



Analysis of Beta Blockers Using XBridge Shield RP₁₈

Waters Corporation



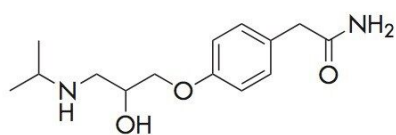
This is an Application Brief and does not contain a detailed Experimental section.

Abstract

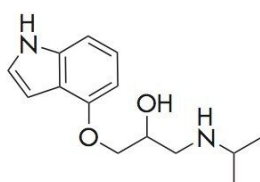
This application brief highlights the analysis of beta blockers using XBridge Shield RP₁₈ Columns.

Introduction

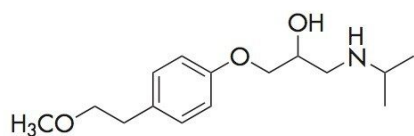
Beta blockers are a class of drugs used for the management of cardiac arrhythmias, congestive heart failure, angina, and cardioprotection after myocardial infarction. They were once commonly prescribed for hypertension, before being replaced by more effective drugs.



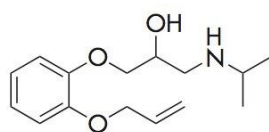
1. Atenolol



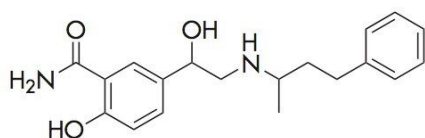
2. Pindolol



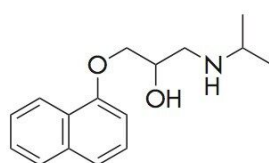
3. Metoprolol



5. Oxprenolol



6. Labetolol



7. Propranolol

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:	MeOH
Mobile phase C:	100 mM NH ₄ HCO ₃ , pH 9.0
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

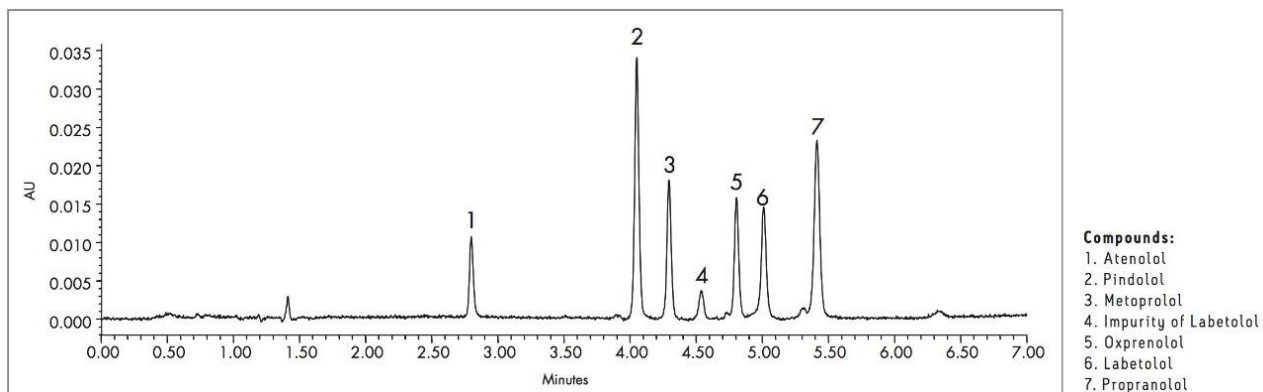
Time(min)	%A	%B	%C
0	85	5	10
3	55	35	10

Time(min)	%A	%B	%C
10	55	35	10
11	85	5	10
15	85	5	10

System Suitability Parameters

	Retention Time (min)	USP Tailing Factor	Width at 4.4%	USP Resolution
Atenolol	2.799	1.14	0.070	
Pindolol	4.051	1.04	0.080	22.81
Metoprolol	4.295	1.02	0.081	4.24
Oxprenolol	4.805	1.07	0.079	8.77
Labetolol	5.011	0.92	0.112	3.27
Propranolol	5.414	1.02	0.102	5.69

Results and Discussion



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