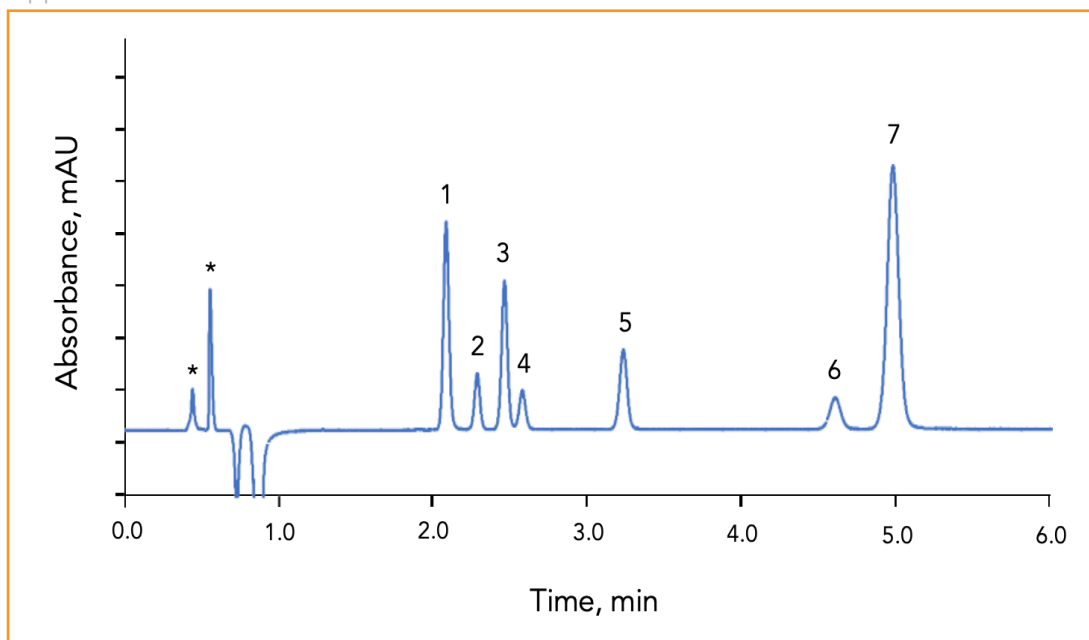




### Separation of Beta Blockers on HALO® Penta-HILIC, 2.0 µm

Application Note 196-B



#### PEAK IDENTITIES:

1. Carvedilol
2. Oxprenolol
3. Propranolol
4. Bisoprolol
5. Pindolol
6. Acebutolol
7. Sotalol

\* artifact peaks from ammonium formate

A mixture of seven beta blockers is rapidly separated on a HALO® 2.0 µm Penta-HILIC column with excellent resolution. Beta blockers are mainly used to treat irregular heartbeats or complications with the heart such as heart attacks. They can also help treat high blood pressure.

#### TEST CONDITIONS:

**Column:** HALO 90 Å Penta-HILIC, 2.0 µm, 2.1 x 100 mm  
**Part Number:** 91812-605  
**Isocratic:** 97/3 acetonitrile/0.1 M ammonium formate, pH 3.0  
**Flow Rate:** 0.5 mL/min  
**Initial Pressure:** 231 bar  
**Temperature:** 25 °C  
**Detection:** UV 220 nm, PDA  
**Injection Volume:** 5.0 µL  
**Sample Solvent:** Acetonitrile  
**Response Time:** 0.025 sec  
**Data Rate:** 40 Hz  
**Flow Cell:** 1.0 µL  
**LC System:** Shimadzu Nexera X2

#### STRUCTURES:

