

Rapid Analysis of Mitragynine and 7-Hydroxy (7-OH) Mitragynine from Raw Materials by HPLC-UV

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Overview

Mitragyna speciosa (kratom) leaves are used in herbal formulations for their stimulating effects. The leaves contain the active components indole alkaloids mitragynine and 7-hydroxy (7-OH) mitragynine.

An HPLC application was developed, optimized, and validated using single-laboratory validation guidelines to quantify mitragynine in kratom raw materials and finished products. The separation of the mitragynine alkaloids was achieved in 18 min with a Kinetex[®] EVO C18 core-shell column using gradient separation with ammonium bicarbonate (pH 9.5) and acetonitrile. This method is suitable for the quantification of indole alkaloids mitragynine and 7-OH mitragynine in single-component preparations or in beverages containing proprietary blends of herbs.

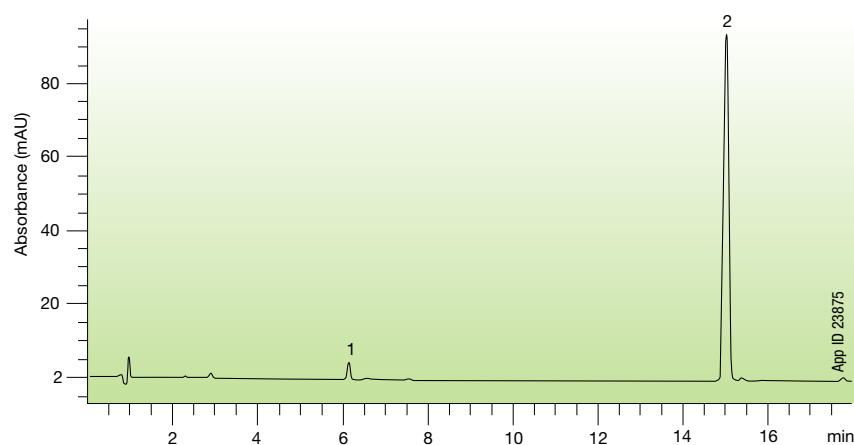
Acknowledgement

We would like to provide special thanks to Paula Brown and Elizabeth Mudge from BC Institute of Technology for contributing this application

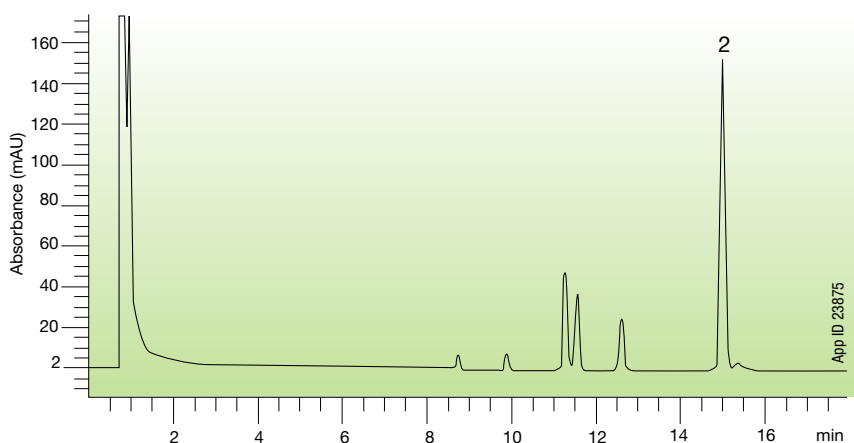
Reference:

1. For complete publication, please refer to: "Determination of Mitragynine in Mitragyna speciosa Raw Materials and Finished Products by Liquid Chromatography with UV Detection: Single-Laboratory Validation" in Journal of AOAC International Vol. 100, No. 1, 2017

Mitragynine and 7-OH mitragynine alkaloids in a standard mixture¹.



Mitragynine alkaloids in raw materials¹.



Column: Kinetex 5 µm EVO C18 100Å
Dimensions: 150 x 4.6 mm
Part No.: 00F-4633-E0
Mobile Phase: A: 5.0 mM Ammonium bicarbonate (pH 9.5)
 B: Acetonitrile
Gradient:

Time (min)	B (%)
0	30
17	70
17.9	70
18	30

Flow Rate: 1.5 mL/min
Injection Volume: 5 µL
Temperature: Ambient, 25 °C
Detection: UV @ 226 nm
Analytes: 1. 7-OH Mitragynine
 2. Mitragynine



APPLICATION

Ordering Information

Kinetex[®] EVO C18 Core-Shell LC Columns

5 µm Minibore Columns (mm)				SecurityGuard [™] ULTRA Cartridges [†]
30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
00A-4633-AN	00B-4633-AN	00D-4633-AN	00F-4633-AN	AJO-9298
for 2.1 mm ID				

5 µm MidBore [™] Columns (mm)			SecurityGuard [™] ULTRA Cartridges [†]
50 x 3.0	100 x 3.0	150 x 3.0	3/pk
00B-4633-YO	00D-4633-YO	00F-4633-YO	AJO-9297
for 3.0 mm ID			

5 µm Analytical Columns (mm)				SecurityGuard [™] ULTRA Cartridges [†]
50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	3/pk
00B-4633-E0	00D-4633-E0	00F-4633-E0	00G-4633-E0	AJO-9296
for 4.6 mm ID				

2.6 µm Minibore Columns (mm)				SecurityGuard [™] ULTRA Cartridges [†]
30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
00A-4725-AN	00B-4725-AN	00D-4725-AN	00F-4725-AN	AJO-9298
for 2.1 mm ID				

2.6 µm MidBore [™] Columns (mm)			SecurityGuard [™] ULTRA Cartridges [†]
50 x 3.0	100 x 3.0	150 x 3.0	3/pk
00B-4725-YO	00D-4725-YO	00F-4725-YO	AJO-9297
for 3.0 mm ID			

2.6 µm Analytical Columns (mm)				SecurityGuard [™] ULTRA Cartridges [†]
50 x 4.6	100 x 4.6	150 x 4.6	3/pk	
00B-4725-E0	00D-4725-E0	00F-4725-E0	AJO-9296	
for 4.6 mm ID				

1.7 µm Minibore Columns (mm)			SecurityGuard [™] ULTRA Cartridges [†]
50 x 2.1	100 x 2.1	150 x 2.1	3/pk
00B-4726-AN	00D-4726-AN	00F-4726-AN	AJO-9298
for 2.1 mm ID			

[†] SecurityGuard ULTRA Cartridges require holder, Part No.: AJO-9000

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