

Supplementary material

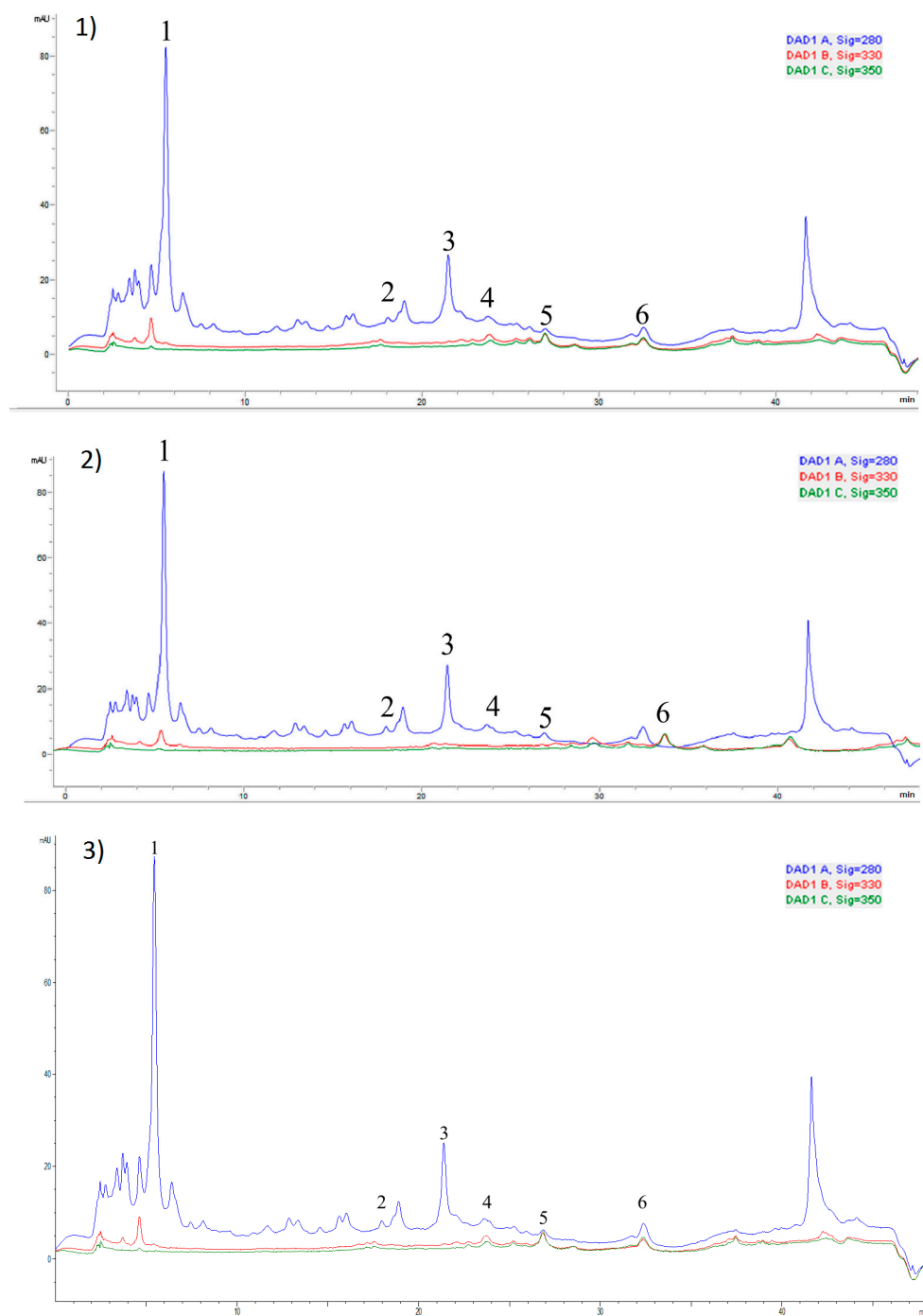


Figure S1. Chromatogram of carob flour extracts obtained by 1) MAE, 2) S/L and 3) UAE with detection at 280 nm, 330 nm and 350 nm: 1-Gallic acid, 2-Quercetin, 3-Caffeic acid, 4-Chlorogenic acid, 5-Rutin, 6-Quercitrin.

Table S1. Validation parameters for HPLC analysis

Analyte	Equation	R^2	LOD ($\mu\text{g/g}$ of dry extract)	LOQ ($\mu\text{g/g}$ of dry extract)	U (%)
<i>trans</i> -cinnamic acid	$y=7.9398x+6.5653$	0.999	1.5	5.0	11
caffeic acid	$y=6.4807x+1.4903$	0.999	1.5	10.0	5
<i>p</i> -coumaric acid	$y=5.5894x+12.473$	0.999	1.5	10.0	10
quercetin	$y=9.4489x+8.3990$	0.998	1.5	10.0	7
chlorogenic acid	$y=2.9003x+4.6876$	0.999	6.5	15.0	5
rosmarinic acid	$y=3.5125x+0.3322$	0.998	8.0	25.0	6
ferulic acid	$y=1.6072x-5.5118$	0.998	4.5	12.0	6
gallic acid	$y=3.0497x+5.4494$	0.999	2.5	15.0	15
rutin	$y=2.1224x+5.4787$	0.999	8.0	25.0	8
quercitrin	$y=2.4017x-2.8372$	0.999	6.5	25.0	5

R^2 - coefficient of determination; LOD - limit of detection; LOQ - limit of quantification; U - expanded measurement uncertainty ($k=2$).

Table S2. Phenolic profile of carob flour extracts obtained by different extraction techniques: 1) optimized microwave-assisted, 2) ultrasound-assisted and 3) solid-liquid extraction.

Compound	MAE ($\mu\text{g/g}$ dry extract)	S/L ($\mu\text{g/g}$ dry extract)	UAE ($\mu\text{g/g}$ dry extract)
<i>trans</i> -cinnamic acid	<LOD	<LOD	<LOD
caffeic acid	259.29 ± 12.96	331.37 ± 16.57	246.03 ± 12.30
<i>p</i> -coumaric acid	<LOD	<LOD	<LOD
quercetin	<LOQ	<LOQ	<LOQ
chlorogenic acid	73.88 ± 3.69	108.97 ± 5.45	67.71 ± 3.39
rosmarinic acid	<LOD	<LOD	<LOD
ferulic acid	<LOD	<LOD	<LOD
gallic acid	2371.86 ± 355.78	2318.70 ± 347.80	2525.08 ± 378.76
rutin	94.91 ± 7.59	171.11 ± 13.69	98.27 ± 7.86
quercitrin	74.93 ± 3.75	118.73 ± 5.94	77.23 ± 3.86

MAE – microwave-assisted extraction; UAE – ultrasound-assisted extraction; S/L – solid-liquid extraction; LOD – limit of detection; LOQ – limit of quantification.