

SUPPLEMENTARY INFORMATION

Circular Valorization of Coffee Silverskin through Supercritical CO₂ for Functional Extracts Production

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Fig. S1 - Processed biomasses. a1) image of green coffee beans; a2) image of blended green coffee beans; a3) optical microscope images of blended green coffee beans; b1) image of silverskin; b2) image of micronized silverskin; b3) optical microscope images of micronized silverskin.

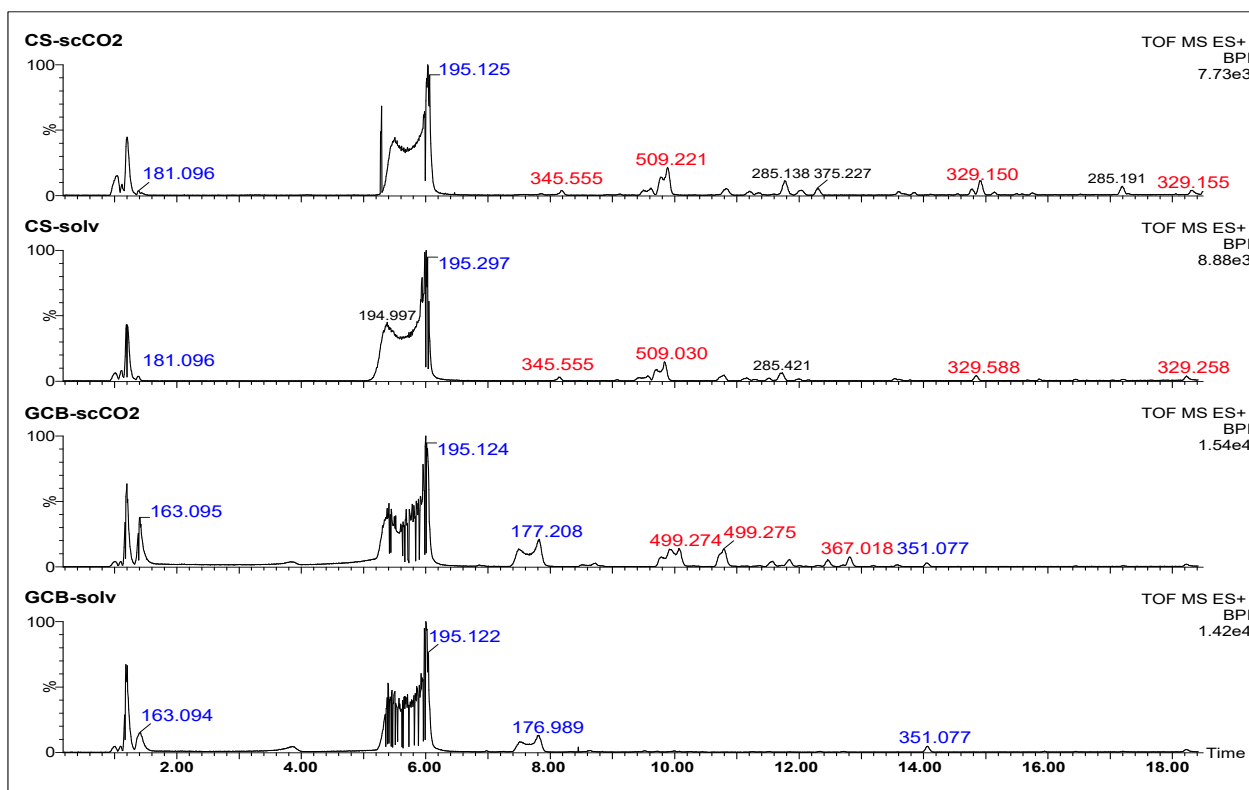
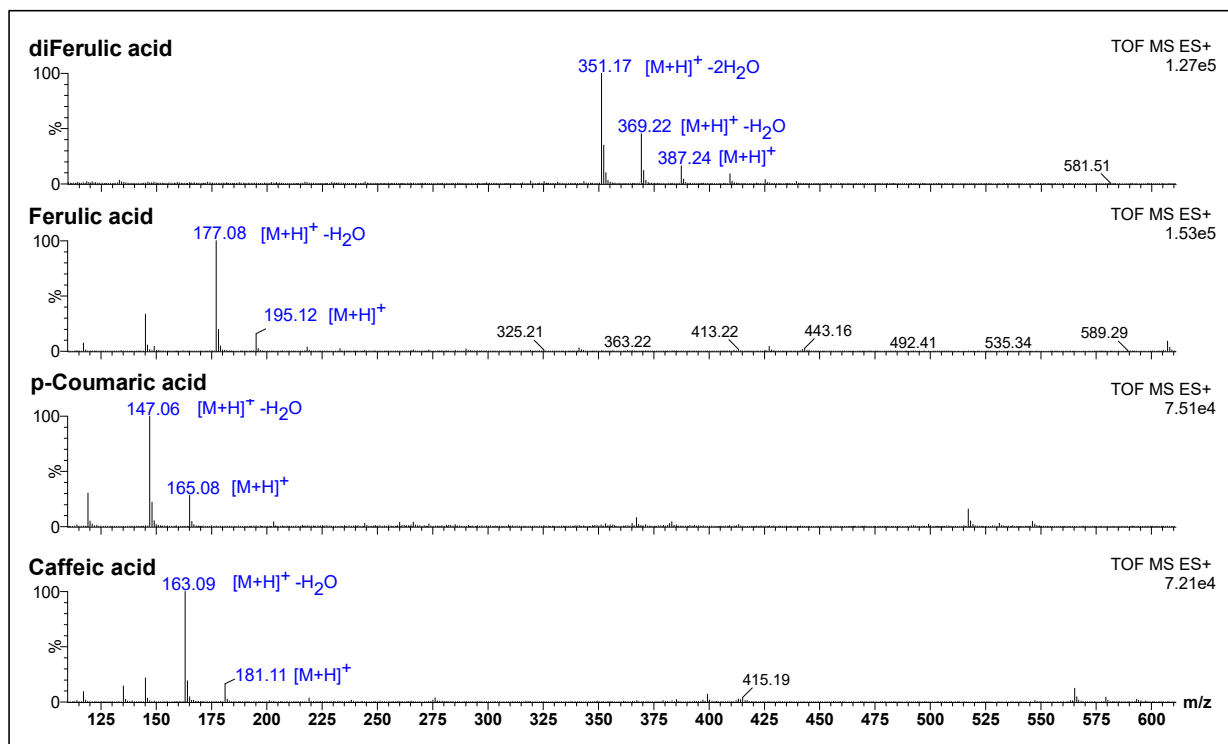


Figure S3 – LC-ESI-MS profile of the extracts from conventional solvent extraction and sc-CO₂ of green coffee beans and coffee silverskin biomasses prior saponification.

Fig. S2 - ESI-MS profile of the standards of diferulic acid, ferulic acid, p-coumaric acid and caffeic acid.

Table S1. Hydroxycinnamic acid quantification after saponification by HPLC-UV

<i>mg/g of sample</i>	GCB-solv	GCB-scCO₂	CS-solv	CS-scCO₂
Caffeic acid	9.213 (± 1.315)	114.087 (± 3.241)	1.871 (± 0.030)	0.138 (± 0.025)
<i>p</i> -Coumaric acid	4.818 (± 0.313)	6.839 (± 0.294)	<i>n.d.</i>	<i>n.d.</i>
Ferulic acid	154.507 (± 5.989)	224.826 (± 0.930)	3.953 (± 0.039)	4.692 (± 0.332)

n.d. (non-detected)

Table S2. Mass values of the different compounds analysed by LC-ESI-MS

Compounds	Molar mass (g/mol)	m/z [$+H$] ⁺	m/z dehydrated [$-H_2O +H$] ⁺
<i>p</i> -Coumaric acid	164	165	147
Caffeic acid (CA)	180	181	163
Ferulic acid (FA)	194	195	177
5-5'-diferulic acid	386	387	369 351 [$M-2H_2O +H$] ⁺
Hexose			180
Pentose			150
FA-pentose			194+150 329 [$+2H$] ⁺
FA-hexose			194+180 359 [$+2H$] ⁺
CA-hexose			180+180 345 [$+2H$] ⁺ 367 [$+2H + Na$] ⁺
FA-Hexo-pentose			194+150+150 509 [$+2H$] ⁺
CA-Hexo-pentose			180+180+150 499 [$+2H + Na$] ⁺