

APPLICATION

Separation of 12 Natural Cannabinoids Using a Kinetex[®] Polar C18 Column Under Methanol and Acetonitrile Conditions



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Overview

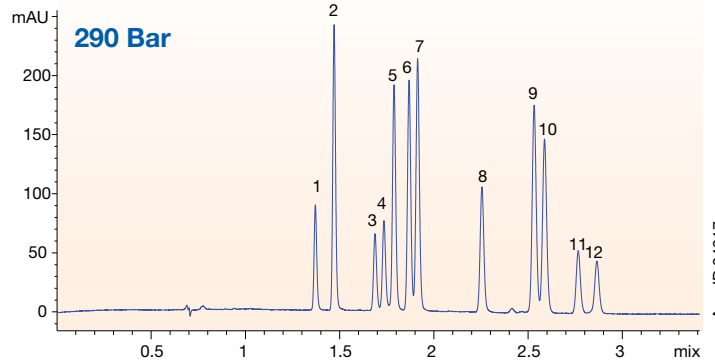
Recently there has been an increased focus on the analysis of natural cannabinoids. Several classes of cannabinoids exist, each with different physical and psychoactive effects. The amount of each cannabinoid present varies with each strain of cannabis, thus making accurate quantitation very important. Additionally, as the cannabinoids are subsequently added to different matrices, the resulting analytical methods must offer appropriate solvent recommendations to ensure that unwanted precipitation doesn't occur. By utilizing a high performance Kinetex 2.6µm Polar C18 column, we've achieved two fast and effective cannabinoid separations using either Acetonitrile or Methanol as the organic strong solvent, alongside a high resolution methanol method at neutral pH and a low pressure acetonitrile method. This allows analytical scientists to choose the appropriate solvent system based on their sample set, while also allowing them to utilize either UHPLC or HPLC instrumentation.

Rapid Analysis

Peak	Analyte	Acetonitrile Retention Time	Methanol Retention Time
1	CBDV-A	1.371	1.569
2	CBDV	1.47	1.497
3	CBD-A	1.688	1.856
4	CBGA	1.735	2.044
5	CBG	1.789	1.744
6	CBD	1.868	1.789
7	THC-V	1.914	1.952
8	CBN	2.255	2.251
9	D9-THC	2.532	2.494
10	D8-THC	2.587	2.591
11	CBC	2.766	2.731
12	THC-A	2.865	3.392

Acetonitrile Mobile Phase

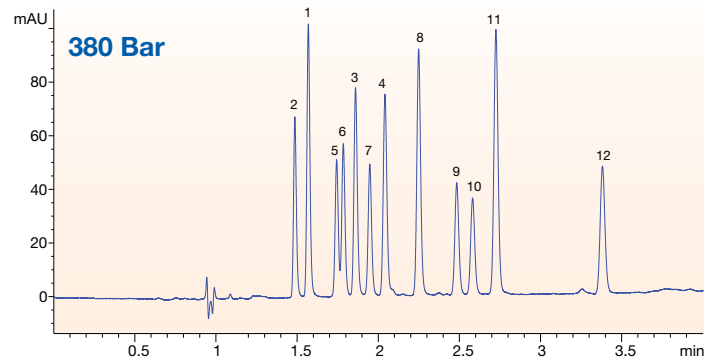
Column: Kinetex 2.6µm Polar C18
Dimensions: 150 x 4.6 mm
Part No.: 00F-4759-E0
Mobile Phase: A: Water with 0.1% H₃PO₄
B: Acetonitrile with 0.1% H₃PO₄
Gradient: 75% B to 100% B in 6 min
Injection Volume: 0.5 µL
Flow Rate: 1.8 mL/min
Temperature: 50 °C
Detection: UV @ 210 nm



App ID 24217

Methanol Mobile Phase

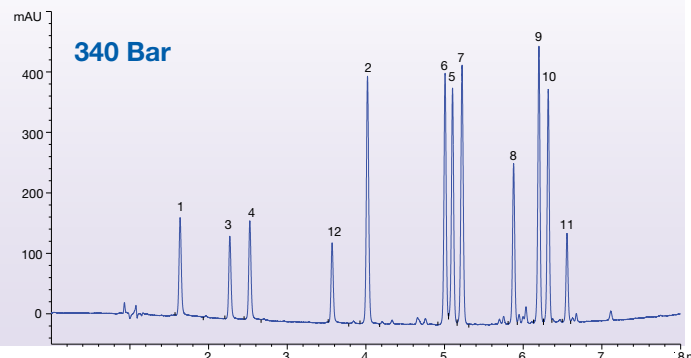
Column: Kinetex 2.6µm Polar C18
Dimensions: 150 x 4.6 mm
Part No.: 00F-4759-E0
Mobile Phase: A: Water with 0.1% H₃PO₄
B: Methanol
Gradient: 85% B to 100% B in 6 min
Injection Volume: 1 µL
Flow Rate: 1.5 mL/min
Temperature: 50 °C
Detection: UV @ 210 nm



App ID 24218

Methanol Mobile Phase

Column: Kinetex 2.6µm Polar C18
Dimensions: 100 x 4.6 mm
Part No.: 00D-4759-E0
Mobile Phase: A: 20 mM Potassium Phosphate (pH 7)
B: Methanol
Gradient: 65% B to 100% B in 6 min
Injection Volume: 0.5 µL
Flow Rate: 0.9 mL/min
Temperature: 25 °C
Detection: UV @ 210 nm



App ID 24274

High Resolution Analysis



APPLICATION

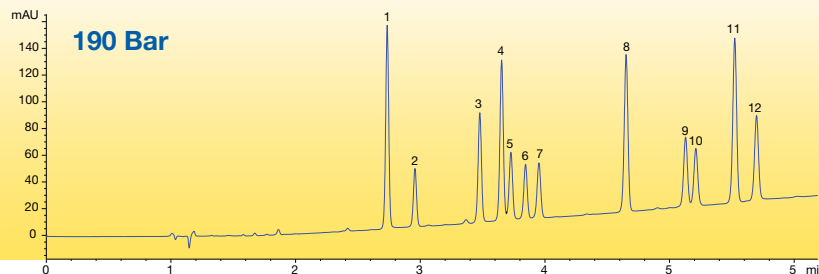
Low Pressure Analysis

Acetonitrile Mobile Phase

Column: Kinetex 2.6 µm Polar C18
 Dimensions: 150 x 4.6 mm
 Part No.: 00F-4759-E0

Mobile Phase: A: Water with 0.1% TFA
 B: Acetonitrile with 0.1% TFA
 Gradient: 70% B to 100% B in 6 min

Injection Volume: 1 µL
 Flow Rate: 1.2 mL/min
 Temperature: 35 °C
 Detection: UV @ 210 nm



App ID 24277

Kinetex Ordering Information

2.6 µm Minibore Columns (mm)					SecurityGuard [™] ULTRA Cartridges [‡]
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
Polar C18	00A-4759-AN	00B-4759-AN	00D-4759-AN	00F-4759-AN	AJ0-9532 for 2.1 mm ID

2.6 µm MidBore [™] Columns (mm)					SecurityGuard [™] ULTRA Cartridges [‡]
Phases	30 x 3.0	50 x 3.0	100 x 3.0	150 x 3.0	3/pk
Polar C18	—	00B-4759-Y0	00D-4759-Y0	00F-4759-Y0	AJ0-9531 for 3.0 mm ID

2.6 µm Analytical Columns (mm)					SecurityGuard [™] ULTRA Cartridges [‡]
Phases	30 x 4.6	50 x 4.6	100 x 4.6	150 x 4.6	3/pk
Polar C18	—	00B-4759-E0	00D-4759-E0	00F-4759-E0	AJ0-9530 for 4.6 mm ID

[‡] SecurityGuard ULTRA Cartridges require holder, Part No.: AJ0-9000.

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Phenomenex products are available worldwide. For the distributor in your country, contact Phenomenex USA, International Department at international@phenomenex.com



If Kinetex analytical columns do not provide at least an equivalent separation as compared to a competing column of the same particle size, similar phase and dimensions, return the column with comparative data within 45 days for a FULL REFUND.

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