Integration of transcriptomics and metabonomics revealed the protective effects of hemp seed oil against methionine-choline-deficient diet-induced non-alcoholic steatohepatitis in mice

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Determination of the fatty acid profile of hemp seed oil

The fatty acid profile was determined by a gas chromatography (GC) procedure after methylation with cold methanolic solution of potassium hydroxide. The fatty acid methyl esters (FAMEs) were analyzed in an Agilent 8890 gas chromatography equipped with a flame ionization detector (FID), using a TR-FAME GC Column (100 m × 0.25 mm, film thickness 0.2 μm, Thermo Fisher Scientific, Waltham, MA, USA). The initial column temperature was 100 °C, which was held for 13 min and programmed at 10 °C/min from 100 to 180 °C, which was held for 6 min, and then programmed at 1 °C/min from 180 to 200 °C, which was held for 18 min, and finally programmed at 2 °C/min from 200 to 230 °C, which was held for 5 min. The injector temperature was 270 °C, and the detector temperature was 280 °C. FAMEs were identified by retention time comparison to that of the corresponding standard peaks.

Table S1 Primer sequences for qRT-PCR

Gene	Forward	Reverse
Gls1	GCAAGTTCTTGCTGGAGACTCTCA T	AGTTGTCCCCAACGTCATGGGC
Glud1	GGAGATGTCCTGGATCGCTG	AGAGTGCAGGCCCACATTAC
Gpt2	CATTGGGGATGCCCATGCTA	GCACTGTAAGATCCCAAGCTG
Col1α1	GAGCGGAGAGTACTGGATCG	GCTTCTTTTCCTTGGGGTTC
TGFβ1	TGAGTGGCTGTCTTTTGACG	TCTCTGTGGAGCTGAAGCAA
GAPDH	CCTCGTCCCGTAGACAAAATG	TGAGGTCAATGAAGGGGTCGT

Table S2 Fatty acid compositions of hemp seed oil

Fatty acids	Content (g/100 g)	Fatty acids	Content (g/100 g)
linoleic acid (18:2, ω-6)	58.7	γ-linolenic acid (18:3, ω-6)	0.43
α-linolenic acid (18:3, ω-3)	16.1	Palmitoleic acid (16:1)	0.0914
oleic acid (18:1)	14.1	Margaric acid (17:0)	0.048
palmitic acid (16:0)	7.53	Myristic acid (14:0)	0.0326
stearic acid (18:0)	2.94		