



## Separation of 11 common cannabinoids using YMC-Triart C18

Until recently, cannabis and its derivatives were widely restricted under legislation which stated they had no medical value and carried a substantial risk of misuse. Policy is rapidly changing, and cannabis can now be prescribed for medicinal use in many countries across Europe. This provides important new opportunities for treating patients although these need to be weighed up against potential risks. Several different medicinal products exist, with contrasting mechanisms of action, efficacy, and safety. Use of these products may increase as new evidence arises and policy changes occur. Certified medicinal cannabis is currently used for the treatment of a number of conditions, including multiple sclerosis, epilepsy, neuropathic pain, arthritis, depression, anxiety

disorders, sleep disorders, psychosis, glaucoma and Tourette's syndrome. It is also used for the relief of symptoms such as nausea and vomiting as a result of chemotherapy, and appetite stimulation in patients suffering from HIV and AIDS.

The cannabinoids form a group of related compounds found in cannabis sativa L, of which over 144 have currently been identified and which exhibit varied effects. THC is generally accepted to be the compound that possesses the psychoactive properties.

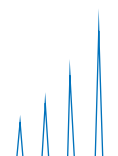
This application note shows how to separate a mixture of 11 of the most common cannabinoids using the robust and reproducible YMC-Triart C18 column. The list of compounds used is:

- Cannabivarin (CBV)
- Cannabidiolic acid (CBDA)
- Cannabigerol (CBG)
- Cannabidiol (CBD)
- Tetrahydrocannabivarin (THCV)
- Cannabinol (CBN)
- Delta-9-tetrahydrocannabinol ( $\Delta^9$ -THC)
- Delta-8-tetrahydrocannabinol ( $\Delta^8$ -THC)
- Cannabicyclol (CBL)
- Cannabichromene (CBC)
- Tetrahydrocannabinolic acid (THCA)

HPLC separations of cannabinoids has always proved as challenging due to the similar molecular structures and chemical properties of these compounds. YMC-Triart C18 provides the right selectivity to separate these 11 most common cannabinoids.

### Chromatographic conditions

Column:	YMC-Triart C18 (3 $\mu$ m, 12 nm), 150 x 4.6 mm ID
Part No:	TA12S03-1546PTH
Eluent:	A) 0.1 % formic acid in water B) 0.1 % formic acid in acetonitrile
Gradients:	75–80 % B (0–20 min)
Flow rate:	1.0 mL/min
Sample:	11 cannabinoids each 0.05 mg/mL diluted with acetonitrile/water (75/25)
Temperature:	35 °C
Injection:	10 $\mu$ L
Detection:	UV at 220 nm



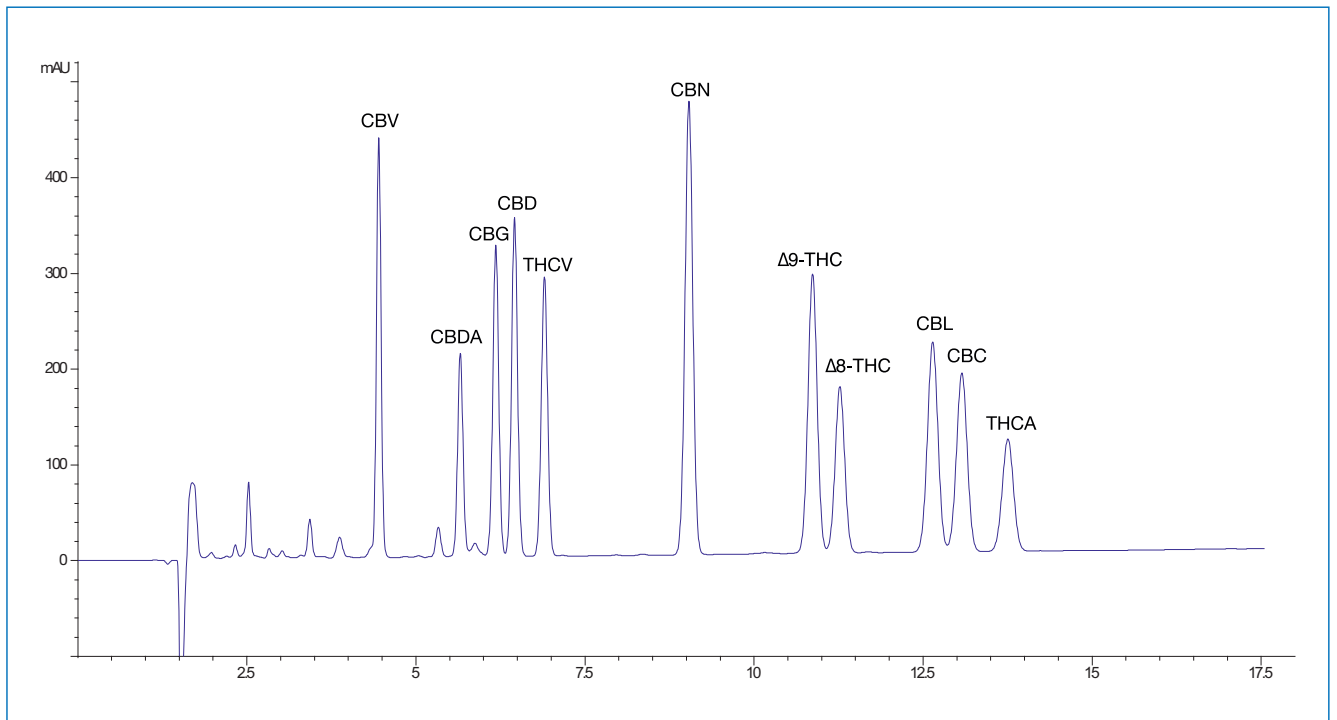


Figure 1: Separation of 11 cannabinoids with gradient elution.

\*Application data by courtesy of YMC America, Inc.

