

Figure 1S. Visual representation of the correlation occurring between factors in the five extract matrices.

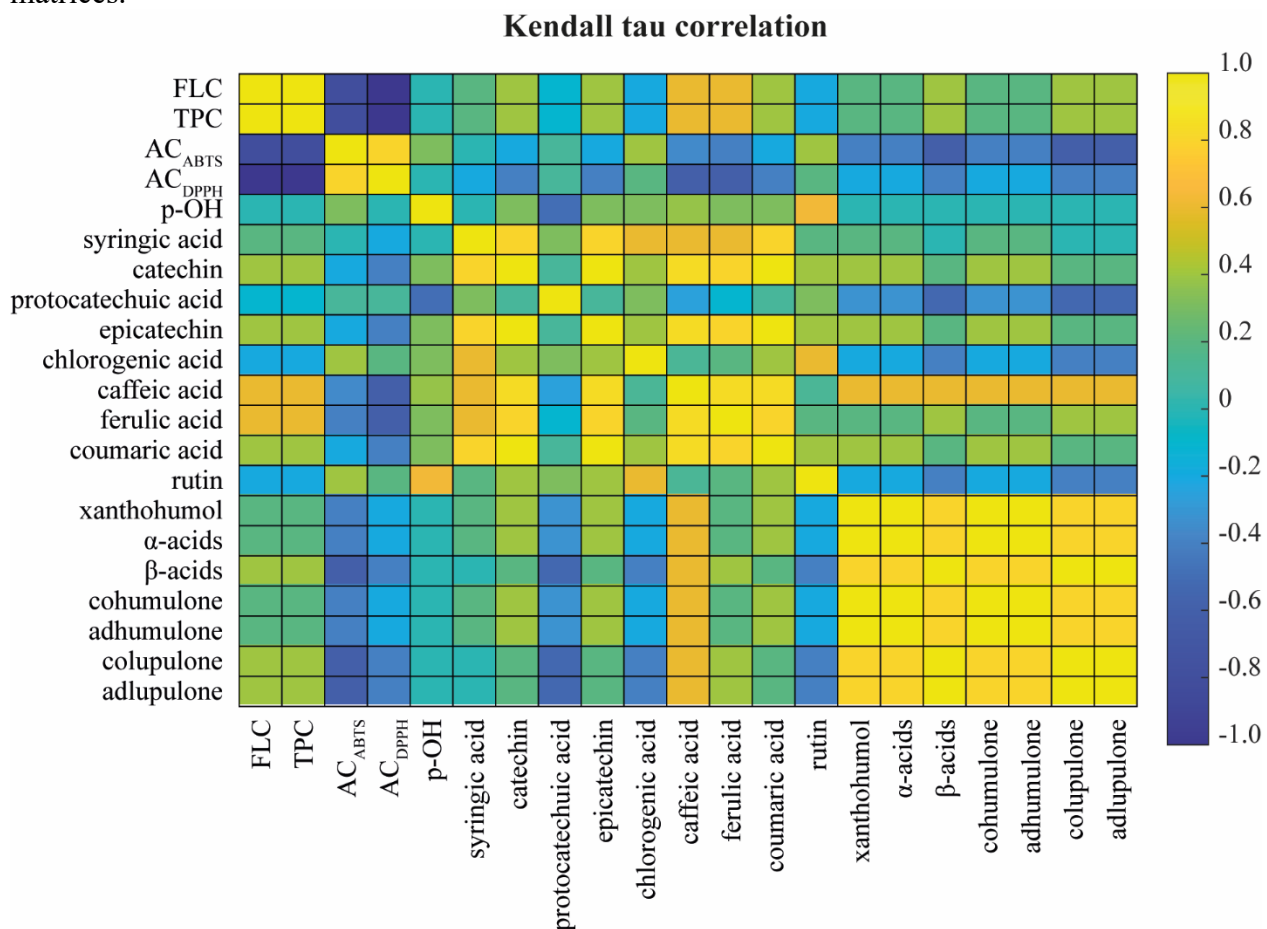


Figure S2. Scatter plot reporting the trend of cell viability over β -acids (a), colupulone (b) and adlupulone (c). UAE: ultrasound-assisted extraction; MAE: microwave-assisted extraction; EtOH: ethanol; mix: ethanol:water mixture (50 %v/v); CTRL: reference extract.

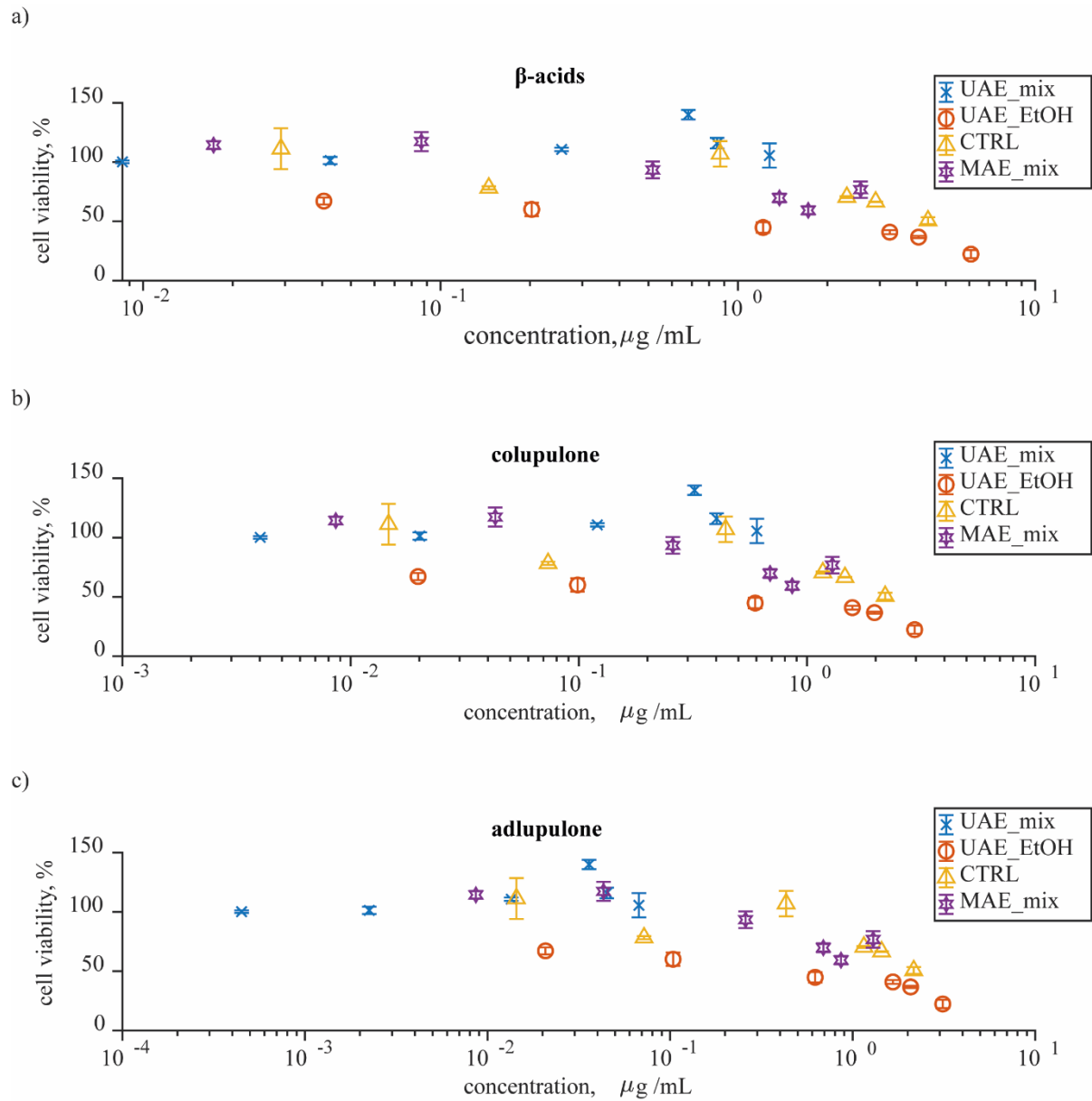
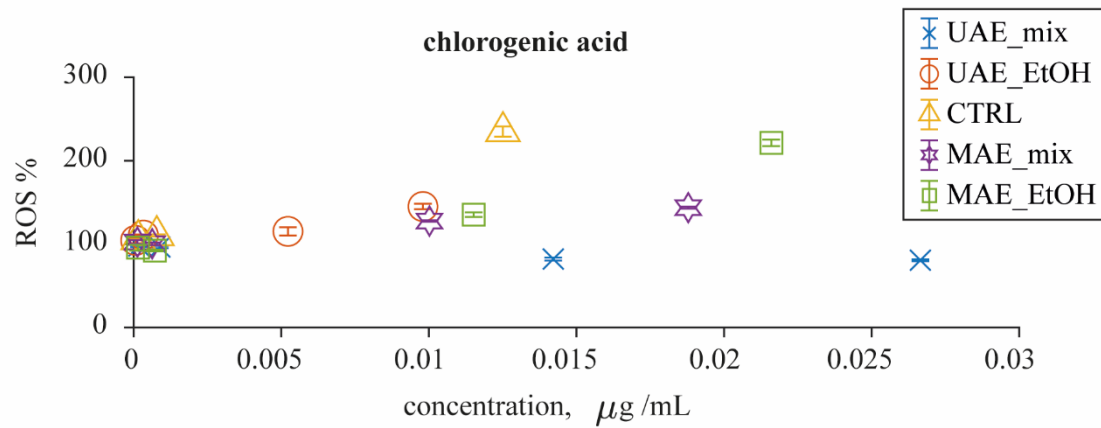
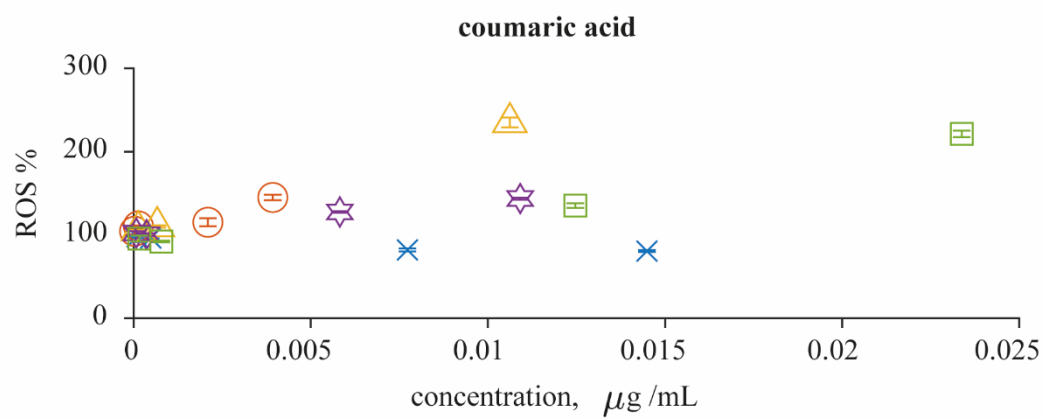


Figure S3. Scatter plot reporting the behavior of ROS (%) versus increasing concentration of chlorogenic acid (a), coumaric acid (b) and rutin (c). UAE: ultrasound-assisted extraction; MAE: microwave-assisted extraction; EtOH: ethanol; mix: ethanol:water mixture (50 %v/v); CTRL: reference extract.

a)



b)



c)

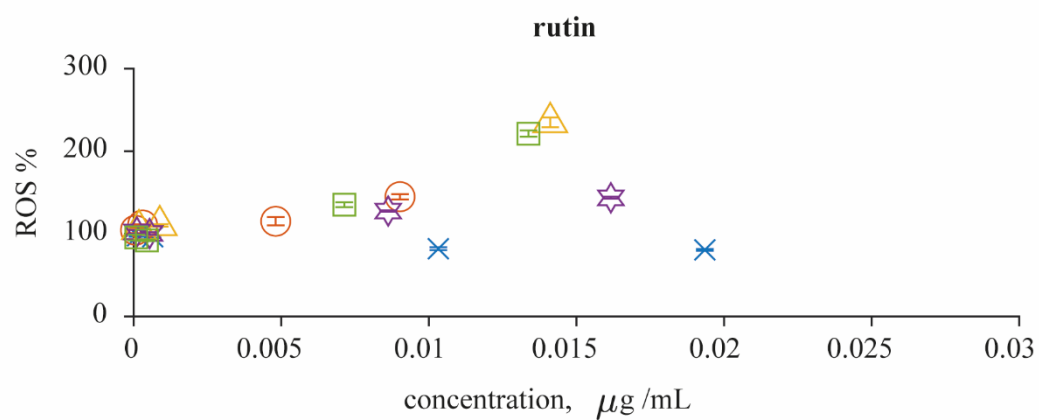


Table S1. Fit parameters and goodness estimators for cell viability.

β -acids

	Estimate	SE	t-stat	p-value
(Intercept)	101.50	3.41	29.78	1.75E-41
x1	-13.63	1.57	-8.70	9.29E-13

Adjusted R-squared: 0.513

colupulone

	Estimate	SE	t-stat	p-value
(Intercept)	101.52	3.40	29.82	1.62E-41
x1	-27.64	3.17	-8.72	8.68E-13

Adjusted R-squared: 0.514

adlupulone

	Estimate	SE	t-stat	p-value
(Intercept)	100.44	2.95	34.02	2.83E-45
x1	-27.79	2.71	-10.24	1.47E-15

Adjusted R-Squared: 0.594

Table S2. Multivariate model parameters and goodness of fit estimator for cell viability.

x1 = ferulic acid; x2 = adlupulone

	Estimate	SE	t-stat	p-value
b1	64.88	17.42	3.73	3.50E-4
b2	0.82	0.24	3.61	5.19E-4
b3	4130	1739.10	2.37	1.98E-2
b4	135.83	11.93	11.38	8.90E-19
b5	5.68	1.57	3.61	5.14E-4

Adjusted R-Squared: 0.725

Table S3. 1D (a) and 2D (b) fitting results for the reactive oxygen species observed trends.

a)

chlorogenic acid

	Estimate	SE	t-stat	p-value
(Intercept)	95.80	6.23	15.38	9.30E-20
x1	6209.50	573.82	10.82	3.12E-14

coumaric acid

	Estimate	SE	t-stat	p-value
(Intercept)	101.22	5.69	17.78	3.04E-22
x1	6919.10	611.73	11.31	7.02E-15

rutin

	Estimate	SE	t-stat	p-value
(Intercept)	95.15	4.70	20.25	1.49E-24
x1	7134.80	474.12	15.05	2.18E-19

b)

coumaric acid + protocatechuic acid

	Estimate	SE	t-stat	p-value
(Intercept)	102.53	2.88	35.65	1.15E-40
x1	9860.30	403.31	24.45	6.70E-32
x2	-6195.00	384.01	-16.13	6.54E-23

adjusted R-squared = 0.91