

Figure S1. Estimated response surfaces for each response variable, and their corresponding Standardized Pareto charts: **A)** Extraction yield (%); **B)** TPC (mg GAE/mL); **C)** IC₅₀ ROS (µg/mL); **D**, IC₅₀ AChE (µg/mL).

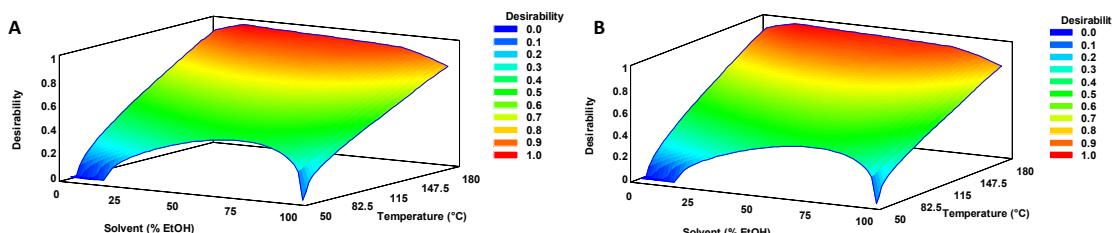


Figure S2. Desirability response surface to optimize response variables: **A)** including extraction yield as response variable; **B)** excluding extraction yield as response variable.

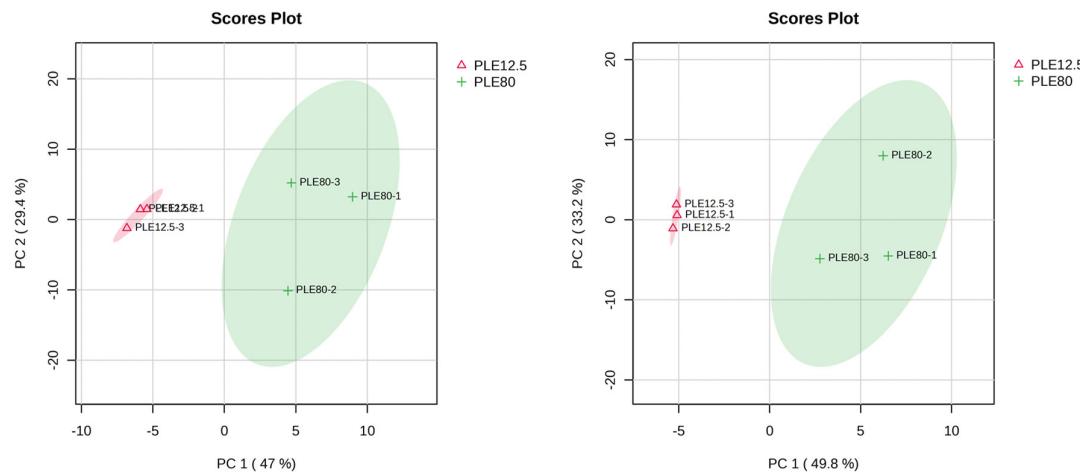


Figure S3. PCA score plots of pracaxi nuts PLE extracts data obtained by: **A)** HPLC-C18-Q-TOF MS/MS ESI (+); **B)** HPLC-C18-Q-TOF MS/MS ESI (-).

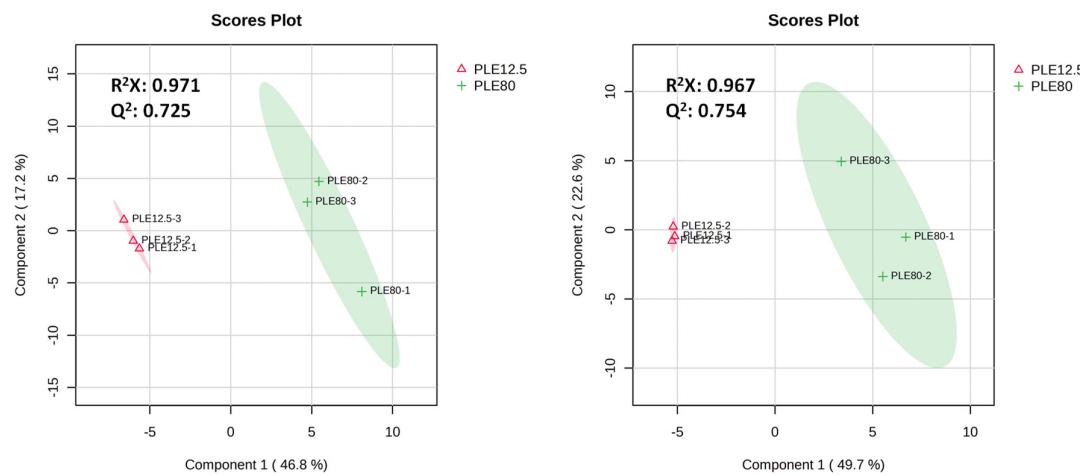


Figure S4. PLS-DA score plots of pracaxi nuts PLE extracts data obtained by: **A)** HPLC-C18-Q-TOF MS/MS ESI (+); **B)** HPLC-C18-Q-TOF MS/MS ESI (-).

Table S1. Analysis of Variance of extraction yield variable for response surface modeling showing linear, quadratic and interaction relations, and coefficient for model prediction.

Source	Sum of Squares	Df	CE	F-Ratio	P-Value
Model					
Solvent composition (% EtOH)	94.4067	1	β_0	-1.84655	
Temperature (°C)	213.607	1	β_1	0.0556026	90.56
Solvent composition ²	0.135	1	β_2	0.106144	204.9
Solvent composition x Temperature	3.4225	1	$\beta_{1,1}$	-9.00×10^{-5}	0.13
Temperature ²	0.735	1	$\beta_{1,2}$	2.85×10^{-4}	3.28
Lack-of-fit	7.84833	3	$\beta_{2,1}$	-1.24×10^{-4}	0.71
Pure error	3.1275	3			0.4627
Total (corr.)	323.627	11			0.2349

Df (degree of freedom)

CE (coefficients of regression equation)

* Denotes statistical differences ($p < 0.05$)

R-squared = 96.6085 percent

R-squared (adjusted for d.f.) = 93.7822 percent

Standard Error of Est. = 1.02103

Mean absolute error = 0.888889

Durbin-Watson statistic = 2.14667 (P=0.5543)

Lag 1 residual autocorrelation = -0.189627

Asterisk indicates statistical significance (p -value < 0.05).

Table S2. Analysis of Variance of TPC variable for response surface modeling showing linear, quadratic and interaction relations, and coefficient for model prediction.

Source	Sum of Squares	Df	CE		F-Ratio	P-Value
Model						
Solvent composition (% EtOH)	299.627	1	β_0	58.4568		
Temperature (°C)	7661.23	1	β_1	0.992372	0.93	0.4068
Solvent composition ²	207.682	1	β_2	0.206933	23.69	0.0166*
Solvent composition x Temperature	792.422	1	$\beta_{1,1}$	-3.53×10^{-3}	0.64	0.4816
Temperature ²	281.535	1	$\beta_{1,2}$	-4.33×10^{-3}	2.45	0.2155
Lack-of-fit	379.968	3	$\beta_{2,1}$	-4.33×10^{-3}	0.87	0.4197
Pure error	970.388	3			0.39	0.7692
Total (corr.)	10472.6	11				

Df (degree of freedom)

CE (coefficients of regression equation)

* Denotes statistical differences ($p < 0.05$)

R-squared = 87.1059 percent

R-squared (adjusted for d.f.) = 76.3608 percent

Standard Error of Est. = 17.9851

Mean absolute error = 8.39028

Durbin-Watson statistic = 1.96499 (P=0.3927)

Lag 1 residual autocorrelation = -0.0617368

Asterisk indicates statistical significance (p -value < 0.05)

Table S3. Analysis of Variance of ROS variable for response surface modeling showing linear, quadratic and interaction relations, and coefficient for model prediction.

Source	Sum of Squares	Df	CE		F-Ratio	P-Value
Model						
Solvent composition (% EtOH)	16.9277	1	β_0	20.5195		
Temperature (°C)	58.7251	1	β_1	-0.0880672	28.37	0.0129*
Solvent composition ²	1.16998	1	β_2	-0.184977	98.43	0.0022*
Solvent composition x Temperature	20.9444	1	$\beta_{1,1}$	-2.65 × 10 ⁻⁴	1.96	0.2559
Temperature ²	9.2964	1	$\beta_{1,2}$	7.04 × 10 ⁻⁴	35.1	0.0096*
Lack-of-fit	11.3316	3	$\beta_{2,1}$	4.42 × 10 ⁻⁴	15.58	0.029*
Pure error	1.78989	3			6.33	0.0819
Total (corr.)	119.02	11				

Df (degree of freedom)

CE (coefficients of regression equation)

* Denotes statistical differences (p < 0.05)

R-squared = 88.9754 percent

R-squared (adjusted for d.f.) = 79.7882 percent

Standard Error of Est. = 0.772419

Mean absolute error = 0.876167

Durbin-Watson statistic = 2.3977 (P=0.7609)

Lag 1 residual autocorrelation = -0.234766

Asterisk indicates statistical significance (p-value < 0.05)

Table S4. Analysis of Variance of AChE variable for response surface modeling showing linear, quadratic and interaction relations, and coefficient for model prediction.

Source	Sum of Squares	Df	CE		F-Ratio	P-Value
Model						
Solvent composition (% EtOH)	176474	1	β_0	366.498		
Temperature (°C)	178193	1	β_1	-6.48654	641.92	0.0001*
Solvent composition ²	333468	1	β_2	3.48097	648.17	0.0001*
Solvent composition x Temperature	57121	1	$\beta_{1,1}$	1.41 × 10 ⁻¹	1212.98	0.0001*
Temperature ²	16590	1	$\beta_{1,2}$	-3.68 × 10 ⁻²	207.78	0.0007*
Lack-of-fit	123530	3	$\beta_{2,1}$	-1.87 × 10 ⁻²	60.35	0.0044*
Pure error	824.75	3				
Total (corr.)	874174	11			149.78	0.0009*

Df (degree of freedom)

CE (coefficients of regression equation)

* Denotes statistical differences (p < 0.05)

R-squared = 85.7746 percent

R-squared (adjusted for d.f.) = 73.92 percent

Standard Error of Est. = 16.5806

Mean absolute error = 77.4722

Durbin-Watson statistic = 2.00322 (P=0.4261)

Lag 1 residual autocorrelation = -0.00284093

Asterisk indicates statistical significance (p-value < 0.05)

Table S5. Annotated compounds and their total compound contribution (%) in pracaxi SFE extract after HPLC-CSH-Q-TOF MS/MS ESI (-) analysis.

Average Mz	Average RT (min)	Metabolite name	Adduct type	MSI Level	MSI Level	Molecular Formula	Compound subclass	Total compound contribution (%)
281.24976	2.73	FA 18:1; (oleic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C18H34O2	Fatty acids and conjugates	37.81
339.32681	4.59	FA 22:0; (behenic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C22H44O2	Fatty acids and conjugates	14.28
279.23251	2.07	FA 18:2; (linoleic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C18H32O2	Linoleic acids and derivatives	11.61
367.35602	5.31	FA 24:0; (lignoceric acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C24H48O2	Fatty acids and conjugates	10.43
283.26358	3.34	FA 18:0; (stearic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C18H36O2	Fatty acids and conjugates	9.85
255.23288	2.51	FA 16:0; (palmitic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C16H32O2	Fatty acids and conjugates	8.92
309.27914	3.42	FA 20:1; (eicosenoic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C20H38O2	Fatty acids and conjugates	1.76
337.30914	3.98	FA 22:1; (erucic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C22H42O2	Fatty acids and conjugates	1.64
311.29413	3.94	FA 20:0; (arachidic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C20H40O2	Fatty acids and conjugates	1.02
395.39133	6.12	FA 26:0; (cerotic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C26H52O2	Fatty acids and conjugates	0.89
365.34146	4.61	FA 24:1; (nervonic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C24H46O2	Fatty acids and conjugates	0.35
253.21912	1.86	FA 16:1; (palmitoleic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C16H30O2	Fatty acids and conjugates	0.29
353.34186	4.96	FA 23:0	[M-H]-	2b	<i>m/z</i> , MS/MS	C23H46O2	Fatty acids and conjugates	0.18
277.21735	1.58	FA 18:3; (linolenic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C18H30O2	Linoleic acids and derivatives	0.16
227.20163	1.63	FA 14:0; (myristic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C14H28O2	Fatty acids and conjugates	0.15
269.24841	3.00	FA 17:0; (margaric acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C17H34O2	Fatty acids and conjugates	0.14
381.37344	5.72	FA 25:0	[M-H]-	2b	<i>m/z</i> , MS/MS	C25H50O2	Fatty acids and conjugates	0.09
295.22772	0.82	FA 18:2;O	[M-H]-	2b	<i>m/z</i> , MS/MS	C18H32O3	Linoleic acids and derivatives	0.06
241.21724	2.04	FA 15:0; (pentadecylic acid)	[M-H]-	2a	<i>m/z</i> , RT	C15H30O2	Fatty acids and conjugates	0.05
267.23019	2.25	FA 17:1	[M-H]-	2b	<i>m/z</i> , MS/MS	C17H32O2	Fatty acids and conjugates	0.04
325.31213	4.26	FA 21:0	[M-H]-	2b	<i>m/z</i> , MS/MS	C21H42O2	Fatty acids and conjugates	0.04
439.35886	4.17	FA 30:6	[M-H]-	2b	<i>m/z</i> , MS/MS	C30H48O2	Fatty acids and conjugates	0.04
225.18394	1.22	FA 14:1; (physeteric acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C14H26O2	Fatty acids and conjugates	0.04
199.16656	1.05	FA 12:0; (lauric acid)	[M-H]-	2a	<i>m/z</i> , RT	C12H24O2	Fatty acids and conjugates	0.04
574.49921	6.07	Ceramide d34:0	[M+Cl]-	2a	<i>m/z</i> , RT	C34H69NO3	Ceramides	0.03
307.2627	2.95	FA 20:2; (eicosadienoic acid)	[M-H]-	1	<i>m/z</i> , MS/MS, RT	C20H36O2	Fatty acids and conjugates	0.02
415.35745	5.07	FA 28:4	[M-H]-	2b	<i>m/z</i> , MS/MS	C28H48O2	Fatty acids and conjugates	0.02
251.19859	1.37	FA 16:2	[M-H]-	2b	<i>m/z</i> , MS/MS	C16H28O2	Fatty acids and conjugates	0.02
335.2966	3.54	FA 22:2; (docosadienoic acid)	[M-H]-	2a	<i>m/z</i> , RT	C22H40O2	Fatty acids and conjugates	0.01
143.10736	0.57	FA 8:0; (caprylic acid)	[M-H]-	2a	<i>m/z</i> , RT	C8H16O2	Fatty acids and conjugates	0.01

Table S6. Annotated compounds and their total compound contribution (%) in pracaxi SFE extract after HPLC-CSH-Q-TOF MS/MS ESI (+) analysis.

Average Mz	Average RT (min)	Metabolite name	Adduct type	MSI Level	MSI Level	Molecular Formula	Compound subclass	Total compound contribution (%)
923.7563_907.7 833_902.8348	11.03	TG 54:3 TG 18:1_18:1_18:1	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C57H104O6	Triacylglycerol	10.73
979.8079_963.8 411_958.8925	11.81	TG 58:3 TG 22:0_18:1_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C61H112O6	Triacylglycerol	10.50
977.7941_961.8 201_956.8676	11.53	TG 58:4 TG 18:1_22:1_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C61H110O6	Triacylglycerol	8.60
930.8611	11.41	TG 56:3 TG 18:1_18:1_20:1	[M+NH4]+	2a	m/z, RT	C59H108O6	Triacylglycerol	7.05
898.7927_903.7 485	10.31	TG 54:5 TG 18:1_18:2_18:2	[M+NH4]+_[M+Na]+	1	m/z, MS/MS, RT	C57H100O6	Triacylglycerol	6.90
960.9102_965.8 542_981.8278	11.98	TG 58:2 TG 22:0_18:1_18:1	[M+NH4]+_[M+Na]+_[M+K]+	1	m/z, MS/MS, RT	C61H114O6	Triacylglycerol	6.43
921.7391_905.7 672_900.8184	10.69	TG 54:4 TG 18:1_18:1_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C57H102O6	Triacylglycerol	6.00
986.917	12.03	TG 60:3 TG 24:0_18:1_18:2	[M+NH4]+	2b	m/z, MS/MS	C63H116O6	Triacylglycerol	5.33
993.8839_1009. 8556_988.9398	12.13	TG 60:2 TG 24:0_18:1_18:1	[M+Na]+_[M+K]+_[M+NH4]+	1	m/z, MS/MS, RT	C63H118O6	Triacylglycerol	4.31
932.8668_953.7 968	11.75	TG 56:2 TG 20:0_18:1_18:1	[M+NH4]+_[M+K]+	1	m/z, MS/MS, RT	C59H110O6	Triacylglycerol	4.24
933.7853_949.7 598_928.8427	11.10	TG 56:4 TG 18:1_20:1_18:2	[M+Na]+_[M+K]+_[M+NH4]+	1	m/z, MS/MS, RT	C59H106O6	Triacylglycerol	3.55
881.7598_897.7 347_876.8074	10.99	TG 52:2 TG 16:0_18:1_18:1	[M+Na]+_[M+K]+_[M+NH4]+	1	m/z, MS/MS, RT	C55H102O6	Triacylglycerol	3.37
984.8951_1005. 8330	11.87	TG 60:4 TG 18:1_24:1_18:2	[M+NH4]+_[M+K]+	1	m/z, MS/MS, RT	C63H114O6	Triacylglycerol	2.68
909.8022_925.7 759_904.8306	11.42	TG 54:2 TG 18:0_18:1_18:1	[M+Na]+_[M+K]+_[M+NH4]+	1	m/z, MS/MS, RT	C57H106O6	Triacylglycerol	1.93
1037.889_1021. 9243_1016.9614	12.22	TG 62:2	[M+K]+_[M+Na]+_[M+NH4]+	2a	m/z, RT	C65H122O6	Triacylglycerol	1.65
659.5071_643.5 297_638.5728	7.12	DG 36:2 DG 18:1_18:1	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C39H72O5	Diacylglycerols	1.53
872.7745	10.29	TG 52:4 TG 16:1_18:1_18:2	[M+NH4]+	1	m/z, MS/MS, RT	C55H98O6	Triacylglycerol	1.22

895.7213_879.7 471_874.7914	10.63	TG 52:3 TG 16:0_18:1_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C55H100O6	Triacylglycerol	1.20
917.7013_901.7 272_896.7706	9.93	TG 54:6 TG 18:2_18:2_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C57H98O6	Triacylglycerol	1.15
657.4871_641.5 132_636.5561	6.58	DG 36:3 DG 18:1_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C39H70O5	Diacylglycerols	0.87
959.8052_954.8 490_975.7749	11.16	TG 58:5 TG 22:1_18:2_18:2	[M+Na]+_[M+NH4]+_[M+K]+	1	m/z, MS/MS, RT	C61H108O6	Triacylglycerol	0.81
947.7493_931.7 764_926.8237	10.74	TG 56:5 TG 20:1_18:2_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C59H104O6	Triacylglycerol	0.76
974.9140_979.8 685	12.08	TG 59:2	[M+NH4]+_[M+Na]+	2a	m/z, RT	C62H116O6	Triacylglycerol	0.66
878.8253	11.40	TG 52:1 TG 16:0_18:0_18:1	[M+NH4]+	1	m/z, MS/MS, RT	C55H104O6	Triacylglycerol	0.65
993.8309_977.8 547_972.8976	11.93	TG 59:3 TG 23:0_18:1_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C62H114O6	Triacylglycerol	0.58
962.9131	12.14	TG 58:1	[M+NH4]+	2a	m/z, RT	C61H116O6	Triacylglycerol	0.47
906.8511_927.7 825	11.74	TG 54:1 TG 18:0_18:0_18:1	[M+NH4]+_[M+K]+	1	m/z, MS/MS, RT	C57H108O6	Triacylglycerol	0.44
911.7518_895.7 775_890.8185	11.23	TG 53:2 TG 17:0_18:1_18:1	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C56H104O6	Triacylglycerol	0.44
934.8787	12.01	TG 56:1 TG 16:0_22:0_18:1	[M+NH4]+	2b	m/z, MS/MS	C59H112O6	Triacylglycerol	0.42
967.8142_951.8 406_946.8867	11.92	TG 57:2 TG 21:0_18:1_18:1	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C60H112O6	Triacylglycerol	0.41
1014.9418_1035 .8682	12.16	TG 62:3	[M+NH4]+_[M+K]+	2a	m/z, RT	C65H120O6	Triacylglycerol	0.39
696.6494_701.6 060	8.97	DG 40:1 DG 22:0_18:1	[M+NH4]+_[M+Na]+	2b	m/z, MS/MS	C43H82O5	Diacylglycerols	0.38
853.7298_869.7 048_848.7749	10.61	TG 50:2 TG 16:0_16:1_18:1	[M+Na]+_[M+K]+_[M+NH4]+	1	m/z, MS/MS, RT	C53H98O6	Triacylglycerol	0.34
851.7112_867.6 879_846.7594	10.25	TG 50:3 A	[M+Na]+_[M+K]+_[M+NH4]+	2a	m/z, RT	C53H96O6	Triacylglycerol	0.30
976.8957	11.12	TG 58:2;1O TG 22:0_18:1_18:1;1O	[M+NH4]+	2b	m/z, MS/MS	C61H114O7	Oxidized triglyceride	0.25
855.7427_850.7 925	10.99	TG 50:1 TG 16:0_16:0_18:1	[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C53H100O6	Triacylglycerol	0.25
909.7307_893.7 579_888.8032	10.86	TG 53:3 TG 17:0_18:1_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C56H102O6	Triacylglycerol	0.23

724.6851_729.6 406	9.53	DG 42:1 DG 24:0_18:1	[M+NH4]+_[M+Na]+	2b	m/z, MS/MS	C45H86O5	Diacylglycerols	0.18
937.764_921.79 19_916.8352	11.23	TG 55:3 TG 18:1_18:1_19:1	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C58H106O6	Triacylglycerol	0.17
918.8124	9.87	TG 54:3;1O TG 18:1_18:1_18:1;1O	[M+NH4]+	2b	m/z, MS/MS	C57H104O7	Oxidized triglyceride	0.15
972.8616	10.38	TG 58:4;1O TG 18:1_18:2_22:1;1O	[M+NH4]+	2b	m/z, MS/MS	C61H110O7	Oxidized triglyceride	0.14
633.4877_617.5 115_612.5547	7.06	DG 34:1 DG 16:0_18:1	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C37H70O5	Diacylglycerols	0.14
655.472_639.49 88_634.5423	6.04	DG 36:4 DG 18:2_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C39H68O5	Diacylglycerols	0.14
944.867	11.63	TG 57:3 TG 21:0_18:1_18:2	[M+NH4]+	2b	m/z, MS/MS	C60H110O6	Triacylglycerol	0.13
891.6811_875.7 121_870.7532	9.90	TG 52:5 TG 18:1_16:2_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C55H96O7	Triacylglycerol	0.12
661.5183_645.5 452_640.5891	7.73	DG 36:1 DG 18:0_18:1	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C39H74O5	Diacylglycerols	0.11
974.8779	10.74	TG 58:3;1O TG 18:1_18:1_22:1;1O	[M+NH4]+	2b	m/z, MS/MS	C61H112O7	Oxidized triglyceride	0.10
844.7417	9.90	TG 50:4 TG 14:1_18:1_18:2	[M+NH4]+	2b	m/z, MS/MS	C53H94O6	Triacylglycerol	0.09
970.8812	11.69	TG 59:4 TG 23:0_18:2_18:2	[M+NH4]+	2b	m/z, MS/MS	C62H112O6	Triacylglycerol	0.09
923.8068_918.8 463	11.60	TG 55:2 TG 18:0_17:1_20:1	[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C58H108O6	Triacylglycerol	0.08
1012.926	12.06	TG 62:4 TG 26:0_18:2_18:2	[M+NH4]+	1	m/z, MS/MS, RT	C65H118O6	Triacylglycerol	0.08
982.8835	11.49	TG 60:5	[M+NH4]+	2a	m/z, RT	C63H112O6	Triacylglycerol	0.07
886.7846_907.7 150	10.49	TG 53:4 TG 17:1_18:1_18:2	[M+NH4]+_[M+K]+	1	m/z, MS/MS, RT	C56H100O6	Triacylglycerol	0.06
722.6694_743.6 091	9.09	DG 42:2 DG 24:0_18:2	[M+NH4]+_[M+K]+	2b	m/z, MS/MS	C45H84O5	Diacylglycerols	0.06
915.684_899.71 14_894.7565	9.54	TG 54:7 TG 18:2_18:2_18:3	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C57H96O6	Triacylglycerol	0.06
631.476_615.49 95_610.5392	6.52	DG 34:2 DG 16:0_18:2	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C37H68O5	Diacylglycerols	0.06
843.6837_827.7 095_822.7546	10.59	TG 48:1 TG 14:0_16:0_18:1	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C51H96O6	Triacylglycerol	0.06
916.7979	9.46	TG 54:4;1O TG 18:1_18:2_18:1;1O	[M+NH4]+	2b	m/z, MS/MS	C57H102O7	Oxidized triglyceride	0.05
666.6044_671.5 598	7.74	DG 38:2 DG 18:1_20:1	[M+NH4]+_[M+Na]+	2b	m/z, MS/MS	C41H76O5	Diacylglycerols	0.05

841.6709_825.6 935_820.7418	10.18	TG 48:2	[M+K]+_[M+Na]+_[M+NH4]+	2a	m/z, RT	C51H94O6	Triacylglycerol	0.05
914.8154	10.89	TG 55:4 TG 18:1_19:1_18:2	[M+NH4]+	2b	m/z, MS/MS	C58H104O6	Triacylglycerol	0.05
818.7216	9.90	TG 48:3 TG 14:0_16:1_18:2	[M+NH4]+	2b	m/z, MS/MS	C51H92O6	Triacylglycerol	0.04
1002.9177	11.36	TG 60:3;1O TG 18:1_20:1_22:1;1O	[M+NH4]+	2b	m/z, MS/MS	C63H116O7	Oxidized triglyceride	0.04
948.8986	12.08	TG 57:1	[M+NH4]+	2a	m/z, RT	C60H114O6	Triacylglycerol	0.04
1042.9739	12.23	TG 64:3	[M+NH4]+	2a	m/z, RT	C67H124O6	Triacylglycerol	0.04
883.7145_867.7 424_862.7841	10.84	TG 51:2 TG 16:0_17:1_18:1	[M+K]+_[M+Na]+_[M+NH4]+	1	m/z, MS/MS, RT	C54H100O6	Triacylglycerol	0.04
860.7714	10.51	TG 51:3 TG 15:1_18:1_18:1	[M+NH4]+	2b	m/z, MS/MS	C54H98O6	Triacylglycerol	0.04
892.8317	11.58	TG 53:1 TG 17:0_18:0_18:1	[M+NH4]+	1	m/z, MS/MS, RT	C56H106O6	Triacylglycerol	0.04
864.8019	11.22	TG 51:1 TG 16:0_17:0_18:1	[M+NH4]+	1	m/z, MS/MS, RT	C54H102O6	Triacylglycerol	0.04
694.6366	8.35	DG 40:2 DG 18:1_22:1	[M+NH4]+	2b	m/z, MS/MS	C43H80O5	Diacylglycerols	0.02
668.6227_673.5 733	8.38	DG 38:1 DG 20:0_18:1	[M+NH4]+_[M+Na]+	2b	m/z, MS/MS	C41H78O5	Diacylglycerols	0.02
946.8414	9.54	TG 56:3;1O TG 20:1_18:2_18:0;1O	[M+NH4]+	2b	m/z, MS/MS	C59H108O7	Oxidized triglyceride	0.02
920.8729	11.91	TG 55:1	[M+NH4]+	2a	m/z, RT	C58H110O6	Triacylglycerol	0.02
970.8424	10.03	TG 58:5;1O TG 18:2_18:2_22:1;1O	[M+NH4]+	2b	m/z, MS/MS	C61H108O7	Oxidized triglyceride	0.02
842.7237	9.50	TG 50:5	[M+NH4]+	2a	m/z, RT	C53H92O6	Triacylglycerol	0.02
914.7808	9.15	TG 54:5;1O TG 18:1_18:2_18:2;1O	[M+NH4]+	2b	m/z, MS/MS	C57H100O7	Oxidized triglyceride	0.02
664.5866	7.22	DG 38:3 DG 20:1_18:2	[M+NH4]+	2b	m/z, MS/MS	C41H74O5	Diacylglycerols	0.02
1044.9919	12.30	TG 64:2	[M+NH4]+	2a	m/z, RT	C67H126O6	Triacylglycerol	0.02
964.9267	12.21	TG 58:0	[M+NH4]+	2a	m/z, RT	C61H118O6	Triacylglycerol	0.02
202.1894	0.45	NAE 9:0	[M+H]+	2b	m/z, MS/MS	C11H23NO2	Amines	0.02
818.7230_823.6 804	9.75	TG 48:3 TG 12:0_18:1_18:2	[M+NH4]+_[M+Na]+	1	m/z, MS/MS, RT	C51H92O6	Triacylglycerol	0.02
794.7263_799.6 751	10.16	TG 46:1	[M+NH4]+_[M+Na]+	2a	m/z, RT	C49H92O6	Triacylglycerol	0.02
952.8367	10.78	TG 58:6	[M+NH4]+	2a	m/z, RT	C61H106O6	Triacylglycerol	0.01
752.7138	10.04	DG 44:1 DG 26:0_18:1	[M+NH4]+	2b	m/z, MS/MS	C47H90O5	Diacylglycerols	0.01
836.7705	10.81	TG 49:1	[M+NH4]+	2a	m/z, RT	C52H98O6	Triacylglycerol	0.01
884.7700_889.7 270	10.09	TG 53:5	[M+NH4]+_[M+Na]+	2a	m/z, RT	C56H98O6	Triacylglycerol	0.01
991.8675_1007. 8397	11.95	TG 60:3	[M+Na]+_[M+K]+	2a	m/z, RT	C63H116O6	Triacylglycerol	0.01
692.6197	7.85	DG 40:3 DG 22:1_18:2	[M+NH4]+	2b	m/z, MS/MS	C43H78O5	Diacylglycerols	0.01

912.7636	8.73	TG 54:6;1O TG 18:2_18:2_18:2;1O	[M+NH4]+	2b	m/z, MS/MS	C57H98O7	Oxidized triglyceride	0.01
374.3294	2.87	MG 18:1	[M+NH4]+	2b	m/z, MS/MS	C21H40O4	Monoacylglycerols	0.01
356.3564	4.13	NAE 20:0	[M+H]+	2b	m/z, MS/MS	C22H45NO2	Amines	0.01
608.5269	5.96	DG 34:3	[M+NH4]+	2a	m/z, RT	C37H66O5	Diacylglycerols	0.01
694.6561	10.94	CE 20:2	[M+NH4]+	2a	m/z, RT	C47H80O2	Steroid esters	< 0.01
856.7423	9.69	TG 51:5	[M+NH4]+	2a	m/z, RT	C54H94O6	Triacylglycerol	< 0.01
816.7056	9.34	TG 48:4	[M+NH4]+	2a	m/z, RT	C51H90O6	Triacylglycerol	< 0.01
851.7086	10.40	TG 50:3 B	[M+Na]+	2a	m/z, RT	C53H96O6	Triacylglycerol	< 0.01
632.5263	5.59	DG 36:5	[M+NH4]+	2a	m/z, RT	C39H66O5	Diacylglycerols	< 0.01

Table S7. Annotated compounds and their total compound contribution (%) in pracaxi SFE extract after GC-Q-TOF MS analysis.

Average RT (min)	Metabolite name	MSI Level	MSI Level	Molecular Formula	Compound subclass	Total compound contribution (%)
19.829	Oleic acid	1	MS, RT	C18H34O2	Fatty acids and conjugates	11.87
18.247	Palmitic acid	1	MS, RT	C16H32O2	Fatty acids and conjugates	11.34
20.054	Stearic acid	1	MS, RT	C18H36O2	Fatty acids and conjugates	6.94
9.355/9.572	Glycerol	1	MS, RT	C3H8O3	Carbohydrates and carbohydrate conjugates	6.63
24.122	1-monooleoylglycerol	1	MS, RT	C21H40O4	Monoacylglycerols	6.61
24.721	Lignoceric acid	1	MS, RT	C24H48O2	Fatty acids and conjugates	6.27
7.675	Alanine, N-methyl-N-allyloxycarbonyl-, undecyl ester	2	MS	C19H35NO4	Amino acids, peptides, and analogues	5.94
7.664	2-Pyrrolidinone	1	MS, RT	C4H7NO	Pyrrolidones	5.89
19.77	Linoleic acid	1	MS, RT	C18H32O2	Linoleic acids and derivatives	3.66
7.441/9.106	Oxalic acid	1	MS, RT	C2H2O4	Dicarboxylic acids and derivatives	3.29
16.58	Tagatose	2	MS	C6H12O6	Carbohydrates and carbohydrate conjugates	2.60
25.822	gamma-tocopherol	1	MS, RT	C28H48O2	Quinone and hydroquinone lipids	2.54
16.484	Uridine	2	MS	C9H12N2O6	Pyrimidine nucleosides	1.98
7.219/7.241	Hydroxylamine	1	MS, RT	H3NO	Homogeneous other non-metal compounds	1.45
9.887	Methylmalonic acid	2	MS	C4H6O4	Dicarboxylic acids and derivatives	1.23
9.905	Succinic acid	1	MS, RT	C4H6O4	Dicarboxylic acids and derivatives	0.96
24.585	Squalene	1	MS, RT	C30H50	Triterpenoids	0.82
27.695/28.082	Stigmasterol	2	MS	C29H48O	Stigmastanes and derivatives	0.78
11.103	4-aminobutyric acid	2	MS	C4H9NO2	Amino acids, peptides, and analogues	0.76
7.085	2-methyl-5-aminobenzoxazole	2	MS	C8H8N2O	Benzoxazoles	0.74
15.627	D-(+)-Glucuronic acid .gamma.-lactone, tris(trimethylsilyl) ether, methyloxime (anti)	2	MS	C16H35NO6 Si3	Gamma butyrolactones	0.69
16.482	D-(-)-Fructose	1	MS, RT	C6H12O6	Carbohydrates and carbohydrate conjugates	0.65
22.951	Behenic acid	2	MS	C22H44O2	Fatty acids and conjugates	0.64
6.274	L-norvaline	2	MS	C5H11NO2	Amino acids, peptides, and analogues	0.55
16.614/16.742	Gluconolactone	1	MS, RT	C6H10O6	Carbohydrates and carbohydrate conjugates	0.53
7.833	3-hydroxybutyric acid	1	MS, RT	C4H8O3	Beta hydroxy acids and derivatives	0.52
6.535	Lactic acid	1	MS, RT	C3H6O3	Alpha hydroxy acids and derivatives	0.49
10.307	2-oxohexanoic acid	2	MS	C6H10O3	Medium-chain keto acids and derivatives	0.47

26.763	alpha-tocopherol	1	MS, RT	C29H50O2	Quinone and hydroquinone lipids	0.45
22.175	(Z)-Docos-9-enenitrile	2	MS	C22H41N	Organic cyanides	0.42
17.82	7-Tetradecenal, (Z)-	2	MS	C14H26O	Fatty aldehydes	0.41
16.28	Myristic acid	2	MS	C14H28O2	Fatty acids and conjugates	0.39
24.341	Undec-10-ynoic acid, undec-2-en-1-yl ester	2	MS	C22H38O2	Fatty alcohol esters	0.38
17.13	Sedoheptulose	1	MS, RT	C7H14O7	Carbohydrates and carbohydrate conjugates	0.37
24.439	Methyl 22-methyl-tetracosanoate	2	MS	C26H52O2	Fatty acid esters	0.37
7.569	p-dichlorobenzene	2	MS	C6H4Cl2	Halobenzenes	0.36
22.857	1-monopalmitin	1	MS, RT	C19H38O4	Monoacylglycerols	0.35
28.629	Cycloartenol	2	MS	C30H50	Cycloartanols and derivatives	0.34
18.783	trans-13-Octadecenoic acid	2	MS	C18H34O2	Fatty acids and conjugates	0.33
26.073	Cerotic acid	2	MS	C26H52O2	Fatty acids and conjugates	0.29
14.456	D-xylulose	2	MS	C5H10O5	Carbohydrates and carbohydrate conjugates	0.27
8.231	D-(−)-Pantolactone	2	MS	C6H10O3	Gamma butyrolactones	0.27
12.059	5-Hydroxymaltol	2	MS	C6H6O4	Pyranones and derivatives	0.27
26.91	Propyl docosanoate	2	MS	C25H50O2	Fatty acid esters	0.27
12.76	L-Iditol	2	MS	C6H14O6	Carbohydrates and carbohydrate conjugates	0.27
17.989	Palmitelaidic acid	1	MS, RT	C16H30O2	Fatty acids and conjugates	0.26
24.293	Glycerol monostearate	2	MS	C21H42O4	Monoacylglycerols	0.26
9.022	Eupatoriochromene	2	MS	C13H14O3	1-benzopyrans	0.26
16.665	Andrographolide	2	MS	C20H30O5	Gamma butyrolactones	0.24
10.444	3,4-Dihydroxy-5-methyl-dihydrofuran-2-one	2	MS	C5H8O4	Gamma butyrolactones	0.24
12.562	L-pyroglutamic acid	1	MS, RT	C5H7NO3	Amino acids, peptides, and analogues	0.24
27.297	Benzoic acid, 2-heptafluorobutyryloxy-, tert.-butyldimethylsilyl ester	2	MS	C17H19F7O 4Si	Benzoic acids and derivatives	0.23
8.624	1-methoxy-2-propanol	2	MS	C4H10O2	Alcohols and polyols	0.23
11.105	Ethanolamine	2	MS	C2H7NO	Amines	0.23
15.223	3,6-anhydro-D-galactose	1	MS, RT	C6H10O5	Tetrahydrofurans	0.23
8.509	3-hydroxyisovaleric acid	1	MS, RT	C5H10O3	Fatty acids and conjugates	0.22
9.054	Benzoic acid	1	MS, RT	C7H6O2	Benzoic acids and derivatives	0.20
14.135	Lauric acid	1	MS, RT	C12H24O2	Fatty acids and conjugates	0.20
16.738	Dihydroconiferylic acid	2	MS	C10H12O4	Phenylpropanoic acids	0.20
10.694	Erythronic acid lactone	1	MS, RT	C4H6O4	Gamma butyrolactones	0.19
22.444	Methyl behenate	1	MS, RT	C23H46O2	Fatty acid esters	0.19

9.252	Octanoic acid	1	MS, RT	C8H16O2	Fatty acids and conjugates	0.19
8.894	Urea	1	MS, RT	CH4N2O	Ureas	0.18
24.958	Benzene, 1,2-bis(9-borabicyclo[3.3.1]non-9-yloxyethyl)-1,4-Benzenediamine, N-(1-methylethyl)-N'-phenyl-	2	MS	C24H36B2O ₂	Borinanes	0.16
18.972		2	MS	C15H18N2	Amines	0.16
13.692	Glutaconic acid	2	MS	C5H6O4	Dicarboxylic acids and derivatives	0.16
23.862	2-monoolein	1	MS, RT	C21H40O4	Monoacylglycerols	0.16
28.103	beta-sitosterol	2	MS	C29H50O	Stigmastanes and derivatives	0.13
10.537	Pelargonic acid	1	MS, RT	C9H18O2	Fatty acids and conjugates	0.13
21.67	1-Pentadecyne	2	MS	C15H28	Acetylides	0.13
6.282	1,3-propanediol	1	MS, RT	C3H8O2	Alcohols and polyols	0.13
8.318	Malonic acid	1	MS, RT	C3H4O4	Dicarboxylic acids and derivatives	0.12
17.076	Methyl palmitate	1	MS, RT	C17H34O2	Fatty acid esters	0.12
18.675	Ferulic acid	1	MS, RT	C10H10O4	Hydroxycinnamic acids and derivatives	0.12
14.104	D-(+)-Ribono-1,4-lactone	2	MS	C5H8O5	Carbohydrates and carbohydrate conjugates	0.10
15.387	Arabinofuranose	2	MS	C5H10O5	Carbohydrates and carbohydrate conjugates	0.10
11.07	5-hydroxymethylfurfural	2	MS	C6H6O3	Carbonyl compounds	0.10
19.168	Margaric acid	1	MS, RT	C17H34O2	Fatty acids and conjugates	0.09
16.447	Senecioic acid	2	MS	C5H8O2	Fatty acids and conjugates	0.08
26.517	nonacosane	2	MS	C29H60	Alkanes	0.08
11.536	Reticuline, 6'-methyl	2	MS	C20H25NO4	Benzylisoquinolines	0.08
15.994	1-Tetradecyne	2	MS	C14H26	Acetylides	0.08
17.194/17.204	Coniferyl alcohol	2	MS	C10H12O3	Methoxyphenols	0.07
19.023	Methyl stearate	1	MS, RT	C19H38O2	Fatty acid esters	0.07
22.491	alpha-Lactose	1	MS, RT	C12H22O11	Carbohydrates and carbohydrate conjugates	0.07
23.221	Sucrose	1	MS, RT	C12H22O11	Carbohydrates and carbohydrate conjugates	0.07
15.547	D-(+)-Ribofuranose	2	MS	C5H10O5	Carbohydrates and carbohydrate conjugates	0.07
23.973	Methyl lignocerate	1	MS, RT	C25H50O2	Fatty acid esters	0.06
16.438	Methyl-beta-D-galactopyranoside	2	MS	C7H14O6	Carbohydrates and carbohydrate conjugates	0.06
8.86	2-butyne-1,4-diol	1	MS, RT	C4H6O2	Alcohols and polyols	0.06
13.314	3-phenyllactic acid	1	MS, RT	C9H10O3	Phenylpropanoic acids	0.05
25.154	delta-tocopherol	2	MS	C27H46O2	Quinone and hydroquinone lipids	0.04
18.719	Methyl linoleate	1	MS, RT	C19H34O2	Linoleic acids and derivatives	0.04
8.406	Aniline	1	MS, RT	C6H7N	Aniline and substituted anilines	0.04
17.209	4-hydroxycinnamic acid	1	MS, RT	C9H8O3	Hydroxycinnamic acids and derivatives	0.04

22.762	Brassidic acid	2	MS	C22H42O2	Fatty acids and conjugates	0.04
9.723	2-phenylacetic acid	2	MS	C8H8O2	Benzene and substituted derivatives	0.04
14.673	1,6-Anhydro-beta-D-glucose	1	MS, RT	C6H10O5	Oxepanes	0.03
15.934	Citric acid	1	MS, RT	C6H8O7	Tricarboxylic acids and derivatives	0.03
16.705	Glucopyranose	2	MS	C6H12O6	Carbohydrates and carbohydrate conjugates	0.03
17.282	Pentadecanoic acid	2	MS	C15H30O2	Fatty acids and conjugates	0.03
10.209	Uracil	1	MS, RT	C4H4N2O2	Pyrimidines and pyrimidine derivatives	0.03
17.555	D-lyxose	2	MS	C5H10O5	Carbohydrates and carbohydrate conjugates	0.03
9.298	1-(2-Ethyl-[1,3]dithian-2-yl)-3-methyl-butan-1-ol	2	MS	C11H22OS2	Dithioacetals	0.03
11.787	Capric acid	2	MS	C10H20O2	Fatty acids and conjugates	0.02
18.618	Oleonitrile	2	MS	C18H33N	Organic cyanides	0.02
15.478	D-(-)-Tagatofuranose	2	MS	C6H12O6	Carbohydrates and carbohydrate conjugates	0.02
22.308	L-(+)-Rhamnopyranose	2	MS	C6H12O5	Carbohydrates and carbohydrate conjugates	0.02
13.191	Tyrosol	1	MS, RT	C8H10O2	Tyrosols and derivatives	0.02
20.799	Methyl arachidate	1	MS, RT	C21H42O2	Fatty acid esters	0.01

Table S8. PLE conditions, desirability and predicted response values at the optimum conditions predicted by the model, and experimental response values for the selected optimum conditions.

	Including Extraction yield as response variable		Excluding Extraction yield as response variable	
	Predicted Optimum	Experimental Optimum (80% EtOH at 180 °C)	Predicted Optimum	Experimental Optimum (12.5% ethanol at 180 °C)
	Temperature (°C)	180	180	180
Solvent composition (% EtOH)	80.2	80	12.6	12.5
Desirability	0.934953		1.0000	
Response variable				
Extraction yield	21.22	24.0 ± 3.0		
ROS	2.94	1.5 ± 1.0	1.98798	1.6 ± 1.0
TPC	168.86	91.9 ± 0.9	176.595	103.9 ± 0.5
AChE	247.00	276 ± 17	245.516	315 ± 29

Table S9. Tentative identified compounds in pracaxi nuts PLE extracts after HPLC-C18-Q-TOF MS/MS ESI (+/-) analyses.

Co mp oun d nu mbe r	Tentative compound name	Mole cular Form ula	ESI (+)												ESI (-)											
			Peak area												Peak area											
Ret enti on tim e	<i>m/z</i>	Addu ct type	MS/MS Spectra	PLE 12	PLE 12	PLE 12	PLE 80	PLE 80	PLE 80	Ret enti on tim e	<i>m/z</i>	Addu ct type	MS/MS Spectra	PLE 12	PLE 12	PLE 12	PLE 80	PLE 80	PLE 80							
1	Agmatine	C5H1	0.4	131. 129 97 21	[M+H]]+	97.07, 72.08, 60.06, 55.05	202	173	186	115	275	201														
		4N4					825	328	034	397	883	386														
2	L-Arginine	C6H1	0.5	175. 117 37 66	[M+H]]+	70.07, 60.06	465	437	326	191	458	424														
		4N4O 2					561	133	465	129	072	698														
3	Serine	C3H7											0.5	104. 026 45 76	[M- H]-	74.02										
		NO3														265	289	192	121	198	225					
4	D-Asparagine	C4H8											0.5	131. 044 52 05	[M- H]-	113.03, 96.00, 72.01, 71.03,	113	114	327	351	629	118				
		N2O3														270	454	167	796	49	587					

ID	Chemical Name	Chemical Formula	RT (min)	m/z	Mass Spectrum Data										Chromatogram Data		RT Range (min)	RT Peak (min)		
					[M+H] [+]	74.06, 56.05	57.03, 989	163 612	167 685	142 232	108 263	234 659	142	Intensity (%)	RT (min)	Intensity (%)				
5	Threonine	C4H9NO3	0.5	120. 065 54 19	[M+H] [+]	74.06, 56.05	57.03, 989	163 612	167 685	142 232	108 263	234 659	142	70.03, 58.03	RT (min)	Intensity (%)	RT Range (min)	RT Peak (min)		
6	D-Arabinonic acid	C5H1O06												87.01, 75.01, 72.99, 71.01, 59.01 195.05, 129.02, 99.01, 89.02, 87.01, 254 608 332 748 277	RT (min)	Intensity (%)	RT Range (min)	RT Peak (min)		
7	Galactonic acid	C6H1O207												126 850 1 475 827	RT (min)	Intensity (%)	RT Range (min)	RT Peak (min)		
8	Choline cation	C5H14NO	0.5	104. 099 85 43	[M]+	104.11, 60.08, 59.07, 58.06	181 161 85	107 880 31	186 397 26	146 694 55	175 193 03	153 260 08	0.5 72	165. 031 63 195. 041 93 149. 045 87	[M- H]-	72.22, 60.08, 59.07, 58.06, 44.04, 43.03, 42.02, 41.01, 39.00, 38.00, 37.00, 36.00, 35.00, 34.00, 33.00, 32.00, 31.00, 30.00, 29.00, 28.00, 27.00, 26.00, 25.00, 24.00, 23.00, 22.00, 21.00, 20.00, 19.00, 18.00, 17.00, 16.00, 15.00, 14.00, 13.00, 12.00, 11.00, 10.00, 9.00, 8.00, 7.00, 6.00, 5.00, 4.00, 3.00, 2.00, 1.00, 0.00	RT (min)	Intensity (%)	RT Range (min)	RT Peak (min)
9	D-Lyxose	C5H1O05												106 441 7 429 571	RT (min)	Intensity (%)	RT Range (min)	RT Peak (min)		
10	Glycerophosphocholine	C8H2ONO6P	0.6	258. 108 16 12	[M+H] [+]	258.11, 184.07, 125.00, 104.11	426 875	429 884	328 050	150 065	230 162	161 092	0.6 11	71.01, 59.01	[M- H]-	251 990 262 958 142 933 235 10 411 18 61	RT (min)	Intensity (%)	RT Range (min)	RT Peak (min)

11	L-Monomethyl arginine	C7H16N4O2	0.6 18	116. 072 00	[M+H] - C2H7 N3]+	974	107	119	697	116	797	179.06 [M- H- C6H10O5]-,							
						929	119	655	761	715	126								
12	4-O-beta-D-galactopyranosyl-D-mannopyranose	C12H22O11	0.6 28	365. 107 76	[M+N] a]+	365.10, 203.06, 185.04	127	101	159	104	946	116	0.6 341. 110 05						
						340	456	954	812	75	973	40	[M- H]-	119.04, 101.03, 931	342	289	349	322	384
			0.6 40	360. 148 96	[M+N] H4]+	123 010	145 824	166 522	125 802	139 293	135 687	0.6 377. 081 34 51	89.03, 71.01, 59.01 377.08 [M+Cl]-, 341.11 [M- H]-, 179.06 [M-H- C6H10O5]-,	281	283	311	252	294	254
						1 5	0	8	9	5			161.04, 143.03, 119.03, 101.02, 89.02, 71.01, 59.01	860	056	274	631	959	223

15	5-Hydroxy-2-methylpyridine	C6H7 NO	0.6 73	110. 062 35	[M+H]] +	110.06, 95.04, 94.03, 82.06, 81.06, 80.05, 67.04, 65.04	183 427 0	208 431 3	177 397 1	147 777 6	130 499 6	197 779 8	
16	Betaine	C5H1 1NO2	0.6 74	118. 084 70	[M+H]] +	118.09, 59.07, 58.06	117 016 5	141 537 1	155 293 7	125 971 9	251 672 3	121 978 5	
17	Malic acid	C4H6 O5											0.6 77
18	Cadaverine	C5H1 4N2	0.6 78	86.0 951 7	[M+H] - NH3] +	86.10, 69.07	147 777	145 973	132 977	438 966	324 936	386 118	133. 014 33
19	His-Pro	C11H 16N4 O3	0.6 80	235. 119 13	[M+H] - H2O] +	207.13, 166.06, 162.10, 110.07, 82.05, 70.07	860 358 4	104 810 386	950 877 044	877 173 9	106 173 9	920 442	133. 014 33
20	N-Methyl-L-leucine	C7H1 5NO2	0.6 81	100. 111 54	[M+H] - CH2 O2]+	100.11, 58.07	454 85	566 96	305 93	221 892 6	102 508 7	112 019 9	133. 014 33

						188.07 [M+H-] NH3]+,																
						2.8	205.	[M+H]	170.06, 159.09, 146.06, 144.08,	813	110	131	513	243	136							
37	L-Tryptophan	C11H 12N2 O2				2.8	097	[M+H]]+	132.08, 131.07, 118.06		297	036	464	467	033							
						2.8	188.	[M+H]	188.11 [M+H-] NH3]+,	219	327	102	325	720	136							
38	N-Acetyl-DL- valine	C7H1 3NO3	3.0 14	114. 090 03	-	2.8	072	[M+H] -	170.06, 146.06, 144.08, 143.07,	496	150	562	38	029	655							
						2.8	77	NH3] +	118.06, 91.05													
39	N-L-gamma.- Glutamyl-L- leucine	C11H 20N2 O5	3.0 61	261. 144 38	[M+H]]+	2.9	244.12, 198.11, 132.10, 130.05, 86.10, 84.04	177	549	182	779	247	121	2.9	259. 131 32	241.12, 197.13, 130.08, 128.04	490	477	461	268	581	378
						2.9	144	[M+H]]+	190	550	891	884	387	949	03	131 32	197.13, 130.08, 128.04	800	755	486	283	832
40	3,4- Dihydroxyben- zaldehyde	C7H6 O3				3.0	33	[M- H]-	137. 136.02, 119.01,	600	653	411	186	189	288							
						3.0	33	[M- H]-	137. 136.02, 119.01,	277	845	216	937	561	094							

41	N-(3-(Aminomethyl)benzyl)acetimidine	C10H15N3	3.1	178.13219	[M+H] ⁺	178.13, 161.11, 120.08	107	639	345	135	107	113							109.03, 108.02, 81.03	
42	Diethyl L-glutamate	C9H17NO4	3.1	158.0806483	[M+H] ⁻ C2H6O] ⁺	84.04, 56.05	506 282	101 047 009	768	965	798	128								
43	N-N'-bis-(dihydrocaffeyl)spermidine-monoglucoside (+C6H10O5)	C31H45N3O11	3.7	636.3116665	[M+H] ⁺	C6H10O5 ⁺ , 457.23	224 836	270 356	557 888	306 094	102 186 3	527 587	3.6 04	634.29 [M-H] ⁻ [M-H- H2O] ⁻ , 472.24 [M-H- C6H10O5] ⁻						634.29 [M- H] ⁻ , 616.28 [M-H- H2O] ⁻ , 472.24 [M- H- C6H10O5] ⁻

48	N-coumaroyl-N'-dihydrocaffeo yl spermidine	C25H33N3O5	456.25 [M+H]+, 439.23 [M+H- NH3]+, 293.19 [M+H-NH3- coumaroyl]+, 236.13, 221.13, 165.05, 123.04, 112.11, 84.08, 72.08 550.25 [M+H]+,												454.23 [M- H]-, 332.20 [M-H-122]-, 297.15, 249.20, 233.96, 192.02, 123.30, 95.06							
			4.2	456. 249 31	[M+H]]+	565 690 932 209	980 932 209	775 9 1 1	305 512 784 373	145 1 1	351 1	3.8 40	454. 234 25	[M- H]-	297.15, 249.20, 233.96, 192.02, 123.30, 95.06	479 8	525 7	230 3	129 60	483 3	121 07	
49	N-caffeooyl-N'-dihydrocaffeo yl spermidine-conjugate (+C5H2O)	C30H35N3O7	455.22 [M+H- C5H5NO]+, 383.16, 342.13, 326.10, 285.08, 243.07, 222.11, 165.05, 112.11												548.24 [M- H]-, 453.20 [M-H- C5H5NO]-, 412.19, 326.09, 175.03, 135.04							
			4.2	550. 253 42	[M+H]]+	641 624 916 1	653 973 9 4	257 62 5	385 8 345	389 8	108 345	3.8 86	548. 240 36	[M- H]-	135 43 173 49 153 86 118 5	419 419	107 1					
50	N-caffeooyl-N'-dihydrocaffeo yl spermidine isomer 1	C25H33N3O6	472.24 [M+H]+, 457.23 [M+H- NH]+, 310.21												470.23 [M- H]-, 350.20 [M-H-120]-, 633 301 345 403 370 947 195 476 827 412 308.20 [M-]							
			4.3	472. 244 03	[M+H]]+	147 241 653 2 4	336 421 904 9 4	364 590 5 5	320 590 4 5	681 282 1 1	278 1	3.9 45	470. 227 11	[M- H]-	345 633 370 403 195 947 476 301 827 412	308.20 [M-]						

51	N-N'-bis-(dihydrocaffeoyle spermidine-monoglucoside (+C6H10O4)	C31H45N3O10	4.3 27	620. 315 61	[M+H]]+	[M+H- NH3- caffeoyl]+, 293.19 [M+H- caffeoyl]-, 186.16 [M- H-caffeoyl- 122]-, 161.02	620.32 [M+H]+, 602.31 [M+H- H2O]+, 584.29 [M+H-H2O- H2O]+, 566.28 [M+H-H2O- H2O]+, 168 474.26 [M+H- C6H10O4]+, 457.23 [M+H- C6H10O4- NH3]+, 293.18 [M+H- C6H10O4- NH3- dihydrocaffeo	118 012 0 3 872 216 517 291 961 264 824					

54	N-N'-bis-(dihydrocaffeoyl)spermidine-conjugate (+C5H2)	C30H37N3O6	4.4	536.68	[M+H] ⁺	dihydrocaffeo yl]+, 236.13, 222.11, 206.12, 165.05, 123.04, 107.05, 100.07, 72.08 536.27 [M+H] ⁺ , 457.23 [M+H- C5H5N]+, 293.19 [M+H- C5H5N- dihydrocaffeo yl]+, 236.13, 222.11, 165.05, 72.08 472.25 [M+H] ⁺ , 455.22 [M+H- NH3]+, 310.21 [M+H- caffeoyl]+, 293.19 [M+H- NH3- caffeoyl]+,	274 23		246 781 2 1 0 8 3 4	215 276 292 287 501 129	221 292 287 501 129	452 501 8 3 4	470 470 3 2 5	401	121.03, 58.03							
55	N-caffeoyl-N'-dihydrocaffeo-yl spermidine isomer 2	C25H33N3O6	4.5	472.19	[M+H] ⁺			731 814	852 695	103 287 7	883 189	247 739	103 290	4.1 67 49	470. 229 49	[M- H]- caffeoyl]-, 186.16 [M- H-caffeoyl- 122]-,	308.20 [M- H- caffeoyl]-, 323 08	604 39	180 04	848 04	356 884	924 63

56	N-N'-bis-(dihydrocaffeyl) spermidine-conjugate (+C4H6)	C29H41N3	4.5 38	528. 305 60	[M+H]] +		239.14, 222.11, 220.10, 163.04, 123.04, 72.08 528.31 [M+H] +, 457.23 [M+H- C4H9N] +, 293.19 [M+H- C4H9N- dihydrocaffeo yl] +, 222.11, 126.13	219 50	287 59	109 09	150 292 9	283 047	515 908		161.02, 58.03					
57	N-N'-bis-(dihydrocaffeyl) spermidine-conjugate (+C5H2O) isomer 1	C30H37N3	4.6 34	552. 273 25	[M+H]] +		552.27 [M+H] +, 457.23 [M+H- C5H5NO] +, 293.18 [M+H- C5H5NO- dihydrocaffeo yl] +, 236.12, 222.11, 165.05, 123.04, 112.11	330 581 49	324 528 75	329 430 42	244 440 75	915 647 0	342 980 97	4.3 13	550. 252 87	[M- H]- H-C5H5NO- 122]-, 291.17 [M- H-C5H5NO- dihydrocaffeo yl]-, 279.14, 94.03	550.25 [M- H]-, 455.22 [M-H- C5H5NO]-, 333.18 [M- H-C5H5NO- 122]-, 291.17 [M- H-C5H5NO- dihydrocaffeo yl]-, 279.14, 94.03			

					[M+H-]							
					dihydrocaffeo							
					$\gamma\text{H}_2\text{O}]^+$,							
					293.19 [M+H-]							
					C4H9NO2-							
					dihydrocaffeo							
					$\gamma\text{l}]^+$, 236.13,							
					222.11,							
					165.05,							
					158.12,							
					130.09, 84.08							
					565.30							
					[M+H]+,							
					457.23 [M+H-]							
					C6H8N2]+,							
62	N-N'-bis-(dihydrocaffeoyl) spermidine-conjugate (+C6H5N) isomer 1	C31H40N4 O6	4.831	565.30200	[M+H] ⁺	293.19 [M+H-]	118	124	130	310	237	119
					C6H8N2-	978	556	045	932	388	937	
					dihydrocaffeo	2	1	8	3	6	6	
					$\gamma\text{l}]^+$, 236.13,							
					222.11,							
					165.05,							
					123.04, 112.11							
					585.33							
63	N-N'-bis-(dihydrocaffeoyl) spermidine-	C31H44N4 O7	4.888	585.32916	[M+H] ⁺	[M+H]+,	105	763	787	102	118	109
					541.30 [M+H-]	362	137	317	042	551	622	
					C2H4O]+,	7			6	6	1	
					457.24 [M+H-]							

66	N- dihydrocoum aroyl-N'- dihydrocaffeo yl spermidine conjugate (+C5H2O)	C30H 37N3 O6	5.0 65 27	536. 275 [M+H]] +	177.06, 165.05, 145.03, 123.04, 117.03, 72.08 536.27 [M+H]+, 441.24 [M+H- C5H5NO]+, 293.18 [M+H- C5H5NO- dihydrocoum aroyl]+, 277.19 [M+H- C5H5NO- dihydrocaffeo yl]+, 222.11, 220.13, 206.12, 165.05, 123.04, 112.11, 107.05, 100.07	608 876 9 4 2 9 238 9	623 342 968 867 238 9	578 968 2 9 238 9	205 867 9	513 545 238 9	499 545 9	4.7 19 28	534. 259 [M- H]-	534.26 [M- H]-, 439.22 [M-H- C5H5NO]-, 386.20 [M- H- dihydrocou maroyl]-, 333.17, 307.18, 291.17 [M- H-C5H5NO- dihydrocou maroyl]-, 254.87, 134.89, 94.03	665 10 62 89 44 2 30	923 10 62 89 44 2 30	499 44 2 30	500 44 2 30	458 2 30	470			
67	N-N'-bis- (dihydrocaffeo yl) spermidine-	C30H 38N4 O6	5.0 78 13	551. 286 [M+H]] +	551.29 [M+H]+, 457.23 [M+H- C5H6N2]+,	122 717 2	888 2 40	111 9 2	317 766 9	231 396 2	260 123 9	4.7 49	549. 271 [M- H]-	549.27 [M- H]-, 427.23 [M-H-122]-, 385.22 [M- H]-	540 38 3 004 497 05	100 38 208 3 123 004 108 497 05	208 3 123 004 108 497 05	123 004 108 497 05	108 497 05	644			

70	spermidine- conjugate (+C5H8O2)	C31H 42N4 spermidine- conjugate (+C6H7N)	C3H6O2]+, 457.22 [M+H- C5H11NO2]+, 410.25 [M+H- dihydrocaffeo yl]+, 392.24 [M+H- dihydrocaffeo yl-H2O]+, 336.21 [M+H- C3H6O2- dihydrocaffeo yl]+, 293.17 [M+H- C5H11NO2- dihydrocaffeo yl]+, 222.11, 172.12, 98.08 567.32 [M+H]+, 457.23 [M+H- C6H10N2]+, 293.19 [M+H- C6H10N2- dihydrocaffeo yl]+, 236.13, 222.11,												C3H6O2]-, 450.26 [M- H-122]-, 408.25 [M- H- dihydrocaff eoyl]-, 376.23 [M- H-C3H6O2- 122]-, 334.22 [M- H-C3H6O2- dihydrocaff eoyl]-, 135.05, 121.03 565.30 [M- H]-, 443.26 [M-H-122]-, 423.06, 314 401.25 [M- H- dihydrocaff eoyl]-,							
			5.3 44	567. 317 44 69	[M+H]]+	762 485	654 957	820 331	219 408	388 125	128 254	4.9 51	565. 302 00	[M- H]-	423.06, 401.25 [M- H- dihydrocaff eoyl]-, 236.13, 222.11,	314 5	347 8	383 5	259 94	384 62	783 9	

71	N-N'-bis-(dihydrocaffeoyl)spermidine-conjugate (+C6H5N) isomer 2	C31H40N4O6	5.3 51	565. 302 12	[M+H]] +	1650.5, 123.04, 112.11 565.30 [M+H]+, 457.23 [M+H- C6H8N2]+, 401.25 [M+H- dihydrocaffeo yl]+, 383.24 [M+H- dihydrocaffeo yl-H2O]+, 293.19 [M+H- C6H8N2 - dihydrocaffeo yl]+, 236.13, 222.11, 123.04 502.25 [M+H]+,	747 219 672 220 564 623 176 298 131 892 701 7 4 2	4.9 84 563. 284 24	121.03, 109.08 [M- H]-	593 5 443 3 514 9 461 19 119 24 123														
72	N-N'-bis-(dihydrocaffeoyl)spermidine-conjugate (+CO)	C26H35N3O7	5.3 88	502. 255 19	[M+H]] +	474.26 [M+H- CO]+, 338.21 [M+H- dihydrocaffeo yl]+, 320.20 [M+H- dihydrocaffeo yl-H2O]+,	157 521 162 756 151 267 134 332 215 680 333 7 4 8 6 5 7	5.3 39 500. 237 237 98	500.24 [M- H]-, 378.20 [M-H-122]-, 336.19 [M- dihydrocaff eoyl]-, 214.15 [M- H-122- dihydrocaff	131 657 156 250 858 6 0														

Sample	Retention Time (min)	Molecular Formula	Peak Description	Mass Spectrum Data (m/z)												Chromatogram Data (Intensity)			
				50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	
77 N-N'-bis-(dihydrocaffeoxy)spermidine-conjugate (+C8H9N) isomer 2	C33H44N4O6	5.7	[M+H] ⁺	593.33	222.11,	213.12,	165.06, 123.04	C8H12N2 ⁺ ,	457.23 [M+H-]	dihydrocaffeo	816	672	255	230	527	128	dihydrocaffeo	628.25 [M-H]-, 610.24	
		56	[M+H] ⁺	333.80	222.11,	165.06,	137.11,	123.04, 112.11	293.19 [M+H-]	861	083	571	663	038	252	630.27	[M-H-] H2O ⁻ , 566.25 [M-H-62] ⁻ , 472.25 [M-H-] C6H4O5 , 456.21,		
78 N-N'-bis-(dihydrocaffeoxy)spermidine-conjugate (+C6H4O5)	C31H39N3O11	5.8	[M+H] ⁺	630.24	222.11,	213.12,	165.06, 123.04	C8H12N2 ⁺ ,	466.22 [M+H-]	dihydrocaffeo	747	613	467	382	192	281	628.25 [M-H-] H2O ⁻ , 580.24 [M-H-62] ⁻ , 810.24 [M-H-] C6H4O5 , 456.21,		
		24	[M+H] ⁺	265.56	222.11,	165.06,	137.11,	123.04, 112.11	448.21	936	390	242	402	016	903	5.7	610.24	698.24 [M-H-62] ⁻ , 677.24 [M-H-] C6H4O5 , 456.21,	

82	N-N'-bis-(dihydrocaffeoyl) spermidine-conjugate (+C3H2O2)	C28H37N3O8	6.2 33 24	544. 266]+	[M+H] [M+H- dihydrocaffeo yl]+, 362.21 [M+H- dihydrocaffeo yl-H2O]+, 222.11, 199.14, 185.13, 123.04	544.26 [M+H]+, 380.22 [M+H- dihydrocaffeo yl]+, 362.21 [M+H- dihydrocaffeo yl-H2O]+, 222.11, 199.14, 185.13, 123.04	669 164 949 231 269 429 669	576 949 231 269 429 799 88	226 269 420 429 325 799	420 429 325 669 88	325 669 799 88	6.1 88	542. 249 51	[M- H]- [M+H- dihydrocaff eoyl]+, 378.20 [M+H- dihydrocaff eoyl]+, 279.14, 256.16 [M+H-122- dihydrocaff eoyl]+, 167.12, 129.10, 121.03	140 758 740 886 988 542 469	226 740 886 988 542 469	116 886 988 542 469	225 988 542 469	101 542 469	299		
83	N-N'-bis-(dihydrocaffeoyl) spermidine-	C31H39N3O8	6.9 44 29	582. 282]+	[M+H] [M+H- H2O]+, 536.28 [M+H-	582.29 [M+H]+, 564.27 [M+H- H2O]+, 536.28 [M+H-	243 176 3 5	240 175 2 2	258 509 2 2	334 693 2 2	277 097 3 3	367 284 2 2	6.8 96 70	580. 262 70	[M- H]-, [M-H-30]-, 458.23 [M- H-122]-,	550.26 [M-H-30]-, 458.23 [M- H-122]-,	911 159 6	101 173 6	881 257 6	244 788 6	131 866 6	215 912 8

conjugate (+C6H4O2)		CH₂O₂]₊, 400.22 [M+H- H ₂ O- dihydrocaffeo yl]+, 382.21 [M+H-H ₂ O- dihydrocaffeo yl-H ₂ O] ₊ , 222.11, 219.15, 162.09, 134.10, 123.04		428.22 [M- H-30-122]-, 416.22 [M- H- dihydrocaff eoyl]-, 386.21 [M- H-30- dihydrocaff eoyl]-, 124.03, 94.03 580.26 [M- H]-, 416.22 [M-H- dihydrocaff eoyl]-																
6.9 43	604. 263 00	[M+N a]+	604.26 [M+Na]+	907 705	869 736	117 832 5	101 343 7	105 086 3	126 193 9	6.8 97 87	616. 239 87	[M+ Cl]-	H]-, 416.22 [M-H- dihydrocaff eoyl]-	107 137	125 844	108 022	250 874	151 213	230 961	
6.9 45	564. 270 81	[M+H H ₂ O] +	H ₂ O] ₊ , 536.28 400.22 [M+H- H ₂ O- dihydrocaffeo yl]+, 382.22	588 594	590 243	635 962	956 986	659 198	943 461	6.8 98	643. 262 21	H+ HN O3]	H]-, 550.26 [M-H-30]-, 416.22 [M- H- dihydrocaff eoyl]-	580.27 [M- H]-, 550.26 [M-H-30]-, 416.22 [M- H- dihydrocaff eoyl]-	351 773	389 616	349 118	732 630	448 512	647 050

84	N-N'-bis- (dihydrocaffeo oyl) spermidine- conjugate (+C8H8O5)	C33H 43N3 O11	[M+H-H2O- dihydrocaffeo yl-H2O]+, 222.11, 162.09, 134.10																																
			6.9	620. 238 43 28	[M+K]]+	620.24 [M+K]+	186 727	178 355	204 348	216 042	225 335	268 871																							
656.28+ [M-H]-, 638.27 [M- H-H2O]-, 592.23 [M- H-64]-, 568.23 [M- H-88]-, 470.19 [M- H-64-122]-, 428.17 [M- H-64- dihydrocaff eoyl]-, 402.20 656.28 [M- H]-, 638.27 [M-H- H2O]-,												134 261 792 470 912 265 526																							
7.2 17 88												[M+H] [M+H- dihydrocaffeo yl]-, 313.18, 299.16, 222.11, 165.05, 123.04	590 90	851 98	258 19	268 093 5	773 268	137 655 7	7.1 69	656. 279 97	[M- H]-	261 34	792 3	470 5	912 2	265 693	526 236								
7.2 12 24												[M+N] a]+	680.28 [M+Na]+	416 5	167 08	473 4	978 626	372 088	570 602	7.1 69	692. 257 45	[M+ Cl]-	638.27 [M-H- H2O]-,	246 3	105 0	101 4	197 544	379 11	937 30						

85	N-N'-bis-(dihydrocaffeoyl)spermidine-conjugate (+C6H5N) isomer 3	C31H40N4O6	7.2 19	696.15 254 15	[M+K]]+	696.25 [M+K] + 694	172 0	132 9	192 742	761 91	116 388	7.1 69	592.23 [M-H-64] -, 402.20 656.28 [M-H- [M-H] -, 638.27 719. 278 20	H+ HN O3]	[M-H- H2O] -, 592.23 [M-H- -] -, 402.20	552 1	442 6	749	507 438	130 829	256 045
															565.30 [M+H] +, 548.28 [M+H- NH3] +, 401.25 [M+H- dihydrocaffeo yl] +, 383.24 [M+H- dihydrocaffeo yl-H2O] +, 222.11, 163.15, 134.09, 123.04						
86	N-N'-bis-(dihydrocaffeoyl)spermidine-	C30H37N3O8	7.3 59	565.71 303 59 71	[M+H]]+	dihydrocaffeo yl] +, 383.24 [M+H- dihydrocaffeo yl-H2O] +, 222.11, 163.15, 134.09, 123.04	746 45	813 94	320 70	314 627	102 601	221 023	7.4 23	563.52 285 52	[M-H] -, 441.25 [M-H-122] -	563.28 [M-H- 441.25 [M-H-122] -] 400 8	381 3	321 1	151 12	668 9	226 81
															568.27 [M+H] +, 404.22 [M+H- dihydrocaffeo						

conjugate
(+C₅H₂O₂)

yl]+, 386.21
[M+H-
dihydrocaffeo
yl-H₂O]+,
223.14,
222.11,
209.13,
165.05, 123.04

7.6 590.
11 244 [M+N 590.25
93 a]+ [M+Na]+

165 184 129 905 450 770 7.5
243 563 420 692 065 007 63

H-
dihydrocaff
eoyl]-,
322.18 [M-
H-122-
122]-,
280.16 [M-
H-122-
dihydrocaff
eoyl]-,
135.04,
121.03
566.25 [M-
H]-, 444.21
[M-H-122]-,
402.21 [M-
H-
dihydrocaff
eoyl]-,
322.18 [M-
H-122-
122]-,
121.03
566.25 [M-
H]-, 444.21
[M-H-122]-,
402.20 [M-
H+
HN

916 565 300 477 269 730
8 6 8 15 08 63

7.6 606.
15 223 [M+K 606.22 [M+K]+
45]+

129 371 434 189 813 168 7.5
50 24 9 282 92 735 60

629. 373 666 428 479 161 354
245 72 04 83 591 001 644
[M-H]-, 444.21
[M-H-122]-,
402.20 [M-
H+
HN

	87	N-N'-bis-(dihydrocaffeoyl)spermidine-conjugate (+C5H2O) isomer 2	C30H37N3O7	552.27 [M+H]+, 524.28 [M+H-] CO]+, 388.22 [M+H-] dihydrocaffeo yl]+, 370.21 [M+H-] dihydrocaffeo yl-H2O]-, 360.23 [M+H-] CO- dihydrocaffeo yl]+, 342.22 [M+H-CO-] dihydrocaffeo yl-H2O]+, 222.11, 207.15, 165.05, 123.04										O3] H- - dihydrocaffeo eyl]- 550.25 [M- H]-, 428.22 [M-H-122]-, 386.21 [M- H-] dihydrocaff eyl]-, 9 151 159 135 281 559 320 721 138 258 180 718 574 333.18, 157.10, 121.03, 94.03									
				7.9 29	552. 271 55	[M+H]]+	612 968 4 6 5 6 9 2	630 463 436 435 046 640	621 436 435 046 640	720 968 4 6 5 6 9 2	245 435 046 640	928 640 2 9 2	7.8 85 78	550. 253 78	[M- H]-	H- dihydrocaff eyl]-, 9 721 138 258 180 718 0	151 721 138 258 180 718 0	159 138 258 180 718 0	135 258 180 718 0	281 180 718 0	559 718 0	320 574 0	
				7.9 30	574. 251 71	[M+N] a]+	574.25 [M+Na]+	178 770 5	182 029 6	199 256 7	175 295 3	727 796 8	237 004 8	7.8 87 16	586. 230 16	[M+ H]- Cl]-	550.25 [M- H]-, 428.22 [M-H-122]-, 386.21 [M-	870 73 10 91 080 65 074	472 73 91 080 65 074	746 10 91 080 65 074	157 73 91 080 65 074	365 10 91 080 65 074	185 0 0 0 0 0

N-N'-bis-
(dihydrocaffe-
oyl)
spermidine-
conjugate
(+C4H2)

															H-								
															dihydrocaff								
															eoyl]-								
															550.25 [M-								
															H],-, 428.22								
															[M-	[M-H-122]-,							
															H+	386.21 [M-							
															HN	H-	511	508	460	859	233		
															02	O3]	249	851	241	759	058	582	
															dihydrocaff	- eoyl]-,					102		
																	333.18,					336	
																	94.03					0	
																	522.26 [M-						
																	H]-, 400.22						
																	[M-H-122]-,						
																	358.21 [M-						
																	H-						
																	dihydrocaff						
																	eoyl]-,	437	425	456	195	613	176
																		379	774	261	186	278	621
																	236.18 [M-						
																	H-122-						
																	dihydrocaff						
																	eoyl]-,						
																		121.03,					
																	66.03						

89	N-N'-bis-(dihydrocaffeoyl)spermidine-conjugate (+C6H4O) C31H 39N3 O7	8.2	546. 260 45 13	[M+N a]+	546.26 [M+Na]+	172 468 417 919 226 968 252 548 170 422 292	8.2	558. 234 86	[M+ Cl]-	315 11 329 95 308 03 934 88 355 91 853 40
		8.2	562. 235 46 35	[M+K] +	403 68 344 58 547 36 733 55 437 53 817 58	8.2	585. 256 41	H+ HN O3]	dihydrocaff eoyl]-, 236.18 [M-] - H-122- dihydrocaff eoyl]-, 163.04, 121.03	176 578 181 274 199 754 489 940 196 914 465 218
		8.2	566. 286 57 80	[M+H] +	139 402.24 574 dihydrocaffeo yl]+, 384.23 [M+H-] dihydrocaffeo yl-H2O]+,	157 [M+H-] 475 8 3 8 0 641 762 254 791 129 177 6 33	8.2	564. 270 63	[M- H]-	564.27 [M- H]-, 442.22 [M-H-122]-, 424.22 [M-] H-122- H2O]-, 400.22 [M-] - H- dihydrocaff eoyl]-, 348.81,

93	Hederagenin-triglucoside	C47H 76O1 7	8.8 45 21 8.8 47 44 8.9 48 47	[M+H] - C33H 4001 9]+ [M+H] - C33H 4202 0]+ [M+H] - C33H 4202 0]+ 913. 519 751.46 [M+H-]]+ 913.50 [M+H]+, 751.46 [M+H-] C6H10O5]+, 619.42 [M+H-]	<p>C6H10O4-</p> <p>C5H8O4-H2O-</p> <p>H2O]+, 279.11</p> <p>455.35 [M+H-]</p> <p>C6H10O5-</p> <p>C6H10O5-</p> <p>C6H10O4-</p> <p>C5H8O4-</p> <p>H2O]+, 437.34</p> <p>337 378 434 278 349 296</p> <p>[M+H- 826 155 528 109 459 182</p> <p>C6H10O5-</p> <p>C6H10O5-</p> <p>C6H10O4-</p> <p>C5H8O4-H2O-</p> <p>H2O]+,</p> <p>391.34, 215.18</p> <p>913.50</p>	<p>911.50 [M- H]-, 749.44</p> <p>636 574 635 535 563 518</p> <p>502 [M- H]-, 814 177 054 092 789 642</p> <p>69 C6H10O5]-, 603.39 [M-]</p>

RT	Sample	Retention Time	Mass Spectrum	O3]												
				9.5	867.	[M- H+1 18]-	733	614	674	469	119	555				
100	1,2-dioleoyl-sn-glycero-3-phosphatidylcholine	C44H84NO8P	9.6	786. 600 65 46	[M+H] [M+H]]+	184.07 [M- C39H70O4+H] +, 86.10 [M- C39H73O8P+ H]+	108 657 247 916 153 469 990	134 198 170 166 135								
101	Beta-hederin	C41H66O11	9.7	752. 495 34 18	[M+N H4]+	439.36 [M+H- C6H10O4- C5H8O4- H2O]+, 279.11	419 886 921 420 945 271 599	106 288 183 443 440	9.7	733. 450 62 26	[M- H- C6H10O4]-, 455.35 [M- H- C6H10O4- C5H8O4]-	733.45 [M- H]-, 689.46, 587.39 [M- H- C6H10O4]-, 032 827 811 861 937 151 988 9	820 387			
		1	9.7	457. 370 31 94	[M+H] -	457.35 [M+H- C6H10O4- C5H8O4]+, 439.36 [M+H- C6H10O4- C5H8O4-]+	469 81 126 05 02 12 430	131 774 05 02 12 430	9.7 98	769. 430 79	[M+ Cl]- 733.45 [M- H]-, 455.35	769.43 [M+Cl]-, 733.45 [M- H]-, 455.35 [M-H-]	342 840 453 944 472 249 200 670 391 224 732 230			

		H]₊, 86.10 [M-H]₋												C37H71O8P₊ H]₊															
103	Hederagenin C30H 48O4	9.8 36 29	473. 364]+	[M+H] 805 839 923 555 112 198 9.8 67 98 09 9 62 14 22												471. 345 64	[M-H] ₋ H] ₋	[M-H] ₋ 262 274 252 504 259 977 152 537 114 387 72 996 2 6 3											
				495. 346 56	[M+N a] ₊ 147 150 141 164 139 204 9.8 907 473 155 4 5 95 24	943. 702 70	[2M-H] ₋ -H] ₋ 471.35 H] ₋ 943.70 749 798 691 320 50 691 996 906 43 002 110																						
		9.8 31 91	[M+H] - H ₂ O] + H ₂ O] ₊ , 409.35 455.35 [M+H-H ₂ O] ₋ , 437.34 216 219 222 764 088 252 765 24 383 24 0 6 4	455.35 [M+H-H ₂ O] ₋ , 437.34 216 219 222 764 088 252 765 24 383 24 0 6 4	9.8 686 77	[2M +Na - 2H] ₋ 2H] 965. 805.99, 471.35 [M-H] ₋ 965.35 [M-H] ₋ 205 226 189 206 563 322 784 82 83 61	965.35 [M-H] ₋ 205 226 189 206 563 322 784 82 83 61																						
		9.8 34 59	[M+H] - 2H ₂ O] ₊ 391.34 945.71 [2M+H] ₊ , 473.36 [M+H] ₊ , 455.35 [M+H-H ₂ O] ₋ , 437.34	437.34 [M+H-H ₂ O] ₋ , 437.34 181 165 171 464 639 603 745 25 639 8 3 6	945.71 [2M+H] ₊ , 473.36 [M+H] ₊ , 455.35 [M+H-H ₂ O] ₋ , 437.34	9.8 35 58	318 39																						

					C14H29NO2+			
					H]⁺			
					522.35			
					[M+H]⁺,			
					504.34 [M+H-			
					H2O]⁺, 184.07	121	864	273
					[M- 147		109	673
					C21H38O3+H]	6	5	970
						420	9	
								9
					+], 104.11 [M-			
					C21H39O6P+			
					H]⁺			
					326.31			
					[M+H]⁺,			
					308.30 [M+H-			
					H2O]⁺, 135.12			
					[M-			
					C10H25NO2-			
					H]⁺, 121.10			
					[M- 489	533	607	249
					C11H27NO2-	568	300	778
						0	4	165
					H]⁺, 109.10	5	0	4
					[M-			
					C12H27NO2-			
					H]⁺, 95.09 [M-			
					C13H29NO2-			
					H]⁺, 83.08 [M-			
					C14H29NO2-			
107	1-Oleoyl-sn-glycero-3-phosphocholine	C26H52NO7P	10.689	522.356				
108	N-Oleoylethanol amine	C20H39NO2	10.700	326.306				

