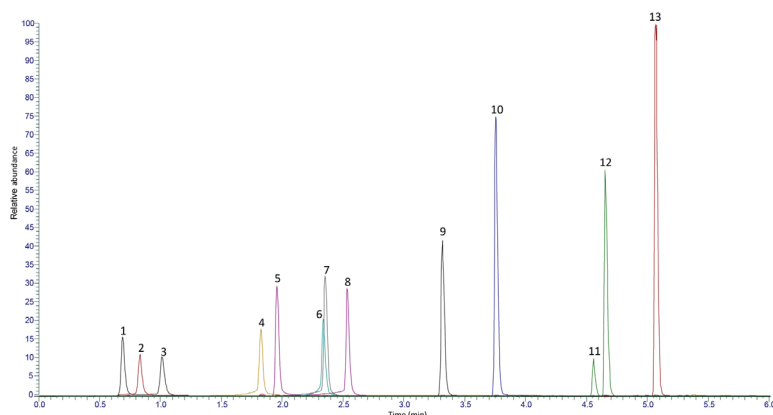


# UHPLC/MS Analysis of Pain Management Opiates on Ascentis Express Biphenyl, 2 $\mu\text{m}$



Peak Number	Compound	Concentration $\mu\text{g/mL}$
1	Morphine (m/z 286)	5
2	Oxymorphone (m/z 302)	5
3	Hydromorphone (m/z 286)	5
4	Naloxone (m/z 328)	10
5	Codeine (m/z 300)	5
6	Naltrexone (m/z 342)	5
7	Oxycodone (m/z 316)	5
8	Hydrocodone (m/z 300)	10
9	cis-Tramadol (m/z 264)	10
10	Meperidine (m/z 248)	5
11	Fentanyl (m/z 337)	5
12	Buprenorphine (m/z 468)	10
13	(+/-) Methadone (m/z 310)	10

## Conditions:

<b>column:</b>	Ascentis Express Biphenyl, 10 cm x 2.1mm, 2 $\mu\text{m}$
<b>mobile phase:</b>	[A] Water (0.1% v/v Formic acid); [B] Acetonitrile (0.1% v/v Formic acid)
<b>gradient:</b>	10% B to 20% B in 2.22 min; 20% B to 60% B in 5.0min; hold at 60% B for 0.5 min.
<b>flow rate:</b>	0.4 mL/min
<b>column temp.:</b>	40 $^{\circ}\text{C}$
<b>detector:</b>	MSD, ESI-(+)
<b>injection:</b>	1 $\mu\text{L}$
<b>sample:</b>	Opiates, varied concentration, 95:5 water:acetonitrile

## Description:

The 2  $\mu\text{m}$  Ascentis Express Biphenyl is an ideal choice for high throughput analysis of drug panels, in which isobaric species separation is needed. Note the resolution between codeine and hydrocodone, (peaks 1 and 3, respectively) and morphine and hydromorphone (peaks 5 and 8, respectively).



## Materials:

Product Part Number	Description
584601-U	Ascentis Express Biphenyl, 10 cm x 2.1 mm I.D., 2.0 $\mu$ m
900682	Water for UHPLC/MS
900667	Acetonitrile for UHPLC/MS
5.33002	Formic acid 98% - 100%
M-005	Morphine Solution, 1 mg/mL, methanol
O-004	Oxymorphone solution, 1 mg/mL, methanol
H-004	Hydromorphone solution, 1 mg/mL, methanol
N-004	Naloxone solution, 1 mg/mL, methanol
C-006	Codeine solution, 1 mg/mL, methanol
N-007	Naltrexone solution, 1 mg/mL, methanol
O-002	Oxycodone solution, 1 mg/mL, methanol
H-003	Hydrocodone solution, 1 mg/mL, methanol
T-027	cis-Tramadol hydrochloride solution, 1 mg/mL, methanol
M-035	Meperidine solution, 1 mg/mL, methanol
F-013	Fentanyl solution, 1 mg/mL, methanol
B-044	Buprenorphine solution, 1 mg/mL, methanol
M-007	( $\pm$ )-Methadone solution, 1 mg/mL, methanol