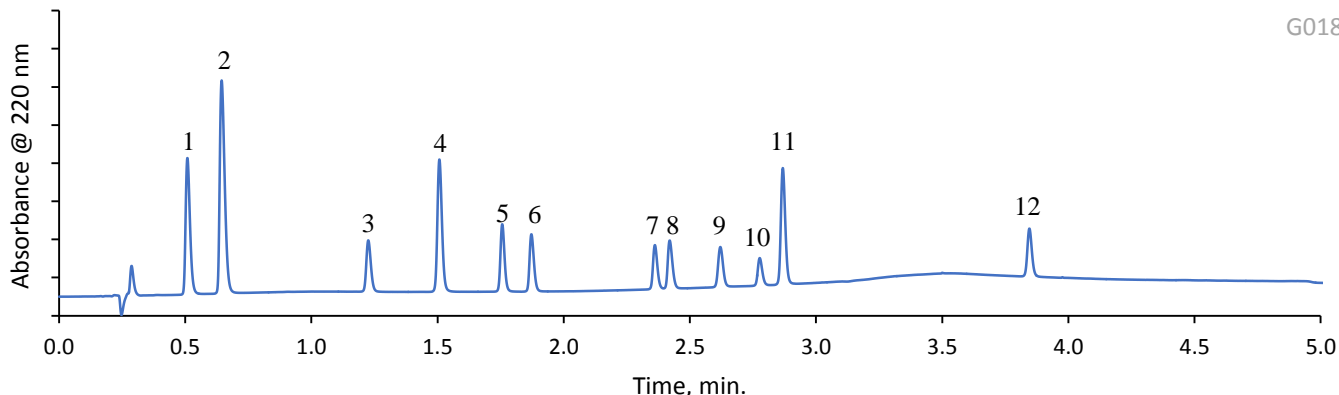


Separation of Beta Blockers on HALO® 2 µm Biphenyl

G0189



TEST CONDITIONS:

Columns: HALO 90 Å Biphenyl, 2 µm, 2.1 x 50mm

Part Number: 91812-411

Mobile Phase A: Water, 0.1% TFA

Mobile Phase B: Acetonitrile, 0.05% TFA

Gradient:

Time	% B
0.0	10
5.0	50

Flow Rate: 0.5 mL/min

Initial Pressure: 272 bar

Temperature: 35°C

Detection: UV 220 nm, PDA

Injection Volume: 1 µL

Sample Solvent: Water

Data Rate: 40 Hz

Response Time: 0.025 sec.

Flow Cell: 1 µL

LC System: Shimadzu Nexera X2

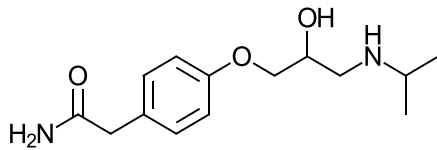
PEAK IDENTITIES:

1. Atenolol
2. Sotalol
3. Nadolol
4. Pindolol
5. Acebutolol
6. Metoprolol
7. Bisoprolol
8. Oxprenolol
9. Labetalol
10. Alprenolol
11. Propranolol
12. Carvedilol

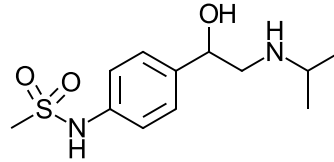
STRUCTURES: (next page)

A mixture of twelve beta blockers is separated on a HALO® 2 µm Biphenyl column with excellent speed and resolution. Beta blockers are mainly used to treat irregular heart beats or complications with the heart such as heart attacks. Beta blockers are also known to help treat high blood pressure.

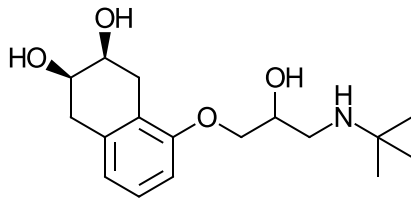
Structures of Beta Blockers



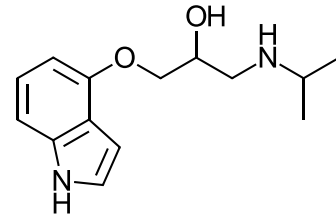
Atenolol



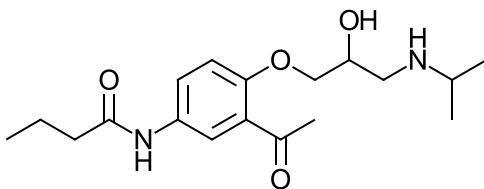
Sotalol



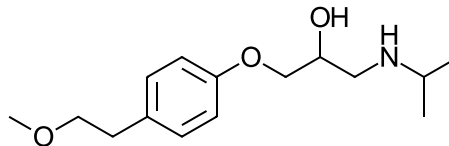
Nadolol



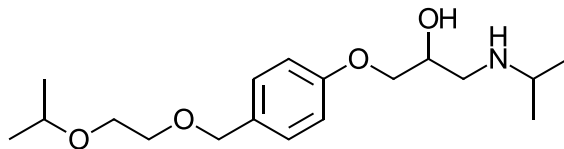
Pindolol



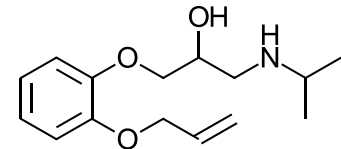
Acebutolol



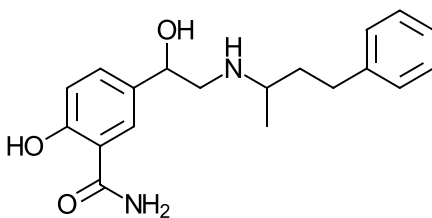
Metoprolol



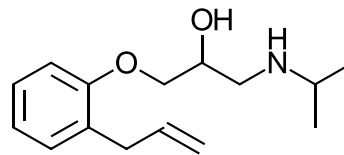
Bisoprolol



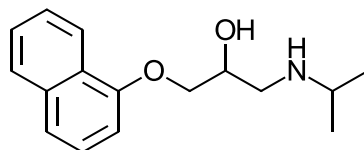
Oxprenolol



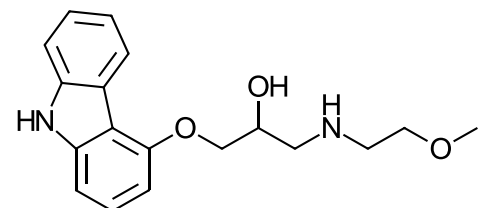
Labetalol



Alprenolol



Propranolol



Carvedilol