NQAC
Nestlé Quality Assurance Center
Dublin

Technical Datasheet

Analysis Name: Cannabinoids in Food and Raw Materials by LC-MS/MS

Method Number: LI-00.100 (for food/finished products)
LI-00.100_RM (for raw materials)

Scope of Application: Finished products containing hemp protein, seed, and oil as well as, hemp plant, oil and oil concentrate, and gummy-based vitamins. Additional matrix types may be analyzed; however, if they do not meet the acceptance criteria established by the matrices that are validated then the matrix will be considered not compatible with this method or an increased quantitation limit may be reported.

Note: Highly concentrated CBD products exceeding 30% CBD are not suitable for this method as it is designed to remove food and oil interferences. High level CBD concentrations will saturate the extract and may give erroneously low results.

This method is not accredited to ISO 17025. Validation data & measurement uncertainty may not be available. To request the analysis, please contact US: NQAC Customer Service for current cost and estimated Turn-Around-Time. Please be aware that TAT may change after submission due to supply chain and/or operational variables.

Description: An in-house method for the quantitative determination of as many as fourteen (14) cannabinoids in by liquid chromatography tandem mass spectrometry (LC-MS/MS). The procedure encompasses an extraction with acetonitrile. Phase separation is achieved with a mixture of salts. The resulting extract is diluted and centrifuged prior to LC-MS/MS analysis in scheduled multiple reaction monitoring (MRM) mode by electrospray ionization (ESI). Quantitation is performed via external calibration and an internal standard (IS). The limit of quantitation (LOQ) for each cannabinoid may vary based on matrix type.

Sample Weight Required: 1 to 100 g, variable depending on matrix type.
Portion received for analysis must be representative of entire sample.

Analytical Platform: LC-MS/MS

Finished Products (Foods) Containing Hemp			
Analyte Reported	**Alias**	**Unit of Measure**	**Quantitation Range**
Cannabichromene	CBC	mg/kg	0.150 – 10.00
Cannabichromenic acid	CBCA	mg/kg	0.150 – 10.00
Cannabidiol	CBD	mg/kg	0.150 – 10.00
Cannabidiolic acid	CBDA	mg/kg	0.150 – 10.00
Cannabidivarin	CBDV	mg/kg	0.150 – 10.00
Cannabidivarininc acid	CBDVA	mg/kg	0.150 – 10.00
Cannabigerol	CBG	mg/kg	0.150 – 10.00
Cannabigerolic acid	CBGA	mg/kg	0.150 – 10.00
Cannabinol	CBN	mg/kg	0.150 – 10.00
Tetrahydrocannabivarin	THCV	mg/kg	0.150 – 10.00
Delta9-Tetrahydrocannabivarin acid	THCVA	mg/kg	0.150 – 10.00
Delta8-Tetrahydrocannabinol	Delta8-THC	mg/kg	0.150 – 10.00
Delta9-Tetrahydrocannabinol	Delta9-THC	mg/kg	0.150 – 10.00
Delta9-Tetrahydrocannabinolic acid	THCA-A	mg/kg	0.150 – 10.00
Finished Products (Oils) Containing Hemp			
Analyte Reported	**Alias**	**Unit of Measure**	**Quantitation Range**
Cannabichromene	CBC	mg/kg	0.600 – 40.00
Cannabichromenic acid	CBCA	mg/kg	0.600 – 40.00
Cannabidiol	CBD	mg/kg	0.600 – 40.00
Cannabidiolic acid	CBDA	mg/kg	0.600 – 40.00
Cannabidivarin	CBDV	mg/kg	0.600 – 40.00
Cannabidivarininc acid	CBDVA	mg/kg	0.600 – 40.00
Cannabigerol	CBG	mg/kg	0.600 – 40.00
Cannabigerolic acid	CBGA	mg/kg	0.600 – 40.00
Cannabinol	CBN	mg/kg	0.600 – 40.00
Tetrahydrocannabivarin	THCV	mg/kg	0.600 – 40.00
Delta9-Tetrahydrocannabivarin acid	THCVA	mg/kg	0.600 – 40.00
Delta8-Tetrahydrocannabinol	Delta8-THC	mg/kg	0.600 – 40.00

Delta9-Tetrahydrocannabinol	Delta9-THC	mg/kg	0.600 – 40.00
Delta9-Tetrahydrocannabinolic acid	THCA-A	mg/kg	0.600 – 40.00

Raw Materials-Hemp Plant and Hemp Oil			
Analyte Reported	**Alias**	**Unit of Measure**	**Quantitation Range**
Cannabichromene	CBC	mg/g (%)	0.3 (0.03) – 300 (30)
Cannabichromenic acid	CBCA	mg/g (%)	0.3 (0.03) – 300 (30)
Cannabidiol	CBD	mg/g (%)	0.3 (0.03) – 300 (30)
Cannabidiolic acid	CBDA	mg/g (%)	0.3 (0.03) – 300 (30)
Cannabidivarin	CBDV	mg/g (%)	0.3 (0.03) – 300 (30)
Cannabidivarininc acid	CBDVA	mg/g (%)	0.3 (0.03) – 300 (30)
Cannabigerol	CBG	mg/g (%)	0.3 (0.03) – 300 (30)
Cannabigerolic acid	CBGA	mg/g (%)	0.3 (0.03) – 300 (30)
Cannabinol	CBN	mg/g (%)	0.3 (0.03) – 300 (30)
Tetrahydrocannabivarin	THCV	mg/g (%)	0.3 (0.03) – 300 (30)
Delta 9-Tetrahydrocannabivarin acid	THCVA	mg/g (%)	0.3 (0.03) – 300 (30)
Delta 8-Tetrahydrocannabinol	Delta 8-THC	mg/g (%)	0.3 (0.03) – 300 (30)
Delta9-Tetrahydrocannabinol	Delta 9-THC	mg/g (%)	0.3 (0.03) – 300 (30)
Delta9-Tetrahydrocannabinolic acid	THCA-A	mg/g (%)	0.3 (0.03) – 300 (30)
Total Potential CBD	N/A	mg/g (%)	0.3 (0.03) – 300 (30)
Total Potential CBG	N/A	mg/g (%)	0.3 (0.03) – 300 (30)
Total Potential THC	N/A	mg/g (%)	0.3 (0.03) – 300 (30)

Raw Materials-Oil Concentrate			
Analyte Reported	**Alias**	**Unit of Measure**	**Quantitation Range**
Cannabichromene	CBC	mg/g (%)	0.3 (0.03) – 900 (90)
Cannabichromenic acid	CBCA	mg/g (%)	0.3 (0.03) – 900 (90)
Cannabidiol	CBD	mg/g (%)	0.3 (0.03) – 900 (90)
Cannabidiolic acid	CBDA	mg/g (%)	0.3 (0.03) – 900 (90)
Cannabidivarin	CBDV	mg/g (%)	0.3 (0.03) – 900 (90)
Cannabidivarininc acid	CBDVA	mg/g (%)	0.3 (0.03) – 900 (90)
Cannabigerol	CBG	mg/g (%)	0.3 (0.03) – 900 (90)
Cannabigerolic acid	CBGA	mg/g (%)	0.3 (0.03) – 900 (90)
Cannabinol	CBN	mg/g (%)	0.3 (0.03) – 900 (90)
Tetrahydrocannabivarin	THCV	mg/g (%)	0.3 (0.03) – 900 (90)
Delta 9-Tetrahydrocannabivarin acid	THCVA	mg/g (%)	0.3 (0.03) – 900 (90)
Delta 8-Tetrahydrocannabinol	Delta 8-THC	mg/g (%)	0.3 (0.03) – 900 (90)
Delta9-Tetrahydrocannabinol	Delta 9-THC	mg/g (%)	0.3 (0.03) – 900 (90)
Delta9-Tetrahydrocannabinolic acid	THCA-A	mg/g (%)	0.3 (0.03) – 900 (90)
Total Potential CBD	N/A	mg/g (%)	0.3 (0.03) – 900 (90)
Total Potential CBG	N/A	mg/g (%)	0.3 (0.03) – 900 (90)
Total Potential THC	N/A	mg/g (%)	0.3 (0.03) – 900 (90)