

Supplementary Materials

Modulation and Characterization of Wax-Based Olive Oil Organogels in View of Their Application in the Food Industry

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Table S1. Static yield stress of all organogel samples. Different small letters indicate statistically significant differences between different concentrations within the same organogelator, while different capital letters indicate statistically significant differences between different organogels ($p < 0.05$).

Sample	Yield Stress (Pa)
BO1	5.1 ± 1.92 ^{aA}
BO2	28.58 ± 0.43 ^{aA}
BO3	91.3 ± 31.91 ^{aA}
BO4	221.09 ± 72.97 ^{abA}
BO5	545.59 ± 280.23 ^{bcA}
BO6	803.56 ± 166.05 ^{cA}
CO1	3.77 ± 0.7 ^{aA}
CO2	35.25 ± 21.51 ^{aA}
CO3	418.65 ± 102.2 ^{abB}
CO4	832.09 ± 513.32 ^{abA}
CO5	1395.57 ± 369.35 ^{abB}
CO6	1824.94 ± 1081.63 ^{bA}
CTO1	0.07 ± 0.03 ^{ab}
CTO2	9.95 ± 0.69 ^{abA}
CTO3	30.28 ± 8.16 ^{abA}
CTO4	94.84 ± 7.33 ^{abA}
CTO5	218.73 ± 73.88 ^{abA}
CTO6	409.33 ± 353.72 ^{bA}

Table S2 Thermal properties of organogels (temperature of melting— T_m ; enthalpy of melting— ΔH_m ; temperature of crystallization— T_c ; enthalpy of crystallization— ΔH_c ; entropy of crystallization— ΔS_c ; sol-gel temperature transition during the melting— $T_{g, \text{melting}}$; sol-gel temperature transition during the cooling— $T_{g, \text{cooling}}$)

Sample	Onset T_{m1} (°C)	T_{m1} (°C)	Endset T_{m1} (°C)	ΔH_{m1} (J/g)	Onset T_{c1} (°C)	T_{c1} (°C)	Endset T_{c1} (°C)	ΔH_{c1} (J/g)	ΔS_{c1} (J/g)	Onset T_{m2} (°C)	T_{m2} (°C)	Endset T_{m2} (°C)	ΔH_{m2} (J/g)	Onset T_{c2} (°C)	T_{c2} (°C)	Endset T_{c2} (°C)
BO1	21.47	25.64	25.64	0.04	30.57	28.03	23.80	-0.49	-0.02	32.93	42.64	49.64	0.65	N.D.	N.D.	N.D.
BO2	22.73	25.07	25.07	0.02	36.68	32.59	30.97	-1.21	-0.04	34.65	46.29	53.27	1.80	23.47	18.49	9.75
BO3	15.84	19.73	24.01	0.05	39.86	36.77	31.69	-1.86	-0.05	28.45	27.01	28.29	0.24	26.70	22.39	14.16
BO4	13.84	18.12	23.56	0.07	41.85	39.05	34.17	-2.30	-0.06	24.28	27.84	31.13	0.20	28.48	24.38	15.58
BO5	15.05	20.22	22.22	0.14	42.84	40.62	36.75	-3.06	-0.08	27.59	30.11	31.64	0.33	29.79	26.11	18.26
BO6	16.72	22.94	26.36	0.13	44.37	41.95	38.15	-3.67	-0.09	29.01	30.28	31.96	0.25	30.87	26.94	19.36
CO1	21.93	25.14	27.40	0.04	28.49	26.68	24.57	-0.10	0.00	33.98	39.98	43.91	0.22	23.50	19.96	12.90
CO2	21.11	25.77	28.00	0.09	34.08	32.09	30.09	-0.26	-0.01	30.50	32.17	34.01	0.13	29.39	26.01	19.15
CO3	19.99	26.18	28.97	0.26	36.73	35.88	34.09	-0.59	-0.02	31.02	34.26	36.06	0.33	33.41	30.66	24.31
CO4	19.93	26.42	29.54	0.29	39.16	37.93	36.49	-0.71	-0.02	32.80	43.42	50.32	3.93	35.84	32.88	29.67
CO5	21.65	25.26	27.54	0.07	40.64	39.35	37.95	-0.76	-0.02	36.66	44.14	51.74	4.82	37.41	34.63	29.57
CO6	22.18	25.40	28.45	0.13	41.26	40.15	38.77	-1.21	-0.03	33.33	44.34	50.20	6.02	38.20	35.49	30.39
CTO1	37.18	43.33	48.08	0.07	44.63	42.06	38.74	-1.07	-0.03	65.10	70.82	76.91	0.95	23.22	19.23	12.44
CTO2	39.68	46.31	50.06	0.09	45.93	42.52	36.78	-1.01	-0.02	66.10	72.09	78.23	1.01	24.65	20.02	12.76
CTO3	41.40	49.81	53.89	0.20	50.13	47.58	42.92	-2.60	-0.05	67.84	73.64	80.22	2.41	30.24	26.08	19.16
CTO4	42.56	50.79	55.14	0.49	53.90	50.32	43.80	-4.78	-0.10	68.98	74.73	80.89	4.71	34.94	30.81	22.32
CTO5	44.08	52.24	56.06	0.64	58.37	54.81	50.36	-6.15	-0.11	69.17	75.28	81.23	8.26	49.18	47.29	45.35
CTO6	45.26	52.62	57.31	0.47	58.24	54.49	48.75	-5.94	-0.11	70.13	76.72	81.35	8.96	48.27	45.99	43.08
Control BW	63.22	67.80	69.84	140.83	60.60	58.51	50.80	-85.52	-1.46	N.D.	N.D.	N.D.	N.D.	50.22	48.36	45.00
Control CW	68.07	73.67	76.55	116.52	68.93	66.59	63.84	-7.02	-0.11	N.D.	N.D.	N.D.	N.D.	62.82	60.03	56.33
Control CT1W	52.58	59.37	63.37	N.D.	78.87	75.96	71.31	-84.84	-1.12	82.30	85.39	88.03	125.44	70.69	68.65	64.28

Table S2 (continuation) Thermal properties of organogels (temperature of melting— T_m ; enthalpy of melting— ΔH_m ; temperature of crystallization— T_c ; enthalpy of crystallization— ΔH_c ; entropy of crystallization— ΔS_c ; sol–gel temperature transition during the melting— $T_{g,melting}$; sol–gel temperature transition during the cooling— $T_{g,cooling}$)

Sample	ΔH_{c2} (J/g)	ΔS_{c2} (J/g)	Onset T_{m3} (°C)	T_{m3} (°C)	Endset T_{m3} (°C)	ΔH_{m3} (J/g)	Onset T_{c3} (°C)	T_{c3} (°C)	Endset T_{c3} (°C)	ΔH_{c3} (J/g)	ΔS_{c3} (J/g)	T_{g1} Melting	T_{g2} Melting	T_{g3} Melting	T_{g4} Melting	T_{g1} Cooling	T_{g2} Cooling
BO1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	41.21	23.28	N.D.	N.D.	21.01	N.D.
BO2	-0.51	-0.03	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	43.88	16.74	N.D.	N.D.	29.56	14.43
BO3	-1.13	-0.05	39.33	48.61	54.80	4.32	N.D.	N.D.	N.D.	N.D.	N.D.	41.21	22.68	N.D.	N.D.	21.01	N.D.
BO4	-1.44	-0.06	36.50	49.67	55.76	4.46	N.D.	N.D.	N.D.	N.D.	N.D.	50.27	23.29	N.D.	N.D.	36.62	21.76
BO5	-2.16	-0.08	38.56	51.05	49.88	6.72	N.D.	N.D.	N.D.	N.D.	N.D.	50.33	32.31	N.D.	N.D.	39.17	24.87
BO6	-2.71	-0.10	39.96	51.88	56.94	7.04	N.D.	N.D.	N.D.	N.D.	N.D.	50.85	30.49	N.D.	N.D.	40.63	26.02
CO1	-0.29	-0.01	51.00	57.86	61.76	0.12	N.D.	N.D.	N.D.	N.D.	N.D.	33.35	18.80	N.D.	N.D.	20.73	9.91
CO2	-0.93	-0.04	35.23	41.83	50.26	1.62	N.D.	N.D.	N.D.	N.D.	N.D.	49.95	19.67	N.D.	N.D.	28.41	10.28
CO3	-2.21	-0.07	36.71	42.34	50.29	4.01	N.D.	N.D.	N.D.	N.D.	N.D.	55.58	32.31	N.D.	N.D.	32.06	11.02
CO4	-2.94	-0.09	58.77	62.26	67.07	1.57	N.D.	N.D.	N.D.	N.D.	N.D.	59.94	46.66	N.D.	N.D.	35.93	10.46
CO5	-3.16	-0.09	58.78	63.64	68.22	2.23	N.D.	N.D.	N.D.	N.D.	N.D.	64.08	47.86	N.D.	N.D.	38.16	11.69
CO6	-5.15	-0.15	56.27	62.12	69.13	3.69	N.D.	N.D.	N.D.	N.D.	N.D.	64.47	48.87	N.D.	N.D.	39.40	12.93
CTO1	-0.09	0.00	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	78.37	62.67	38.95	23.25	43.44	N.D.
CTO2	-0.12	-0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	77.71	63.88	46.07	20.78	46.79	N.D.
CTO3	-0.30	-0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	78.74	66.39	44.30	23.58	50.47	39.98
CTO4	-0.44	-0.01	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	73.68	48.16	N.D.	N.D.	52.40	34.50
CTO5	-2.38	-0.05	N.D.	N.D.	N.D.	N.D.	38.97	36.12	29.64	-0.72	-0.02	77.43	48.43	N.D.	N.D.	48.31	39.25
CTO6	-2.47	-0.05	N.D.	N.D.	N.D.	N.D.	37.82	34.43	28.68	-0.64	-0.02	78.40	48.32	N.D.	N.D.	62.76	50.47
Control BW	-56.45	-1.17	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.						
Control CW	-68.60	-1.14	N.D.	N.D.	N.D.	N.D.	55.01	53.44	51.14	-37.80	-0.71						
Control CT1W	-52.67	-0.77	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.						

Table S3 Comparison of melting and crystallization temperatures obtained in DSC and rheological analysis

Sample	Tm1 (°C)	Tg1 Melting (°C)	Tm2 (°C)	Tg2 Melting (°C)	Tc1 (°C)	Tg1 Cooling (°C)	Tc2 (°C)	Tg2 Cooling (°C)
BO1 to BO6	18.12 to 25.64	16.74 to 32.31	42.64 to 51.88	41.21 to 50.85	23.47 to 30.87	14.43 to 26.02	28.03 to 41.85	21.01 to 40.63
CO1 to CO6	39.98 to 44.34	18.80 to 48.87	57.86 to 62.12	33.35 to 64.47	19.96 to 35.49	9.91 to 12.93	26.68 to 40.15	20.73 to 39.40
CTO1 to CTO6	43.33 to 52.72	38.95 to 48.43	70.82 to 76.72	73.68 to 78.74	19.23 to 47.29	39.98 to 50.47	42.06 to 54.49	43.44 to 62.76