

# APPLICATIONS

## 50 Drugs in Less than Two Minutes: Ballistic Comprehensive Drug Research Panel using MercuryMS™ Cartridge System

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### Introduction

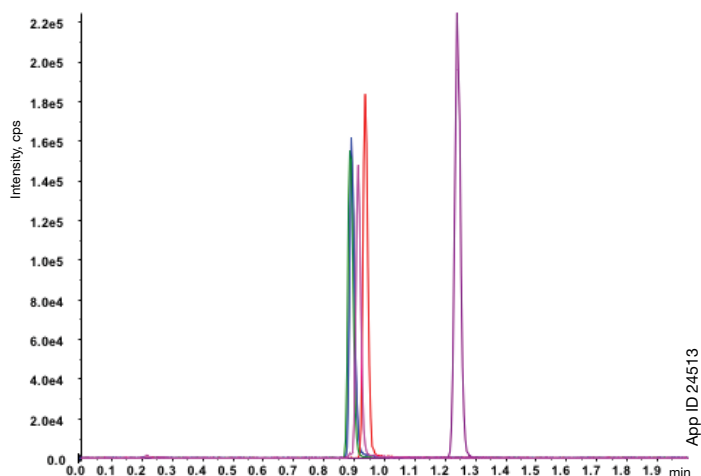
Using a ballistic gradient and a small 20 x 4.0 mm Kinetex<sup>®</sup> Biphenyl cartridge in a MercuryMS holder, we are able to screen 50 drugs in less than 2 minutes. This includes relatively good resolution on isobars such as naloxone and 6-MAM, fluoxetine and methadone, codeine and hydromorphone, and more.

### LC-MS/MS Conditions

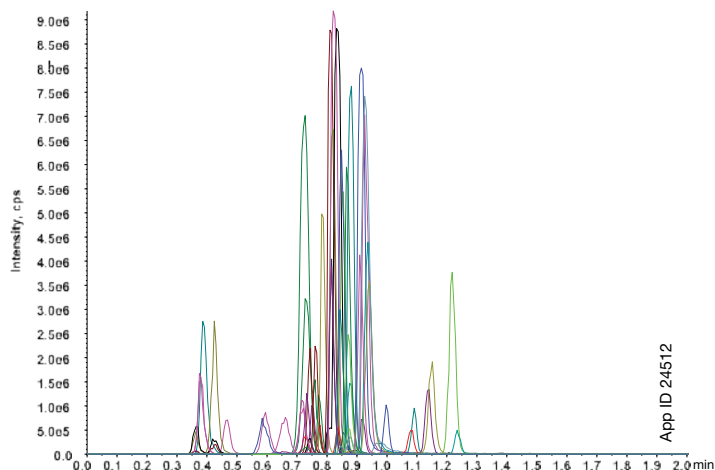
<b>Column:</b>	Kinetex 2.6 µm Biphenyl*
<b>Dimensions:</b>	20 x 4.0 mm
<b>Part No.:</b>	00M-4622-D0-CE
<b>Mobile Phase:</b>	A: 0.1% Formic acid in Water B: 0.1% Formic acid in Methanol
<b>Gradient:</b>	<b>Time (min)</b> <b>% B</b>
	0                    30
	0.1                95
	0.8                95
	0.81              30
	2                    30
<b>Injection:</b>	10 µL
<b>Flow Rate:</b>	0.8 mL/min
<b>Temperature:</b>	Ambient
<b>Detection Mode:</b>	ESI(+) and ESI(-) separately
<b>Detection:</b>	MS/MS (SCIEX Triple Quad™ 4500)

\*requires MercuryMS holder

**Figure 2.**  
**XIC of Negative Mode Panel**



**Figure 1.**  
**XIC of Positive Mode Panel**



Revision: 0  
PHEN-RUO-00008



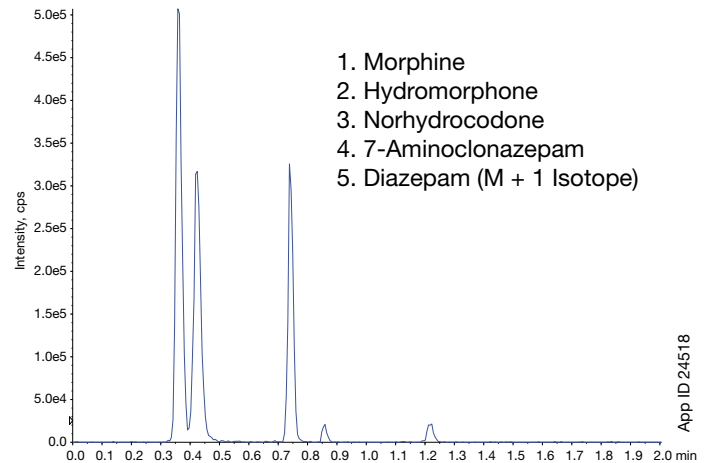
**Table 1.**  
List of Positive Mode Panel Analytes

Analyte	Retention Time (min)	Analyte	Retention Time (min)
6-MAM	0.73	Meprobamate	0.85
7-Aminoclonazepam	0.80	Methadone	0.97
Alprazolam	1.15	Methamphetamine	0.73
Amitriptyline	0.94	Methylphenidate	0.83
Amphetamine	0.58	Morphine	0.36
$\alpha$ -OH-Alprazolam	1.08	Naloxone	0.66
Benzoyllecgonine	0.85	Norbuprenorphine	0.85
Buprenorphine	0.87	Nordiazepam	1.09
Carisoprodol	0.92	Norfentanyl	0.82
Citalopram	0.87	Norhydrocodone	0.74
Cocaine	0.84	Noroxycodone	0.72
Codeine	0.73	Nortriptyline	0.93
Cotinine	0.39	O-Desmethyl-cis-tramadol	0.73
Diazepam	1.22	Oxycodone	0.73
EDDP	0.94	Oxymorphone	0.38
Fentanyl	0.88	Paroxetine	0.91
Fluoxetine	0.87	PCP	0.91
Gabapentin	0.59	Pregabalin	0.47
Hydrocodone	0.78	Ritalinic Acid	0.81
Hydromorphone	0.43	Tapentadol	0.81
Imipramine	0.93	Temazepam	1.14
Lorazepam	1.00	THC-COOH	1.23
MDA	0.75	Tramadol	0.82
MDMA	0.79	Zolpidem	0.88
Meperidine	0.84	Zolpidem Phenyl-4-Carboxy	0.82

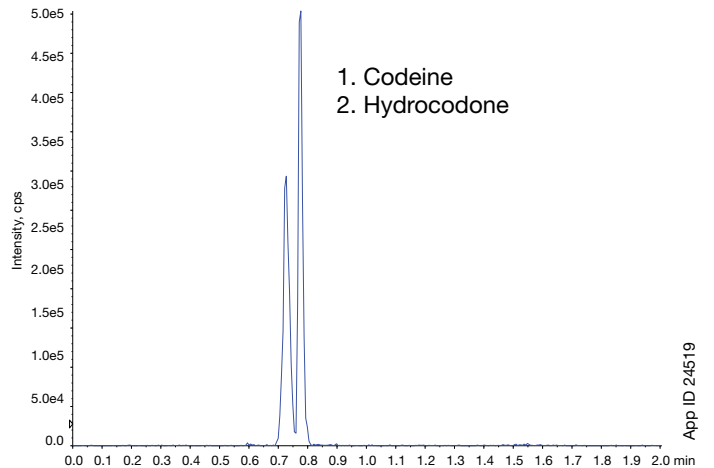
**Table 2.**  
List of Negative Mode Analytes

Compound	Retention Time (min)
Amobarbital	0.89
Butalbital	0.89
Phenobarbital	0.91
Secobarbital	0.94
THC-COOH	1.24

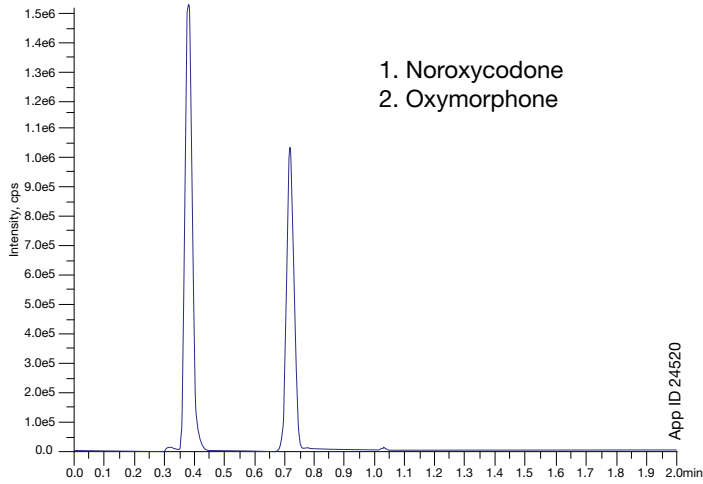
**Figure 3.**  
Morphine Isomers/Isobars on Kinetex<sup>®</sup> Biphenyl in MercuryMS Cartridge Format



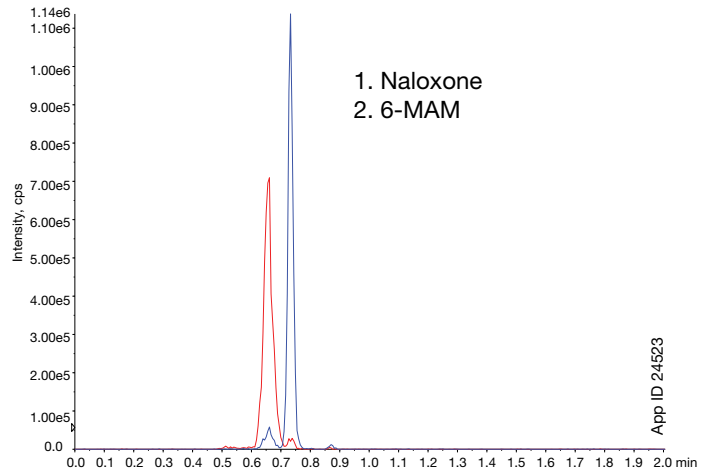
**Figure 4.**  
Codeine/Hydrocodone on Kinetex Biphenyl in MercuryMS Cartridge Format



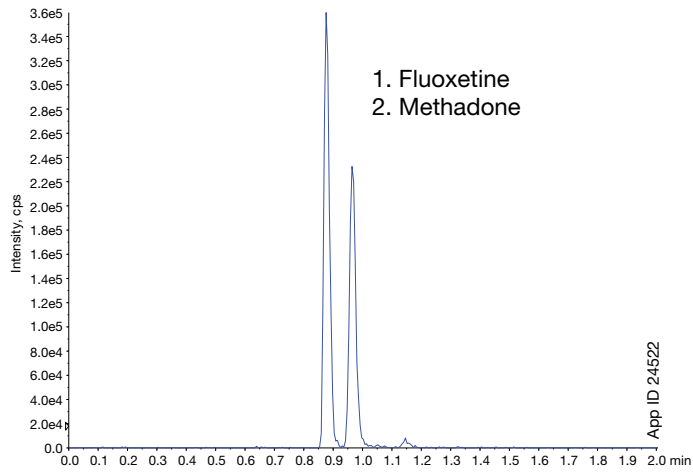
**Figure 5.**  
Noroxycodone/Oxymorphone on Kinetex<sup>®</sup> Biphenyl in MercuryMS<sup>™</sup> Cartridge



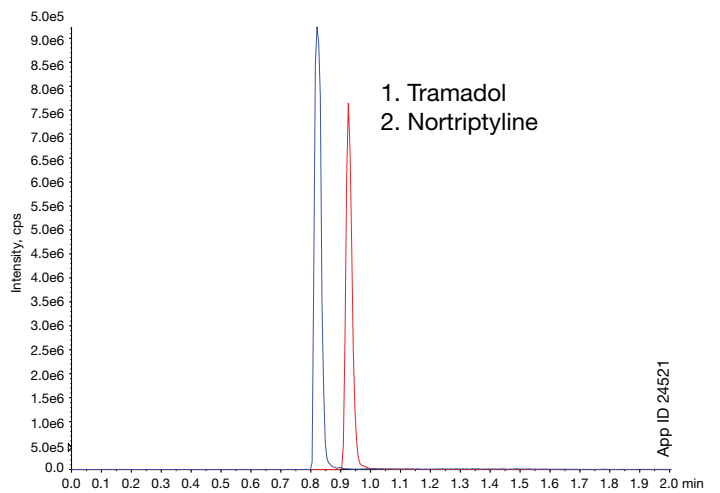
**Figure 6.**  
Naloxone/6-Monoacetyl Morphine (6-MAM) on Kinetex Biphenyl in MercuryMS Cartridge



**Figure 7.**  
Fluoxetine/Methadone on Kinetex Biphenyl in MercuryMS Cartridge



**Figure 8.**  
Tramadol/Nortriptyline on Kinetex<sup>®</sup> Biphenyl in MercuryMS Cartridge



# APPLICATIONS

## Ordering Information

Kinetex <sup>®</sup> 2.6µm Biphenyl Cartridge		
20 x 2.0 mm	20 x 4.0 mm	MercuryMS <sup>™</sup> Holder
00M-4622-D0-CE	00M-4622-B0-CE	CHO-5845

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