

Valorization of by-products from biofuel biorefineries: extraction and purification of bioactive molecules from post-fermentation corn oil

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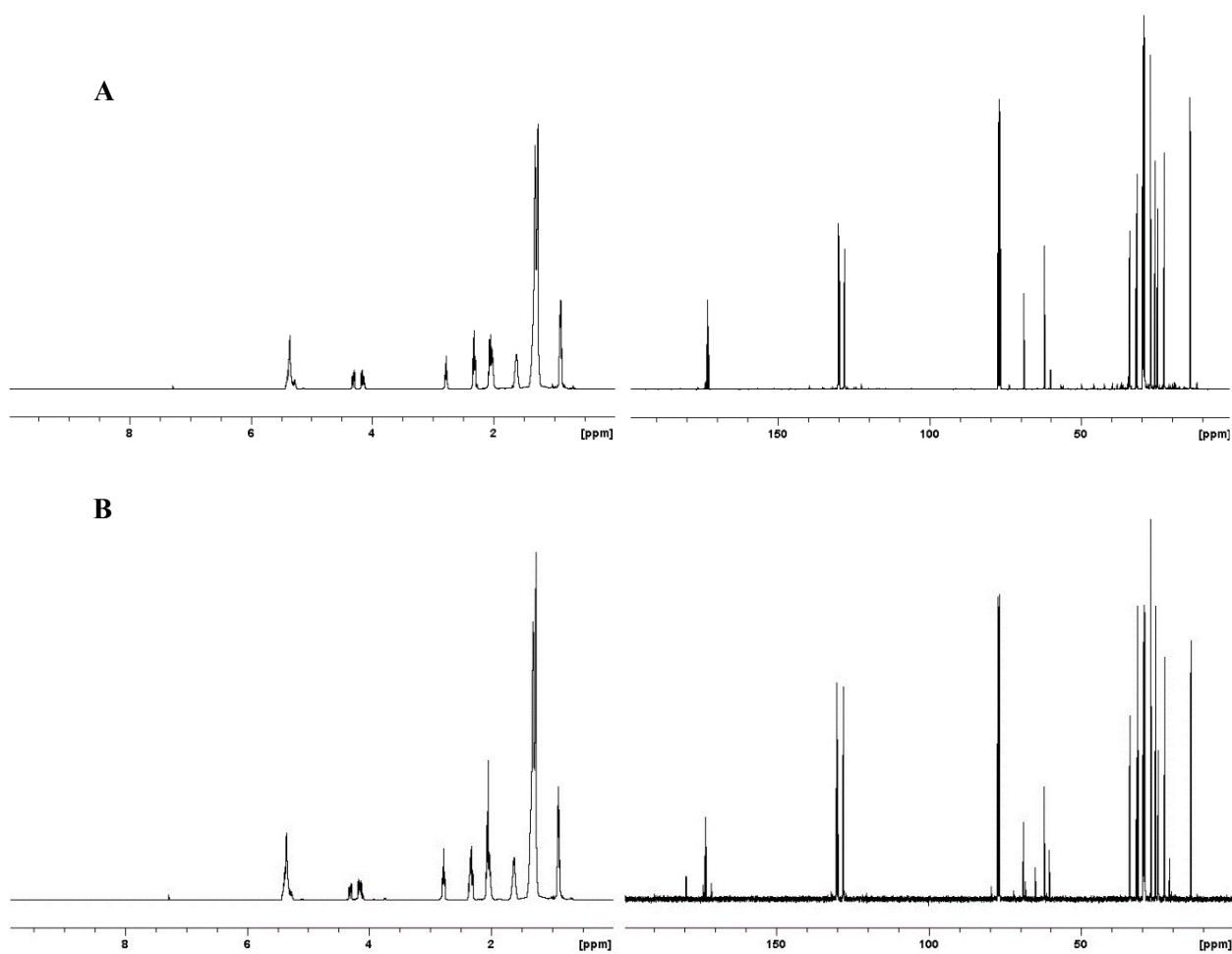


Figure S1. ^1H and ^{13}C NMR spectra of SPE-BES fraction 1 (Panel A) and SPE-BES fraction 2 (Panel B).

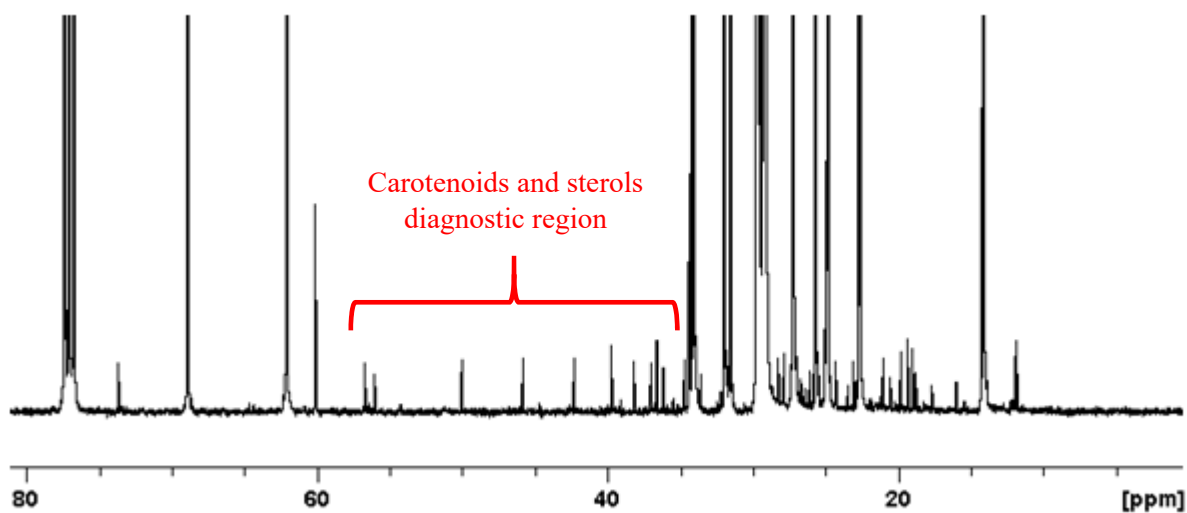


Figure S2. Expansion of ^{13}C NMR spectra of fraction 2 related to carotenoids and sterols diagnostic region.

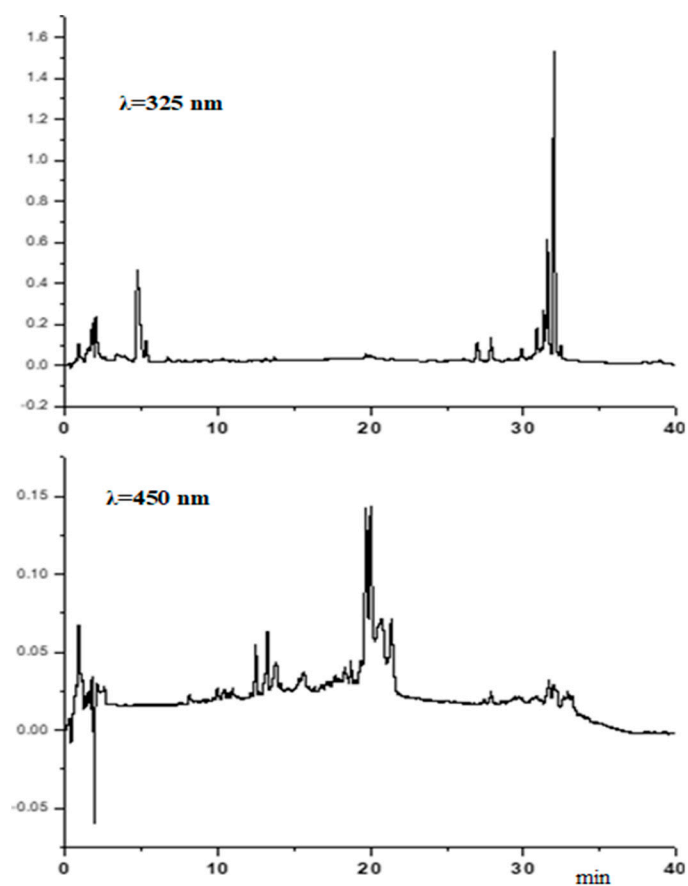


Figure S3. HPLC analyses of fraction 2 performed at 325 nm and 450 nm.

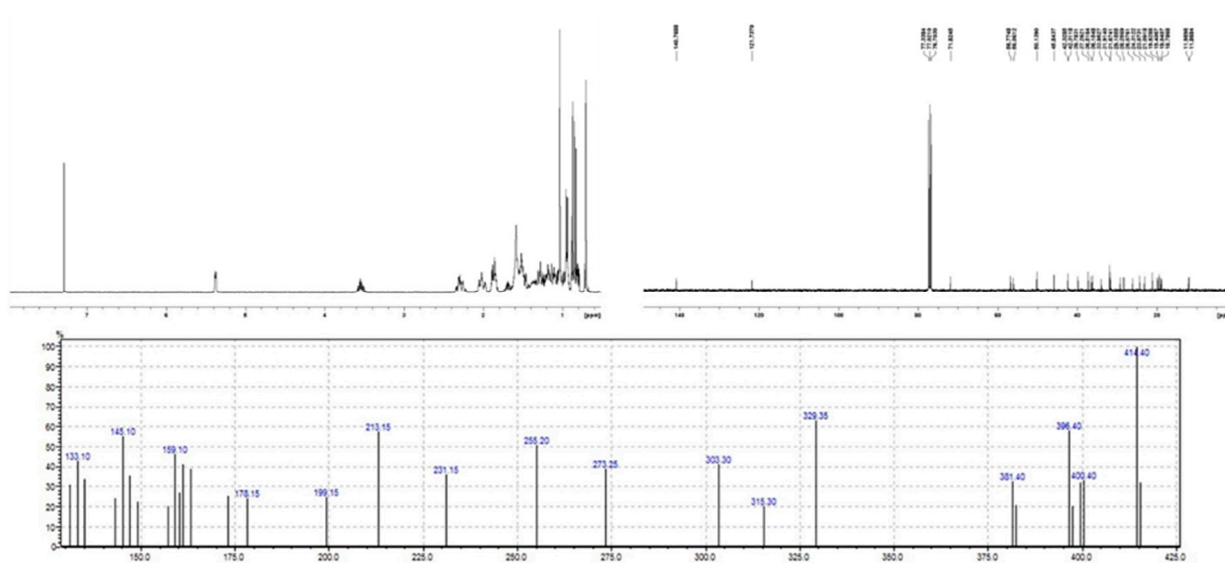


Figure S4. ^1H NMR, ^{13}C NMR and DI-MS of purified fraction 8a.

Table S1 Fatty acid profile of low-polarity fractions (FR4-FR5) and medium-polarity fraction (FR6) obtained by SPE fractionation strategy. Values represent % of total fatty acids.^a

	FR 4		FR 5		FR 6	
	mean	sd	mean	sd	mean	sd
	<i>% of total fatty acids</i>					
C12:0	-		-		-	
C14:0	-		-		-	
C15:0	-		-		-	
C16:0	17.13	0.87	18.24	3.53	17.36	3.10
C16:0-Ethyl ester	3.04	3.30	0.78	0.71	-	
C16:1 n-7	-		-		-	
C17:0	-		-		-	
C18:0	2.43	0.37	3.53	0.78	2.43	0.49
C18:1n-9	28.22	6.75	27.83	3.25	22.28	2.18
C18:1n-7	0.75	0.06	0.92	0.08	0.73	0.52
C18:1 -Ethyl ester	1.90	1.26	0.58	0.19	-	
C18:2 n-6	41.18	1.99	44.85	3.53	55.54	1.95
C18:2 n-6 -Ethyl ester	4.26	4.33	2.32	1.24	-	
C18:3 n-3	1.06	0.18	0.91	0.07	1.78	0.12
C20:0	0.69	0.21	0.60	0.04	0.25	-
C20:1 n-9	0.28	0.02	0.33	0.03	0.15	-
C20:2 n-6	-		-		-	
C22:0	-		0.23	-	-	
C24:0	-		0.28	-	-	
Total SFA	23.06	3.03	23.32	4.76	19.87	3.44
Total MUFA	30.43	5.55	29.35	2.81	22.81	1.89
Total PUFA	46.50	2.52	47.30	1.95	57.31	1.84
Total n-6 PUFA	45.44	2.38	46.40	1.93	55.54	1.95
Total n-3 PUFA	1.06	0.18	0.91	0.07	1.78	0.12
n-6/n-3 PUFA ratio	43.66	6.52	51.27	3.65	31.40	3.02
PUFA/SFA ratio	2.03	0.16	2.10	0.54	2.96	0.65

- not detected

^a Analyses have been carried out according to the procedure described in reference 7