

Quick and easy separation of cannabidiol and melatonin

Cannabidiol (CBD) is a non-psychoactive cannabinoid which has an easing, anti-inflammatory and anti-anxiety effect and is used to ease nausea. Melatonin is a hormone from serotonin and controls the day-night rhythm. For this reason, an American customer was interested in developing a sleeping aid containing both ingredients. Therefore, YMC was asked to develop a simplified method for the quantitative analysis of CBD and melatonin at a ratio of 5:1.

Due to its versatile column chemistry YMC-Triart C18 columns are the perfect starting point for method development.

The high lot-to-lot reproducibility of YMC-Triart C18 will ensure accurate results which is important for quality control.

This application note shows how to obtain a fast separation of CBD and melatonin with excellent peak shapes. The analysis is performed in only 7 minutes under gradient conditions using an YMC-Triart C18 HPLC column with 3 μ m particles. The sample was prepared from 1 mg/mL stock solutions of melatonin (diluted in acetonitrile/water 45/55) and CBD (in acetonitrile) at concentrations of 0.05 mg/mL CBD and 0.01 mg/mL melatonin.

Table 1: chromatographic conditions

Column:	YMC-Triart C18 (3 μ m) 150 x 4.6 mm ID
Part no.:	TA12S03-1546PTH
Eluent:	A) water B) acetonitrile
Gradient:	55 % B (0–1 min), 55 – 95 % B (1–3 min), 95 % B (3–7 min), 95–55 % B (7–7.5 min), 55 % B (7.5–10 min)
Flow rate:	1.0 mL/min
Temperature:	40 °C
Detection:	UV: 225 nm
Injection:	15 μ L
HPLC System:	Agilent 1260

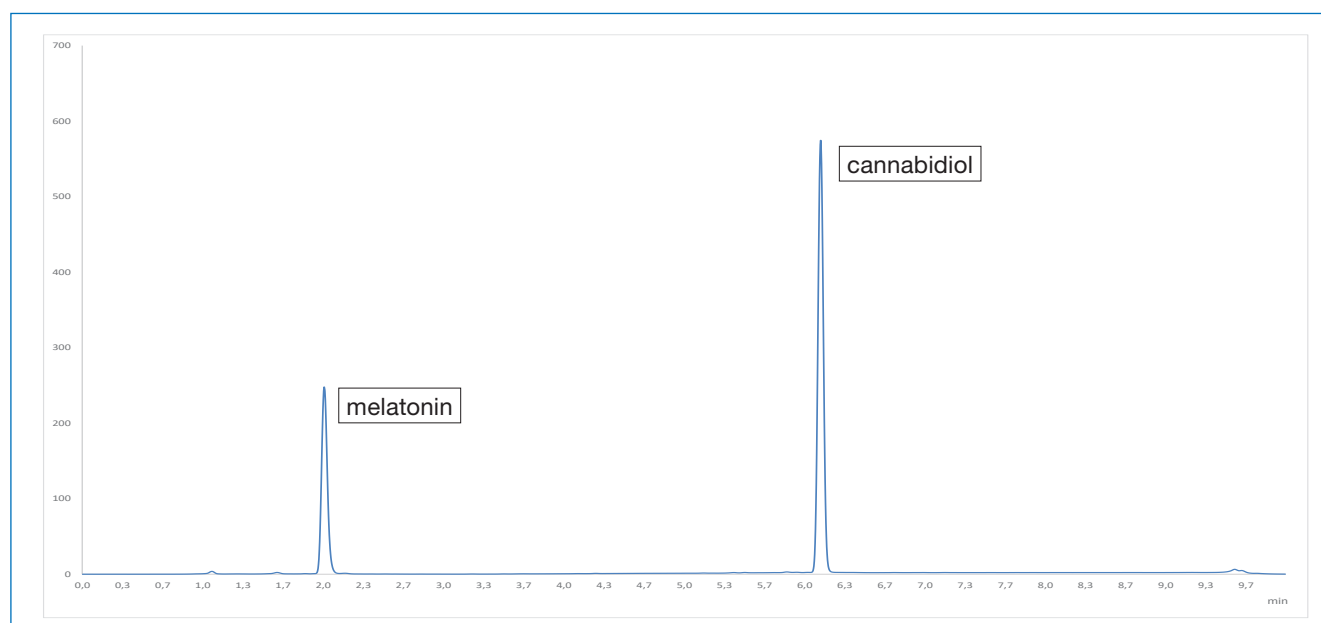


Figure: Separation of melatonin (RT: 2.0 min) and cannabidiol (RT: 6.1 min).*

*courtesy of YMC America, Inc.