



Supplementary Material

Characterization and Classification of Spanish Honeydew and Blossom Honeys Based on Their Antioxidant Capacity

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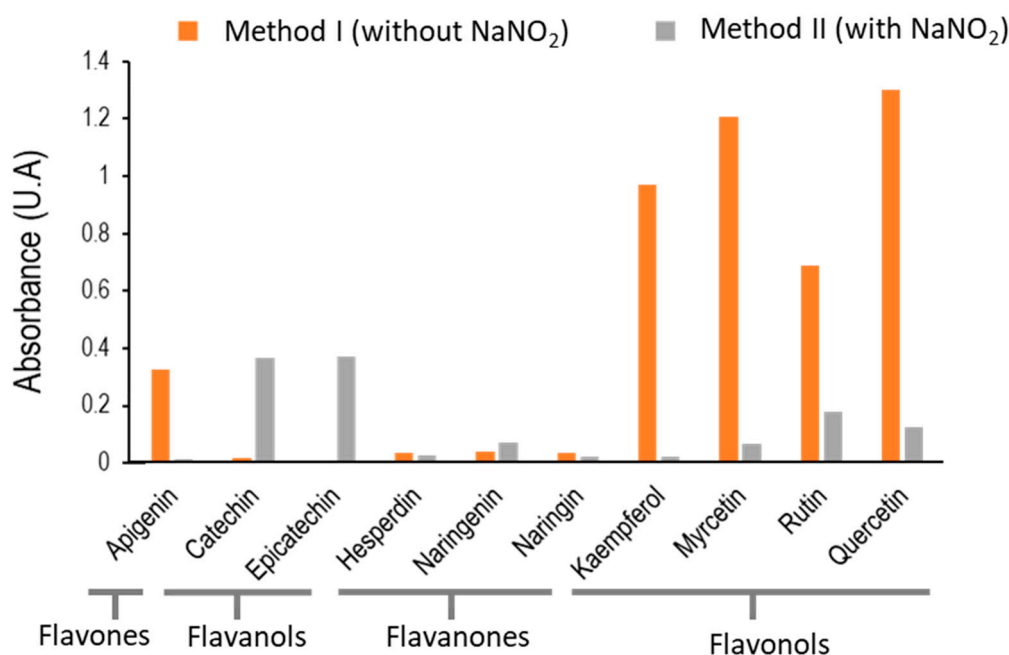


Figure S1. Comparison of the two aluminum complexation methods (with and without NaNO₂) using standards (500 mg L⁻¹) of compounds of different flavonoid subfamilies. Results are expressed as the absorbance measures at the corresponding wavelengths.

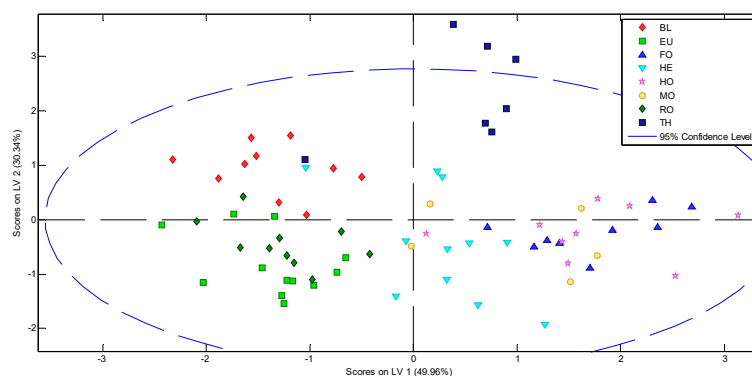


Figure S2. PLS-DA result for the multi-class classification of honeys according to their variety of origin. Three latent variables were used to build the model.

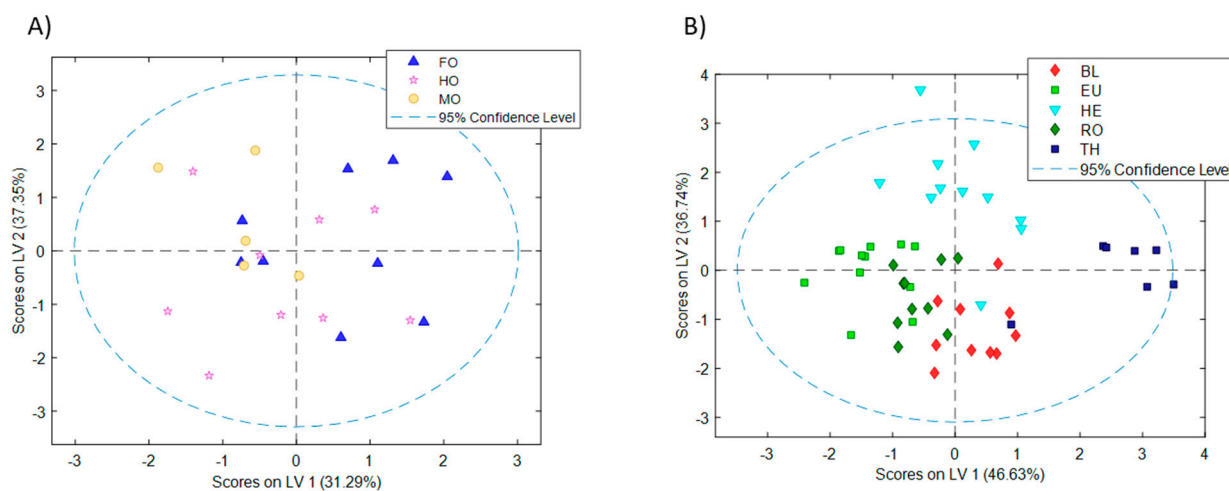


Figure S3. PLS-DA result for the multi-class classification of honeys according to their variety of origin. (A) honeydew honey and (B) blossom honeys. In both cases two latent variables were used to build the model.

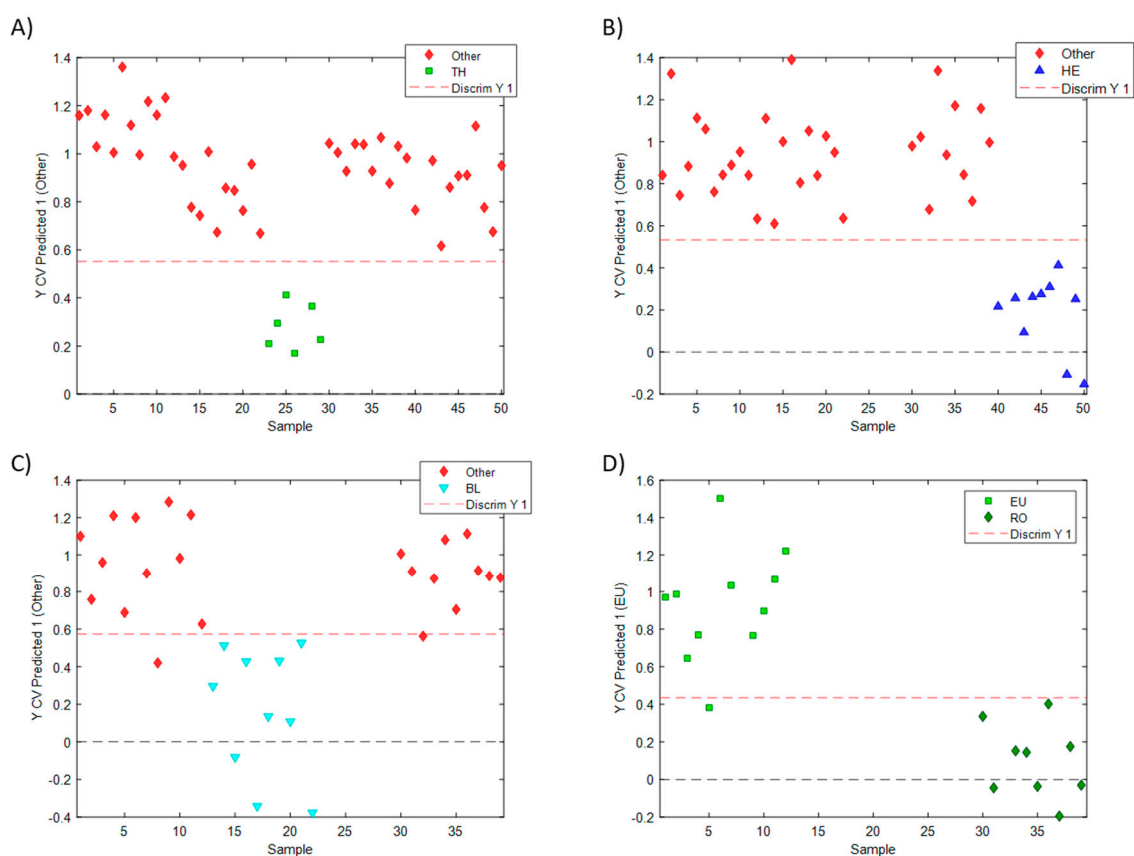


Figure S4. Two-class classification models obtained by PLS-DA according to the classification tree established. (A) thyme vs. others; (B) heather vs. others; (C) orange/lemon vs others; (D) eucaliptus vs. rosemary.

Table S1. Antioxidant indexes determined for the 73 samples under study.

Honey type	Variety	Code	FC index (mg eq gallic acid/g honey)	TFC (method I) (mg eq quercetin /g honey)	TFC (method II) (mg eq epicatechin /g honey)	FRAP (mg eq Trolox/g honey)
Blossom	Eucalyptus	EU-1	0.19	0.89	0.30	0.38
		EU-2	0.06	0.39	0.14	0.25
		EU-3	0.28	1.08	0.28	0.41
		EU-4	0.18	1.01	0.27	0.28
		EU-5	0.23	0.56	0.12	0.25
		EU-6	0.01	0.62	0.29	0.36
		EU-7	0.21	0.87	0.33	0.51
		EU-8	0.18	0.80	0.16	0.69
		EU-9	0.16	0.85	0.34	0.28
		EU-10	0.15	0.83	0.25	0.33
		EU-11	0.14	0.89	0.33	0.37
		EU-12	0.28	1.00	0.27	0.65
	Mean ± SD		0.17 ± 0.08	0.82 ± 0.20	0.26 ± 0.08	0.40 ± 0.15
	Orange/lemon	BL-1	0.22	0.34	0.07	0.50
		BL-2	0.35	1.47	0.03	0.68
		BL-3	0.32	0.40	ND	0.68
		BL-4	0.19	0.27	ND	0.30
		BL-5	0.36	0.54	ND	0.86
		BL-6	0.31	0.25	0.06	0.60
		BL-7	0.38	0.35	0.20	0.58
		BL-8	0.35	0.29	0.03	0.55
		BL-9	0.25	0.76	0.12	0.55
		BL-10	0.41	0.37	0.13	1.04
	Mean ± SD		0.32 ± 0.07	0.50 ± 0.37	0.06 ± 0.07	0.64 ± 0.20
	Thyme	TH-1	0.56	0.61	0.02	2.70
		TH-2	0.58	1.00	0.09	2.10
		TH-3	0.51	1.06	0.11	2.02
		TH-4	0.39	0.49	0.02	3.27
		TH-5	0.41	0.72	0.01	0.50
		TH-6	0.55	0.99	0.13	1.91
		TH-7	0.49	0.86	0.07	3.00
	Mean ± SD		0.50 ± 0.08	0.82 ± 0.22	0.07 ± 0.05	2.21 ± 0.92
	Rosemary	RO-1	0.28	0.79	0.22	0.17
		RO-2	0.32	0.39	0.23	0.17
		RO-3	0.31	1.08	0.19	0.58
		RO-4	0.23	0.23	0.13	0.05
		RO-5	0.31	0.70	0.24	0.15
		RO-6	0.32	0.61	0.05	0.06
		RO-7	0.30	0.75	0.30	0.28
		RO-8	0.44	1.04	0.22	0.22
		RO-9	0.28	0.21	0.23	0.16
		RO-10	0.34	0.50	0.20	0.18
	Mean ± SD		0.31 ± 0.05	0.63 ± 0.30	0.20 ± 0.07	0.20 ± 0.15
	Heather	HE-1	0.43	1.45	0.29	1.10
		HE-2	0.30	0.67	0.08	0.96
		HE-3	0.42	1.81	0.36	0.58
		HE-4	0.37	1.19	0.19	1.68
		HE-5	0.36	1.68	0.26	0.97
		HE-6	0.22	1.62	0.25	1.16
		HE-7	0.37	1.48	0.34	0.87
		HE-8	0.20	1.60	0.35	0.81
		HE-9	0.32	2.22	0.26	1.39
		HE-10	0.35	1.67	0.10	1.41
		HE-11	0.32	2.70	0.39	0.88
	Mean ± SD		0.33 ± 0.07	1.65 ± 0.52	0.26 ± 0.10	1.08 ± 0.32

Honey-dew	Forest	FO-1	0.65	1.94	0.34	0.97
		FO-2	0.81	2.55	0.20	1.34
		FO-3	0.62	2.56	0.27	1.62
		FO-4	0.52	2.92	0.18	1.22
		FO-5	0.48	2.36	0.24	1.18
		FO-6	0.60	2.38	0.16	0.35
		FO-7	0.82	1.93	0.23	1.38
		FO-8	0.69	1.47	0.28	0.87
		FO-9	0.67	1.23	0.22	0.57
	Mean ± SD		0.65 ± 0.11	2.15 ± 0.55	0.23 ± 0.06	1.06 ± 0.41
	Holm oak	HO-1	0.66	2.87	0.29	2.16
		HO-2	0.57	0.95	0.23	0.51
		HO-3	0.78	1.85	0.24	1.31
		HO-4	0.57	2.09	0.26	1.25
		HO-5	0.78	1.50	0.24	1.33
		HO-6	0.70	1.45	0.24	0.88
		HO-7	0.73	1.23	0.38	0.96
		HO-8	0.68	2.25	0.18	0.48
		HO-9	0.78	1.81	0.45	1.41
	Mean ± SD		0.70 ± 0.08	1.78 ± 0.58	0.28 ± 0.08	1.14 ± 0.52
	Mountain	MO-1	0.61	1.92	0.36	0.86
		MO-2	0.59	1.86	0.36	1.43
		MO-3	0.71	1.68	0.23	1.21
		MO-4	0.55	0.82	0.26	0.44
		MO-5	0.54	1.15	0.16	0.69
	Mean ± SD		0.60 ± 0.07	1.48 ± 0.48	0.27 ± 0.09	0.93 ± 0.40

Table S2. Results from two-class classification models obtained by PLS-DA. The calibration set comprises the 60% of all samples randomly chosen and the prediction set the 40% remaining samples.

Number of LV	Calibration		Validation		Prediction	
	Sensitivity	Specificity	Sensitivity	Specificity	Sensitivity	Specificity
2	1	1	1	0.92	0.90	1