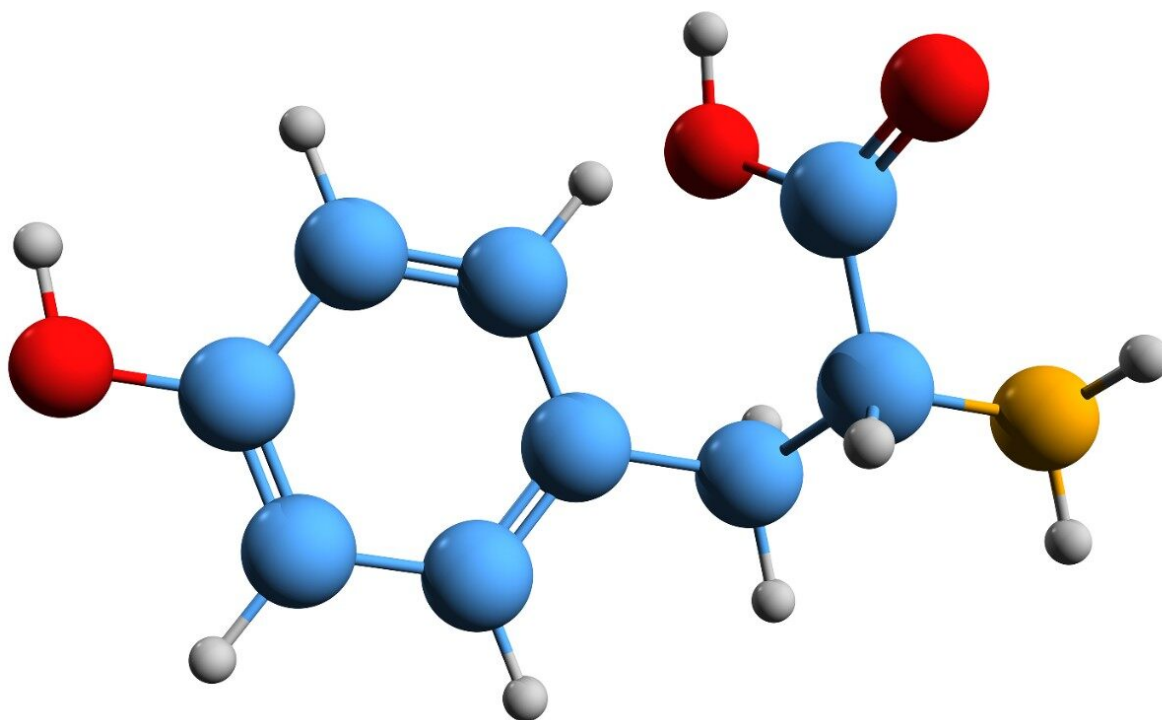


Analysis of Catecholamines Using XBridge Shield RP₁₈

Waters Corporation



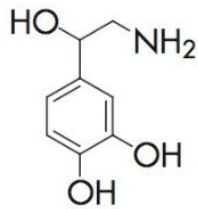
This is an Application Brief and does not contain a detailed Experimental section.

Abstract

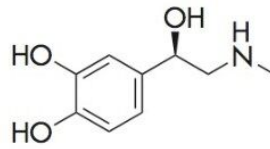
This application brief highlights the analysis of catecholamines using XBridge Shield RP₁₈ Columns.

Introduction

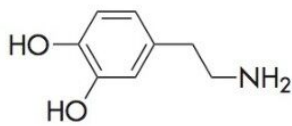
Catecholamines, such as epinephrine (adrenaline), norepinephrine (noradrenaline), and dopamine, are derived from the amino acid tyrosine and act as important hormones or neurotransmitters.



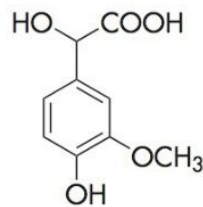
1. Norepinephrine



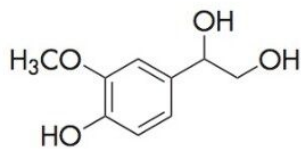
2. Epinephrine



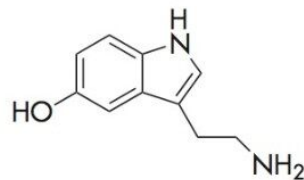
3. Dopamine



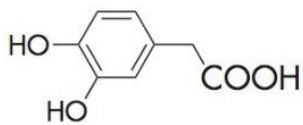
4. VMA



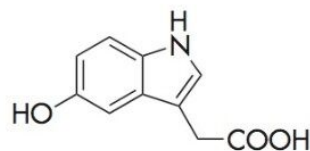
5. MHPG



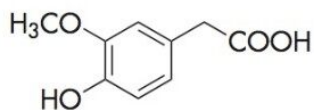
6. Serotonin



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 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

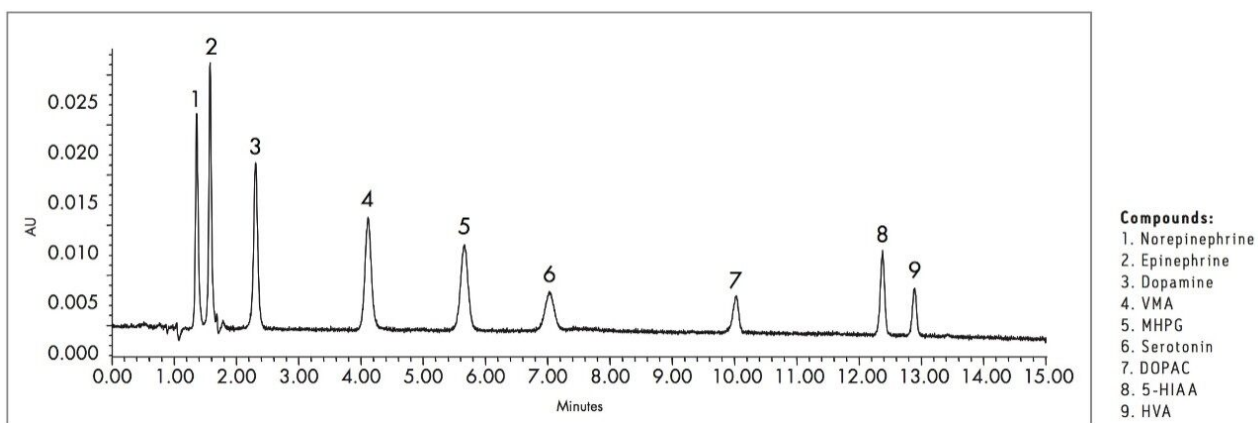
| Time(min) | %A | %B | %C |
|-----------|----|----|----|
| 0 | 90 | 0 | 10 |

| 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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WA60201, June 2007