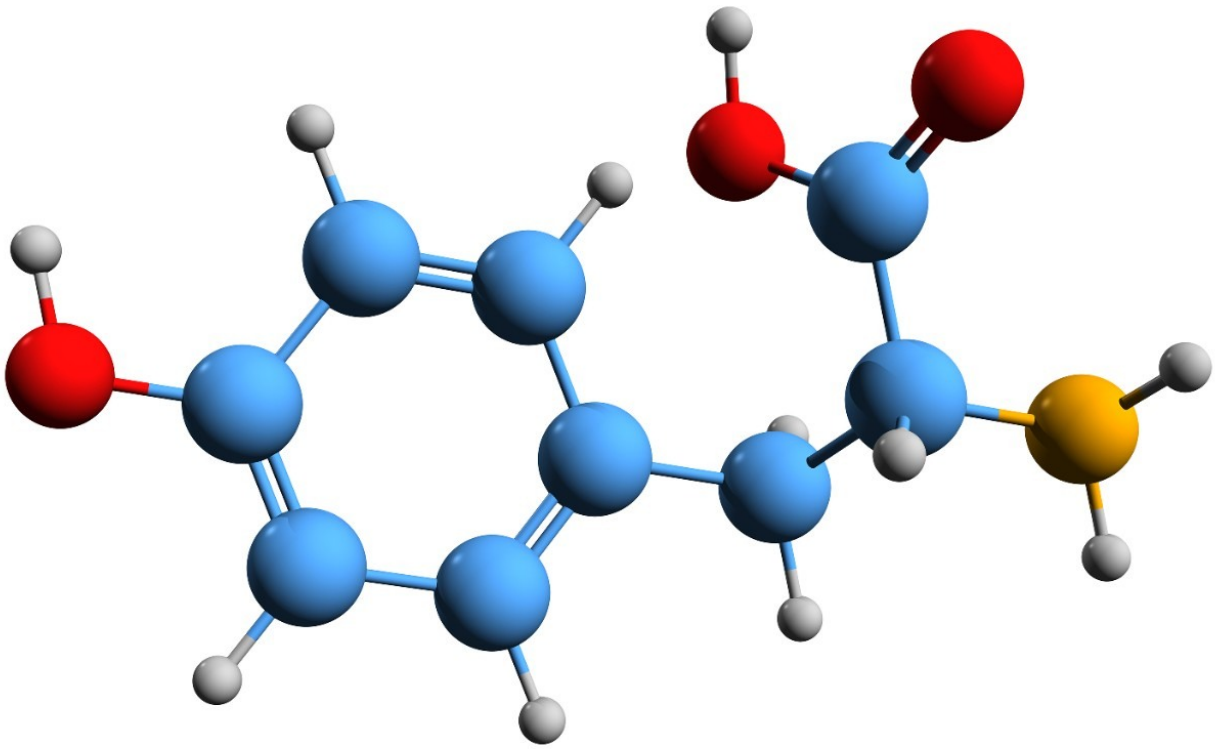
Waters™

應用手冊

Analysis of Catecholamines Using XBridge Shield RP_{18}

Waters Corporation



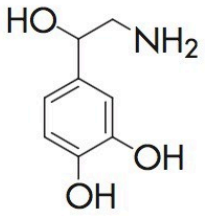
This is an Application Brief and does not contain a detailed Experimental section.

Abstract

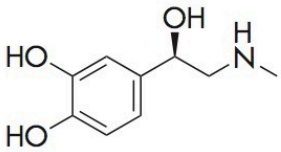
This application brief highlights the analysis of catecholamines using XBridge Shield RP_{18} Columns.

Introduction

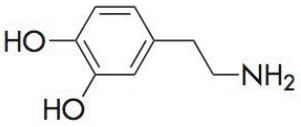
Catecholamines, such as epinephrine (adrenaline), norepinephrine (noradrenaline), and dopamine, are derived from the amino acid tyrosine and act as important hormones or neurotransmitters.



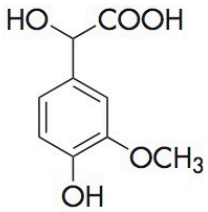
1. Norepinephrine



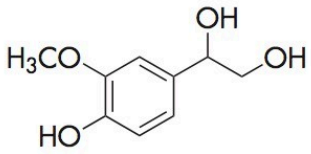
2. Epinephrine



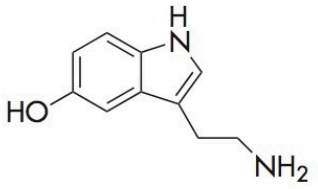
3. Dopamine



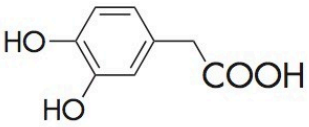
4. VMA



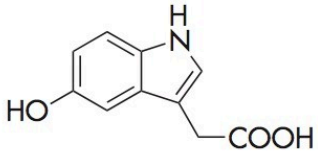
5. MHPG



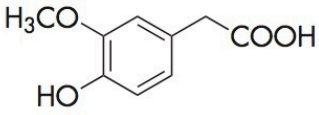
6. Serotonin



7. DOPAC



8. 5-HIAA



9. HVA

Experimental

Test Conditions

Columns:	XBridge Shield RP_{18} 4.6 X 100 mm, 3.5 µm p/n: 186003044
Mobile phase A:	H_2O
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_2O
Temp.:	30 °C
Sampling Rate:	5 points /second
Detection:	UV @ 280 nm
Time Constant:	1.0
Needle Wash:	5/95 MeOH/H_2O
Instrument:	Alliance 2695 with 2996 PDA

Gradient

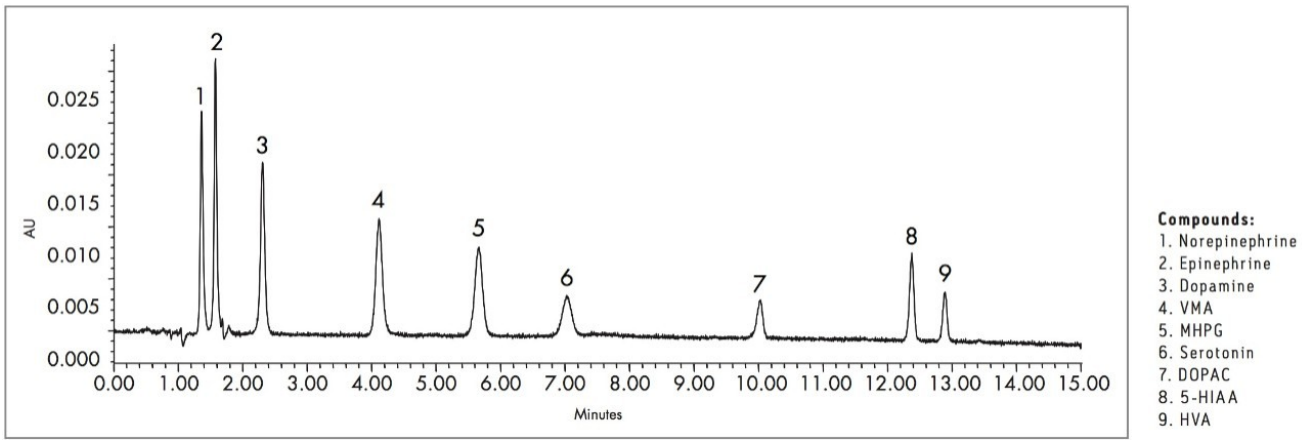
Time(min)	%A	%B	%C
0	90	0	10

Time(min)	%A	%B	%C
5	90	0	10
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



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