

New Green Biorefinery Strategies to Valorize Bioactive Fractions from *Palmaria palmata*

Melis Cokdinleyen ^{1,2}, Gloria Domínguez-Rodríguez ^{1,3,*}, Huseyin Kara ², Elena Ibáñez ¹ and Alejandro Cifuentes ¹

¹ Laboratory of Foodomics, Institute of Food Science Research (CIAL, CSIC), Nicolás Cabrera 9, 28049 Madrid, Spain; melis.cokdinleyen@cial.uam-csic.es (M.C.); elena.ibanez@csic.es (E.I.); a.cifuentes@csic.es (A.C.)

² Faculty of Sciences, Department of Chemistry, Selçuk University, Arciçh, Ismetpasa Cad, Selçuklu, Konya 42250, Turkey; hkara@selcuk.edu.tr

³ Departamento de Química Analítica, Química Física e Ingeniería Química, Facultad de Ciencias, Universidad de Alcalá, Ctra. Madrid-Barcelona Km. 33.600, 28871 Alcalá de Henares, Madrid, Spain

* Correspondence: gloria.dominguezr@uah.es

Supporting Information (SI)

Table S1. Viscosity values (mPa·s) of NaDES employed in this study with 25% and 50% water measured at 25°C and 40°C.

	25°C (mPa·s)		40°C (mPa·s)	
NaDES	25% H ₂ O	50% H ₂ O	25% H ₂ O	50% H ₂ O
Gly:Glu	34 ± 2 _A ^a	11 ± 1 _A ^b	16.1 ± 0.1 _A ^a	6.6 ± 0.3 _A ^b
Gly:Glu:Bet	31 ± 1 _A ^a	10.0 ± 0.7 _A ^b	20 ± 1 _A ^a	7.8 ± 0.3 _A ^b
Gly:Glu:Pro	30 ± 3 _A ^a	7.9 ± 0.3 _A ^b	17.9 ± 0.3 _A ^a	6.6 ± 0.3 _A ^b

^{A,B,C,D} Letters indicate statistically significant differences in the same column ($p \leq 0.05$). ^{a,b,c,d} Letters indicate statistically significant differences extraction solvents ($p \leq 0.05$).

Table S2. Antioxidant capacity of PLE-Water and PLE-NaDES (Gly:Glu, 50% H₂O) extract according to hydrolysis time determined by ORAC (IC₅₀, µg/mL sample) analyses and TEAC (µmol trolox/g sample).

Hydrolysis Time	ORAC (IC ₅₀ µg/mL sample)		TEAC (mmol/g sample)	
	PLE-NaDES	PLE-Water	PLE-NaDES	PLE-Water
1h	28 ± 1 _A ^b	15.4 ± 0.2 _A ^a	45.15 ± 0.01 _A ^a	43.54 ± 0.02 _A ^b
3h	30 ± 2 _B ^b	21 ± 3 _B ^a	43.10 ± 0.02 _B ^a	40.05 ± 0.03 _B ^b
5h	29 ± 1 _B ^b	21 ± 2 _B ^a	43.50 ± 0.01 _B ^a	39.88 ± 0.07 _B ^b
6h	30.1 ± 0.5 _B ^b	24 ± 3 _C ^a	42.35 ± 0.01 _C ^a	40.50 ± 0.01 _B ^b

^{A,B,C,D} Letters indicate statistically significant differences in the same column ($p \leq 0.05$). ^{a,b,c,d} Letters indicate statistically significant differences extraction solvents ($p \leq 0.05$).