

**Table S1:** Dunnett's multiple comparisons test conducted for the DCF-DA assay. The presence of cellular ROS in control cells treated with 50  $\mu\text{M}$   $\text{H}_2\text{O}_2$  only was compared with the presence of cellular ROS in cells treated with various concentrations of each extract and 50  $\mu\text{M}$   $\text{H}_2\text{O}_2$  as well. \*\*\* refers to  $p < 0.001$  statistical significance, compared with control cells treated with 50  $\mu\text{M}$   $\text{H}_2\text{O}_2$  only.

Dunnett's multiple comparisons tests	Mean Difference	95.00% CI of difference	Below threshold?	Summary	Adjusted P Value
Control vs. Untreated	305.8	191.7 to 419.9	Yes	***	<.001
Control vs. 500 $\mu\text{M}$ Trolox	325.4	211.3 to 439.4	Yes	***	<.001
Control vs. SFW1 200 $\mu\text{g/mL}$	313.4	199.3 to 427.5	Yes	***	<.001
Control vs. SFW1 100 $\mu\text{g/mL}$	332.9	218.8 to 447.0	Yes	***	<.001
Control vs. SFW1 50 $\mu\text{g/mL}$	332.4	218.3 to 446.5	Yes	***	<.001
Control vs. SFW1 2 $\mu\text{g/mL}$	266.5	152.5 to 380.6	Yes	***	<.001
Control vs. SFDE 200 $\mu\text{g/mL}$	218.2	104.2 to 332.3	Yes	***	<.001
Control vs. SFDE 100 $\mu\text{g/mL}$	291.6	177.5 to 405.7	Yes	***	<.001
Control vs. SFDE 50 $\mu\text{g/mL}$	328.5	214.5 to 442.6	Yes	***	<.001
Control vs. SFDE 2 $\mu\text{g/mL}$	331	216.9 to 445.0	Yes	***	<.001
Control vs. SFEA 200 $\mu\text{g/mL}$	289.2	175.1 to 403.3	Yes	***	<.001
Control vs. SFEA 100 $\mu\text{g/mL}$	322.6	208.5 to 436.7	Yes	***	<.001
Control vs. SFEA 50 $\mu\text{g/mL}$	336.3	222.2 to 450.4	Yes	***	<.001
Control vs. SFEA 2 $\mu\text{g/mL}$	321.7	207.6 to 435.8	Yes	***	<.001
Control vs. SFB 200 $\mu\text{g/mL}$	328.2	214.1 to 442.3	Yes	***	<.001
Control vs. SFB 100 $\mu\text{g/mL}$	341	226.9 to 455.1	Yes	***	<.001
Control vs. SFB 50 $\mu\text{g/mL}$	342.5	228.4 to 456.6	Yes	***	<.001
Control vs. SFB 20 $\mu\text{g/mL}$	269.2	155.1 to 383.2	Yes	***	<.001
Control vs. SFW2 200 $\mu\text{g/mL}$	307.6	193.6 to 421.7	Yes	***	<.001
Control vs. SFW2 100 $\mu\text{g/mL}$	335	220.9 to 449.1	Yes	***	<.001
Control vs. SFW2 50 $\mu\text{g/mL}$	335.3	221.2 to 449.4	Yes	***	<.001
Control vs. SFW2 20 $\mu\text{g/mL}$	219.6	105.5 to 333.7	Yes	***	<.001

**Table S2:** Dunnett's multiple comparisons test conducted for the extracts' cytotoxicity assay. The viability of untreated control cells was compared with the viability of cells treated with various concentrations of each extract. \*\* refers to  $p < 0.01$ , and \*\*\* to  $p < 0.001$  statistical significance, compared with untreated cells (control).

Dunnett's multiple comparisons tests	Mean Difference	95.00% CI of difference	Below threshold?	Summary	Adjusted P Value
Control vs. SFW1 200 µg/mL	32.56	11.73 to 53.40	Yes	***	<.001
Control vs. SFW1 100 µg/mL	19.39	-1.444 to 40.23	No	ns	0.085
Control vs. SFW1 50 µg/mL	15.6	-5.234 to 36.44	No	ns	0.276
Control vs. SFW1 20 µg/mL	9.391	-11.44 to 30.23	No	ns	0.893
Control vs. SFDE 100 µg/mL	26.57	5.731 to 47.40	Yes	**	0.004
Control vs. SFDE 50 µg/mL	17.9	-2.939 to 38.73	No	ns	0.14
Control vs. SFDE 20 µg/mL	12.67	-8.169 to 33.50	No	ns	0.554
Control vs. SFEA 400 µg/mL	96.24	75.40 to 117.1	Yes	***	<.001
Control vs. SFEA 200 µg/mL	3.108	-17.73 to 23.94	No	ns	>.999
Control vs. SFEA 100 µg/mL	2.183	-18.65 to 23.02	No	ns	>.999
Control vs. SFEA 50 µg/mL	-5.154	-25.99 to 15.68	No	ns	0.999
Control vs. SFEA 20 µg/mL	-0.6316	-21.47 to 20.20	No	ns	>.999
Control vs. SFB 800 µg/mL	28.28	7.446 to 49.12	Yes	**	0.002
Control vs. SFB 400 µg/mL	-15.24	-36.08 to 5.593	No	ns	0.304
Control vs. SFB 200 µg/mL	-0.6466	-21.48 to 20.19	No	ns	>.999
Control vs. SFB 100 µg/mL	-6.944	-27.78 to 13.89	No	ns	0.988
Control vs. SFB 50 µg/mL	-8.877	-29.71 to 11.96	No	ns	0.929
Control vs. SFB 20 µg/mL	-7.002	-27.84 to 13.83	No	ns	0.988
Control vs. SFW2 800 µg/mL	43.99	23.16 to 64.83	Yes	***	<.001
Control vs. SFW2 400 µg/mL	20.82	-0.01603 to 41.65	No	ns	0.05
Control vs. SFW2 200 µg/mL	-1.742	-22.58 to 19.09	No	ns	>.999
Control vs. SFW2 100 µg/mL	-0.1266	-20.96 to 20.71	No	ns	>.999
Control vs. SFW2 50 µg/mL	9.363	-11.47 to 30.20	No	ns	0.896
Control vs. SFW2 20 µg/mL	15.37	-5.469 to 36.20	No	ns	0.294

**Table S3:** Dunnett's multiple comparisons test conducted for the extracts' anti-neurotoxic ability assay. The viability of cells treated with 25  $\mu$ M A $\beta_{25-35}$  only was compared with the viability of cells treated with various concentrations of each extract and 25  $\mu$ M A $\beta_{25-35}$  as well. \* refers to  $p < 0.05$  statistical significance, compared with cells treated only with 25  $\mu$ M A $\beta_{25-35}$ .

Dunnett's multiple comparisons tests	Mean Difference	95.00% CI of difference	Below threshold?	Summary	Adjusted P Value
A $\beta_{25-35}$ only vs. SFW1 100 $\mu$ g/mL	-2.66	-16.10 to 10.78	No	ns	>.999
A $\beta_{25-35}$ only vs. SFW1 50 $\mu$ g/mL	-5.118	-18.56 to 8.322	No	ns	0.975
A $\beta_{25-35}$ only vs. SFW1 20 $\mu$ g/mL	-14.01	-27.45 to -0.5722	Yes	*	0.035
A $\beta_{25-35}$ only vs. SFW1 2 $\mu$ g/mL	-2.002	-15.44 to 11.44	No	ns	>.999
A $\beta_{25-35}$ only vs. SFDE 50 $\mu$ g/mL	13.76	0.3182 to 27.20	Yes	*	0.041
A $\beta_{25-35}$ only vs. SFDE 20 $\mu$ g/mL	11.1	-2.336 to 24.54	No	ns	0.175
A $\beta_{25-35}$ only vs. SFDE 2 $\mu$ g/mL	-14.14	-27.58 to -0.7022	Yes	*	0.033
A $\beta_{25-35}$ only vs. SFEA 200 $\mu$ g/mL	5.492	-7.948 to 18.93	No	ns	0.952
A $\beta_{25-35}$ only vs. SFEA 100 $\mu$ g/mL	4.472	-8.968 to 17.91	No	ns	0.988
A $\beta_{25-35}$ only vs. SFEA 50 $\mu$ g/mL	-4.822	-18.26 to 8.618	No	ns	0.985
A $\beta_{25-35}$ only vs. SFEA 20 $\mu$ g/mL	-3.346	-16.79 to 10.09	No	ns	0.999
A $\beta_{25-35}$ only vs. SFEA 2 $\mu$ g/mL	-13.73	-27.17 to -0.2902	Yes	*	0.042
A $\beta_{25-35}$ only vs. SFB 400 $\mu$ g/mL	-9.196	-22.64 to 4.244	No	ns	0.396
A $\beta_{25-35}$ only vs. SFB 200 $\mu$ g/mL	-14.46	-27.90 to -1.016	Yes	*	0.027
A $\beta_{25-35}$ only vs. SFB 100 $\mu$ g/mL	-14.04	-27.48 to -0.6042	Yes	*	0.035
A $\beta_{25-35}$ only vs. SFB 50 $\mu$ g/mL	-7.914	-21.35 to 5.526	No	ns	0.607
A $\beta_{25-35}$ only vs. SFB 20 $\mu$ g/mL	-3.158	-16.60 to 10.28	No	ns	0.999
A $\beta_{25-35}$ only vs. SFB 2 $\mu$ g/mL	-3.05	-16.49 to 10.39	No	ns	>.999
A $\beta_{25-35}$ only vs. SFW2 400 $\mu$ g/mL	2.982	-10.46 to 16.42	No	ns	>.999
A $\beta_{25-35}$ only vs. SFW2 200 $\mu$ g/mL	2.09	-11.35 to 15.53	No	ns	>.999
A $\beta_{25-35}$ only vs. SFW2 100 $\mu$ g/mL	-4.562	-18.00 to 8.878	No	ns	0.988
A $\beta_{25-35}$ only vs. SFW2 50 $\mu$ g/mL	-2.906	-16.35 to 10.53	No	ns	>.999
A $\beta_{25-35}$ only vs. SFW2 20 $\mu$ g/mL	-3.242	-16.68 to 10.20	No	ns	0.999
A $\beta_{25-35}$ only vs. SFW2 2 $\mu$ g/mL	5.276	-8.164 to 18.72	No	ns	0.967

**Table S4:** Multiple Reaction Monitoring conditions for polyphenolic acids and flavonoids used for content quantification in *S. fruticosa* via UPLC-MS/MS analysis.

Polyphenolic compound	Chemical formula	Molecular weight	[M-H] <sup>+</sup> (m/z)	MS <sup>2</sup> fragments (m/z)	Cone voltage (V)	Collision energy (eV)	Retention time (R <sub>t</sub> )
<b>Benzoic acid derivatives</b>							
<i>m</i> -hydroxy benzoic acid	C <sub>7</sub> H <sub>6</sub> O <sub>3</sub>	138.13	137.05	92.90	22	10	2.34
<i>p</i> -hydroxy benzoic acid	C <sub>7</sub> H <sub>6</sub> O <sub>3</sub>	138.12	136.95	65.00 93.00	23	25 13	1.88
Protocatechuic acid	C <sub>7</sub> H <sub>6</sub> O <sub>4</sub>	154.12	152.95	108.95	25	13	1.64
Vanillin	C <sub>8</sub> H <sub>8</sub> O <sub>3</sub>	152.15	151.00	92.20 136.0	22	20 15	2.23
<i>p</i> -hydroxy benzaldehyde	C <sub>7</sub> H <sub>6</sub> O <sub>2</sub>	122.13	120.95	91.85	12	20	4.69
Gentisic acid	C <sub>7</sub> H <sub>6</sub> O <sub>4</sub>	154.13	153.05	108.20	13	25	4.28
<b>Gallic acid derivatives</b>							
Gallic acid	C <sub>7</sub> H <sub>6</sub> O <sub>5</sub>	170.12	168.95	78.98 124.95	23	22 15	1.37
Ethyl gallate	C <sub>9</sub> H <sub>10</sub> O <sub>5</sub>	198.18	197.05	124.00	15	25	4.66
Syringic acid	C <sub>9</sub> H <sub>10</sub> O <sub>5</sub>	198.17	197.00	122.95 182.00	27	23 13	1.93
Ellagic acid	C <sub>14</sub> H <sub>6</sub> O <sub>8</sub>	302.19	301.00	145.00 173.00	35	34 36	2.00
<b>Cinnamic acid derivatives</b>							
Ferulic acid	C <sub>10</sub> H <sub>10</sub> O <sub>4</sub>	194.18	192.95	134.00 178.00	26	25 12	2.20
Ferulic acid ethyl ester	C <sub>12</sub> H <sub>14</sub> O <sub>4</sub>	222.24	223.20	177.15	15	13	5.84
Ferulic acid methyl ester	C <sub>11</sub> H <sub>12</sub> O <sub>4</sub>	208.22	209.05	177.15	16	5	5.48
Caffeic acid	C <sub>9</sub> H <sub>8</sub> O <sub>4</sub>	180.16	178.95	134.95	25	13	1.89
Dihydro caffeic acid	C <sub>9</sub> H <sub>10</sub> O <sub>4</sub>	182.17	181.05	137.05	22	12	4.39
<i>trans</i> -cinnamaldehyde	C <sub>9</sub> H <sub>8</sub> O	132.16	133.15	55.00	20	11	5.93
<i>trans</i> -cinnamyl alcohol	C <sub>9</sub> H <sub>10</sub> O	134.18	117.25	115.00	18	17	5.45
<i>m</i> -coumaric acid	C <sub>9</sub> H <sub>8</sub> O <sub>3</sub>	164.16	163.10	118.90	20	12	4.81
<i>p</i> -coumaric acid	C <sub>9</sub> H <sub>8</sub> O <sub>3</sub>	164.16	163.00	119.00	15	13	2.13
Rosmarinic acid	C <sub>18</sub> H <sub>16</sub> O	360.32	359.20	161.00 197.00	10	15 15	2.26
Chlorogenic acid	C <sub>16</sub> H <sub>18</sub> O <sub>9</sub>	354.31	353.10	84.00 191.02	22	44 14	1.70
Neochlorogenic acid	C <sub>16</sub> H <sub>18</sub> O <sub>9</sub>	354.31	353.15	135.18	19	36	2.50

4-O-caffeoylquinic acid	C <sub>16</sub> H <sub>18</sub> O <sub>9</sub>	354.31	353.35	173.20	19	18	4.28
<b>Coumarin derivatives</b>							
Coumarin	C <sub>9</sub> H <sub>6</sub> O <sub>2</sub>	146.15	147.01	91.00 102.90	17	12 17	5.44
<i>m</i> -hydroxycoumarin	C <sub>9</sub> H <sub>6</sub> O <sub>3</sub>	162.15	161.15	133.00	17	13	5.26
<i>p</i> -hydroxycoumarin	C <sub>9</sub> H <sub>6</sub> O <sub>3</sub>	162.15	163.00	121.00	39	13	5.04
7-hydroxycoumarin	C <sub>9</sub> H <sub>6</sub> O <sub>3</sub>	162.15	163.15	107.20	20	21	4.97
Osthol	C <sub>15</sub> H <sub>16</sub> O <sub>3</sub>	244.29	245.18	131.10 189.00	14 14	21 13	0.28
<b>Phenolic derivative</b>							
Eugenol	C <sub>10</sub> H <sub>12</sub> O <sub>2</sub>	164.21	165.25	123.95	14	15	6.08
<b>Furanocoumarin derivatives</b>							
Isopimpinellin	C <sub>13</sub> H <sub>10</sub> O <sub>5</sub>	246.22	247.15	217.10	27	24	5.93
Xanthotoxin	C <sub>12</sub> H <sub>8</sub> O <sub>4</sub>	216.19	217.15	161.20 202.10	15	20 25	5.75
Xanthotoxol	C <sub>11</sub> H <sub>6</sub> O <sub>4</sub>	202.17	203.15	131.15 147.05	22	18 21	5.09
<b>Flavanone derivatives</b>							
2'-hydroxyflavanone	C <sub>15</sub> H <sub>12</sub> O <sub>3</sub>	240.27	239.00	119.30 93.10	40	25 16	3.18
7-hydroxyflavanone	C <sub>15</sub> H <sub>12</sub> O <sub>3</sub>	240.27	239.05	135.20 91.15	41	25 23	3.42
4'-methoxyflavanone	C <sub>16</sub> H <sub>14</sub> O <sub>3</sub>	254.29	255.15	240.00 161.30	31	17 22	3.78
Naringin	C <sub>22</sub> H <sub>32</sub> O <sub>14</sub>	580.54	579.15	271.10 151.50	45	33 40	2.12
<b>Flavone derivatives</b>							
Apigenin	C <sub>15</sub> H <sub>10</sub> O <sub>5</sub>	270.05	269.15	117.00	31	29	5.24
Apigenin-7-O-glucoside	C <sub>21</sub> H <sub>20</sub> O <sub>10</sub>	432.38	431.15	268.35	35	22	2.15
Luteolin	C <sub>15</sub> H <sub>10</sub> O <sub>6</sub>	286.25	285.13	133.25	24	37	4.99
Luteolin-7-O-glucoside	C <sub>21</sub> H <sub>20</sub> O <sub>11</sub>	448.38	449.15	287.10	34	31	2.01
<b>Flavonol derivatives</b>							
Isorhamnetin	C <sub>16</sub> H <sub>12</sub> O <sub>7</sub>	316.28	315.00	151.00 300.20	43	30 20	2.86
Quercetin	C <sub>15</sub> H <sub>10</sub> O <sub>7</sub>	302.23	301.35	151.00 179.10	13	18 14	5.09
Quercetin-3-O-rhamnoside	C <sub>21</sub> H <sub>20</sub> O <sub>11</sub>	448.38	447.01	271.00 300.00	43	47 28	2.14

Quercetin-3- O-rutinoside	C <sub>27</sub> H <sub>30</sub> O <sub>16</sub>	610.53	609.10	300.0 271.00	47	39 65	1.92
Quercetin-3- O-galactoside	C <sub>21</sub> H <sub>20</sub> O <sub>12</sub>	464.38	463.30	300.00 271.15	47	24 44	1.99
Myricetin-3- O-galactoside	C <sub>21</sub> H <sub>20</sub> O <sub>13</sub>	480.38	479.05	271.10 287.10	48	39 44	1.87
Myricetin-3- O-rhamnoside	C <sub>21</sub> H <sub>20</sub> O <sub>12</sub>	464.38	463.15	316.30 271.25	31	27 42	4.38
Kaempferol	C <sub>15</sub> H <sub>10</sub> O <sub>6</sub>	286.25	285.25	151.00	30	14	5.32
Kaempferol-3- O-rutinoside	C <sub>21</sub> H <sub>20</sub> O <sub>10</sub>	432.39	431.05	255.30 284.20	45	42 28	2.27

Catechins and Procyanidins							
Procyanidin-B2	C <sub>30</sub> H <sub>26</sub> O <sub>12</sub>	578.53	577.00	125.05 289.30 407.35	29	32 23 24	2.30
(-)-Epicatechin	C <sub>15</sub> H <sub>14</sub> O <sub>6</sub>	290.28	289.05	108.90 123.05	30	29 29	4.29
(Di)terpenes							
Carnosol	C <sub>20</sub> H <sub>26</sub> O <sub>4</sub>	330.42	329.53	286.12	20	23	7.01
Carnosic acid	C <sub>20</sub> H <sub>28</sub> O <sub>4</sub>	332.42	331.50	287.98	20	23	7.94

**Table S5:** The limit of detection (LOD), quantification (LOQ), linearity, precision, and accuracy results for the screened polyphenolic compounds contained in *S. fruticosa*. The calibration equations represent the peak area as a function of concentration in ppb. The intra- and inter-day experimental data concern data that have been collected from a six-day experiment, whereas the %recovery data are the means of three independent experiments.

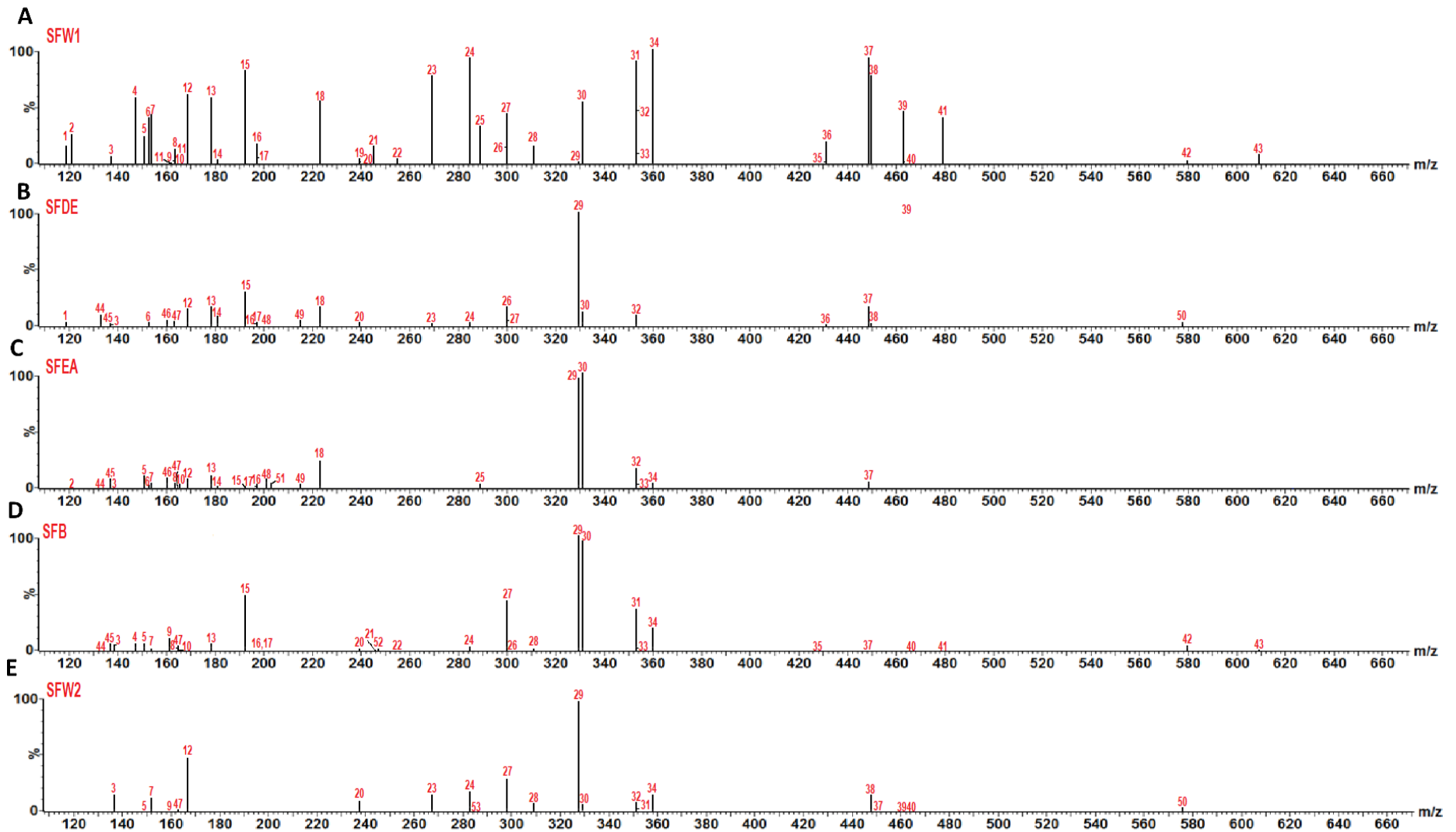
Compound	Linear range (ppb)	LOD (ppb)	LOQ (ppb)	Calibration equation <sup>a</sup>	Correlation coefficient (r <sup>2</sup> )	%RSD		%REC <sup>d</sup>
						(intra-day) <sup>b</sup>	(inter-day) <sup>c</sup>	
Benzoic acid derivatives								
<i>m</i> -hydroxybenzoic acid	13.39-499.21	13.39	40.58	y=42.16x+277.25	0.9997	1.00	2.06	99.9
<i>p</i> -hydroxybenzoic acid	3.01-499.50	3.01	14.20	y=36.87x-62.07	0.9991	1.15	2.21	98.8
Protocatechuic acid	0.66-504.50	0.66	14.70	y=34.24x-69.4	0.9995	1.25	2.65	86.3
Vanillin	2.87-335.00	2.87	5.62	y=0.67x-0.1	0.9999	0.98	0.95	100.4
<i>p</i> -hydroxy benzaldehyde	0.57-99.46	0.57	1.72	y=7.43x+36.81	0.9991	3.21	3.25	95.6
Gentisic acid	7.06	7.06	21.40	y=3.40x+36.81	0.9994	2.47	2.6	100.3
Gallic acid derivatives								
Gallic acid	53.20-513.20	53.20	105.20	y=0.67x-1.5	0.9996	0.46	0.21	99.9
Ethyl gallate	1.21-108.36	1.21	3.69	y=21.07x+123.35	0.9999	1.06	1.33	97.5
Syringic acid	2.01-501.60	2.01	2.86	y=7.28x-2.7	0.9996	1.36	1.01	96.6
Ellagic acid	5.53-499.10	5.53	75.60	y=2.18x+7.4	0.9995	1.32	3.05	89.9
Cinnamic acid derivatives								
Ferulic acid	2.10-505.60	2.10	12.17	y=19.02x-68.4	0.9992	0.7	2.45	102.6
Ferulic acid methyl ester	0.45-499.76	0.45	1.37	y=793.13x+4764.76	0.9999	2.21	2.98	83.4
Ferulic acid ethyl ester	0.11-498.50	0.11	0.32	y=2013.99x+16320.9	0.9994	3.21	3.69	93.6
Caffeic acid	1.21-500	1.21	1.25	y=92.95x+344.4	0.9995	1.01	2.21	100.1
Dihydrocaffeic acid	97.28-499.66	97.28	294.81	y=11.92+64.06	0.9998	0.97	1.14	94.4
<i>trans</i> -cinnamaldehyde	0.76-500.6	0.76	2.30	y=270.02x+832.24	0.9997	1.59	2.63	93.2
<i>trans</i> -cinnamyl alcohol	1.37-498.14	1.37	4.16	y=82.34x+552.83	0.9993	2.24	2.59	99.9

<i>p</i> -coumaric acid	0.65-497.30	0.65	1.55	$y=52.84x+36.9$	0.9997	1.7	1.94	93.2
<i>m</i> -coumaric acid	1.21-497.70	1.21	2.87	$Y=70.92x+473.76$	0.9996	1.64	2.24	97.8
Rosmarinic acid	2.32-499.50	2.32	2.56	$y=7.03x+12.34$	0.9996	1.3	3.02	86.9
Chlorogenic acid	3.48-495.60	3.48	4.76	$y=25.02x+60.3$	0.9991	1.35	1.98	87.4
Neochlorogenic acid	3.21-499.85	3.21	9.72	$y=85.69x+39.87$	0.9996	1.11	2.48	99.9
4-O-caffeoylquinic acid	2.29-496.34	2.29	6.93	$y=15.9x+12.25$	0.9963	1.21	2.19	98.7
<b>Coumarin derivatives</b>								
Coumarin	0.91-497.55	0.91	2.76	$y=2370.35x+15986.5$	0.9997	2.36	3.62	92.1
<i>m</i> -hydroxycoumarin	11.84-503.71	11.84	35.90	$y=2.59x+22.96$	0.9970	1.34	3.01	97.8
<i>p</i> -hydroxycoumarin	1.06-498.01	1.06	3.21	$y=1104.02x+9957.32$	0.9992	2.21	2.59	96.1
7- hydroxycoumarin	1.98-498.10	1.98	6.02	$Y=62.10x+907.80$	0.9990	1.94	2.46	99.24
Osthol	0.11-499.80	0.11	0.3	$y=1772.94x+30399.4$	0.9999	1.36	2.15	95.7
<b>Phenolic derivative</b>								
Eugenol	3.63-497.40	3.63	11.01	$y=89.12x+643$	0.9987	2.25	4.68	101.2
<b>Furanocoumarin derivatives</b>								
Psoralen	1.21-499.30	1.21	3.66	$y=3573.86x+22526.4$	0.9994	2.18	2.69	96.4
Isopimpinellin	0.45-96.16	0.45	14.85	$y=2987.59x+3078.12$	0.9975	3.21	4.12	98.4
Xanthotoxin	0.30-496.65	0.3	0.9	$y=983.972x+13022.7$	0.9996	2.69	3.62	101.2
Xanthotoxol	0.27-498.16	0.27	0.81	$y=1276.71x+9756.89$	0.9992	1.58	2.21	95.5
<b>Flavanone derivatives</b>								
2'-hydroxyflavanone	19.50-250.00	19.50	20.12	$y=38.69x+22.5$	0.9998	2.7	4.32	99.5
7-hydroxyflavanone	1.97-249.90	1.97	2.21	$y=51.17x-73.6$	1	2.63	1.42	98.9
4'-methoxyflavanone	2.21-250.00	2.21	3.89	$y=83.54x+60.3$	0.9999	2.89	1.87	93.6
Naringin	3.01-250.60	3.01	1.21	$y=22.88x-43.3$	0.9997	2.22	4.02	95.4

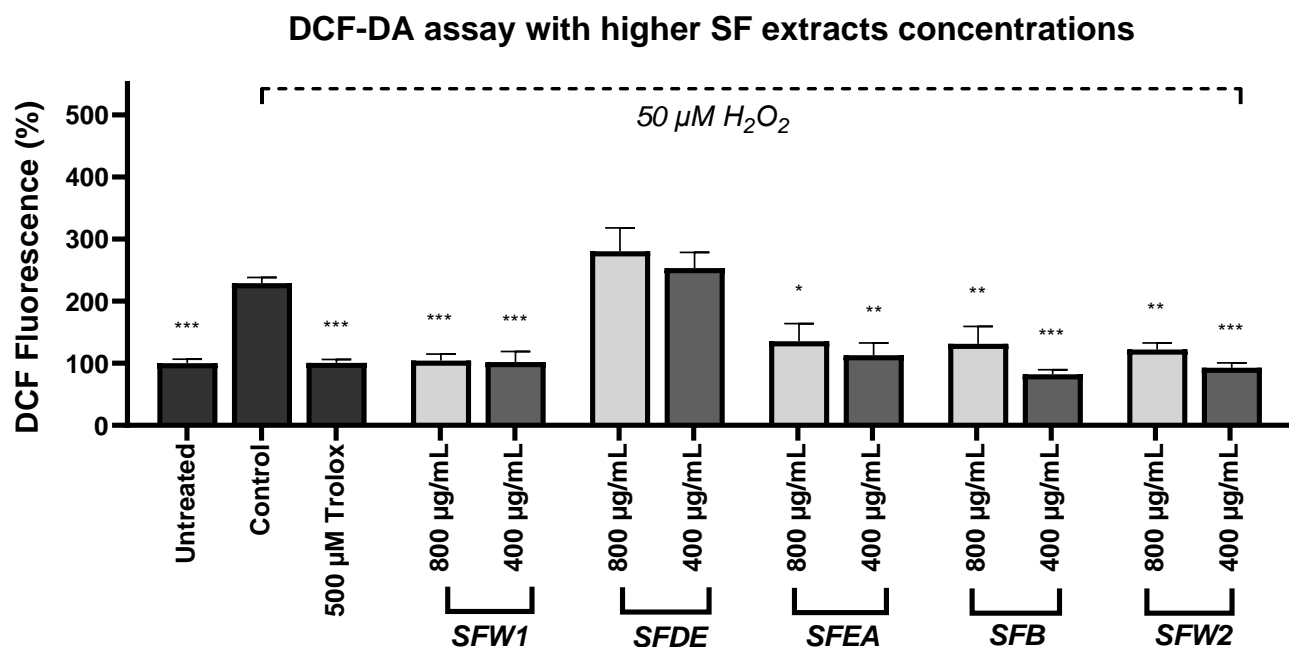


Flavone derivatives								
Apigenin	1.53-499.98	1.53	4.66	$y=64.17x+735.75$	0.9998	1.36	2.47	97.7
Apigenin-7-O-glucoside	1.87-125.30	1.87	4.42	$y=6.17x+3.8$	0.9998	3.48	2.54	95.8
Luteolin	5.85-499.37	5.85	17.73	$y=10.02x+123.29$	0.9997	1.11	2.21	99.1
Luteolin-7-O-glucoside	2.21-250.10	2.21	2.22	$y=51.52x-89.9$	0.9998	3.64	3.22	89.2
Flavonol derivatives								
Isorhamnetin	14.01-251.1	14.01	2.31	$y=6.08x-15.4$	0.9992	2.48	1.18	100.1
Quercetin	1.98-250.06	1.98	6.00	$y=32.48x-11.28$	1	3.21	4.68	98.7
Quercetin-3-O-rhamnoside	1.02-250.60	1.02	4.21	$y=60.83x-38.6$	0.9999	2.21	3.01	99.8
Quercetin-3-O-rutinoside	1.40-251.30	1.40	4.32	$y=97.74x+109.7$	0.9999	1.35	1.89	87.4
Quercetin-3-O-galactoside	6.32-249.90	6.32	3.21	$y=3.97x+0.5$	0.9998	2.14	1.37	96.3
Myricetin-3-O-rhamnoside	3.12-500.00	3.12	9.47	$y=17.99x+80.65$	0.9997	1.10	2.01	100.6
Myricetin-3-O-galactoside	0.85-251.20	0.85	2.12	$y=26.38x-31.8$	0.9997	1.78	1.65	100.2
Kaempferol	10.61-499.28	10.61	32.16	$y=2.59543x+14.47$	0.9995	2.32	2.69	89.9
Kaempferol-3-O-rutinoside	0.76-250.00	0.76	1.21	$y=25.73x+73.7$	0.9997	1.36	2.21	91.2
Catechins and Procyanidins								
Procyanidin-B2	2.04-498.94	2.04	6.18	$y=10.76x+42.68$	0.9998	2.36	3.12	96.3
(-)-Epicatechin	7.90-498.50	7.90	29.94	$y=7.50x+84.57$	0.9918	1.26	2.36	97.8
(Di)terpenes								
Carnosic acid	2.35-499.99	2.35	7.12	$y=45x+69.87$	0.9999	1.96	2.68	89.8
Carnosol	1.12-489-69	1.12	3.39	$y=36.14x-23.64$	1	2.21	2.98	93.6

**Figure S1:** Selected ion recording (SIR) (centroid acquisition) spectra of the fractions of methanolic extract: (A) the aqueous (SFW1), (B) diethyl ether (SFDE), (C) ethyl acetate (SFEA), (D) butanolic (organic phase) (SFB) and (E) aqueous-phase of butanol (SFW2) of *S. fruticosa*. Scanning ( $m/z$ ; 120–650) was carried out utilizing collisions energies and  $m/z$  in the negative and positive electrospray ionization (ESI $\pm$ ) mode in accordance with the collision energy as presented in Table S4: 1) *trans*-cinnamyl alcohol, 2) *p*-hydroxy benzaldehyde, 3) *m*-hydroxybenzoic acid, 4) coumarin, 5) vanillin, 6) protocatechuic acid, 7) gentisic acid, 8) *p*-hydroxy coumarin, 9) *m*-coumaric acid, 10) 7-hydroxy coumarin, 11) eugenol, 12) gallic acid, 13) caffeic acid, 14) dihydro caffeic acid, 15) ferulic acid, 16) syringic acid, 17) ethyl gallate, 18) ferulic acid ethyl ester, 19) 2'-hydroxyflavanone, 20) 7-hydroxyflavanone, 21) osthol, 22) 4'-methoxyflavanone, 23) apigenin, 24) luteolin, 25) (-)-epicatechin, 26) ellagic acid, 27) quercetin, 28) isorhamnetin, 29) carnosol, 30) carnosic acid, 31) chlorogenic acid, 32) neochlorogenic acid, 33) 4-*O*-caffeoylquinic acid, 34) rosmarinic acid, 35) kaempferol-3-*O*-rutinoside, 36) apigenin-7-*O*-glucoside, 37) quercetin-3-*O*-rhamnoside, 38) luteolin-7-*O*-glucoside, 39) myricetin-3-*O*-rhamnoside, 40) quercetin-3-*O*-galactoside, 41) myricetin-3-*O*-galactoside, 42) naringin, 43) quercetin-3-*O*-rutinoside, 44) *trans*-cinnamaldehyde, 45) *p*-hydroxy benzoic acid, 46) *m*-hydroxy coumarin, 47) *p*-coumaric acid, 48) ferulic acid methyl ester, 49) xanthotoxin, 50) procyanidin-B2, 51) xanthotoxol, 52) isopimpinellin, 53) kaempferol.



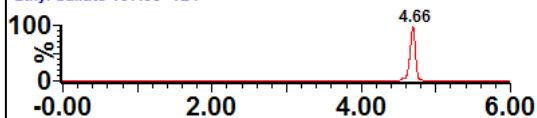
**Figure S2:** Effect of higher concentrations of the five SF methanolic partitions on ROS levels in the presence of  $H_2O_2$  in SH-SY5Y cells. Error bars depict the standard error of the mean of four independent experiments. Statistically significant differences between group means were determined by one-way analysis of variance ( $F(12, 39) = 13.09, p < 0.001$ ). Post hoc Dunnett's multiple comparison tests followed, to compare the control with each different extract's treatment. \* refers to  $p < 0.05$ , \*\* to  $p < 0.01$ , and \*\*\* to  $p < 0.001$  statistical significance, compared with control cells that were treated with  $50 \mu M H_2O_2$  only.



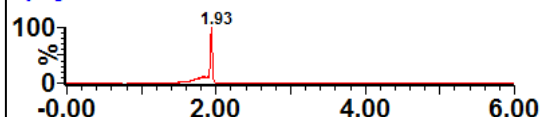
**Figure S3:** The chromatograms of the polyphenolic standards in the MRM mode, ionised with both positive and negative electron spray ionisation ( $\pm$ -ESI). The quantification signal is denoted into the spectra.

### Gallic acid derivatives

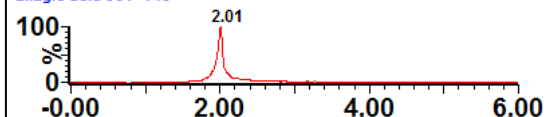
Ethyl Gallate 197.05>124



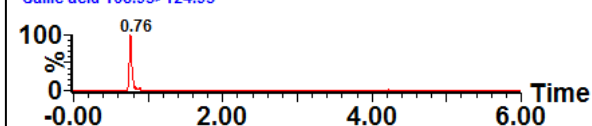
Syringic acid 197>182



Ellagic acid 301>145

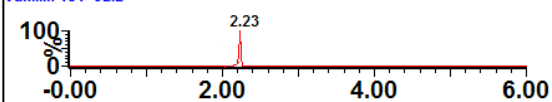


Gallic acid 168.95>124.95

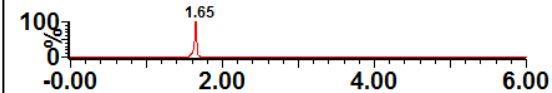


### Benzoic acid derivatives

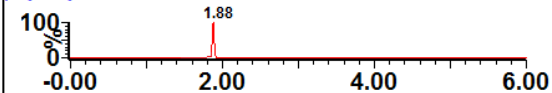
Vanillin 151>92.2



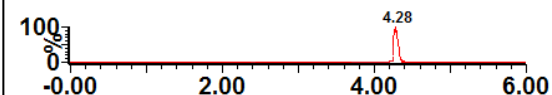
Protocatechuic acid 152.95>108.95



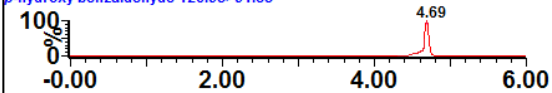
p-hydroxybenzoic acid 136.95>93



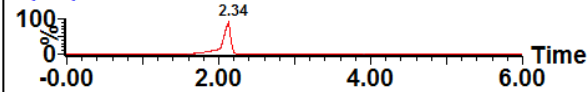
Gentisic acid 153.05>108.2



p-hydroxy benzaldehyde 120.95>91.85

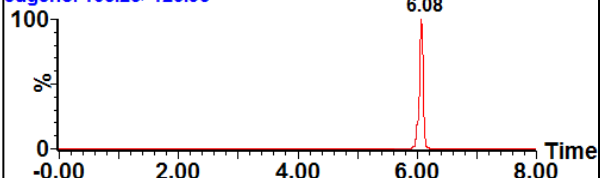


m-hydroxybenzoic acid 137.05>92.9



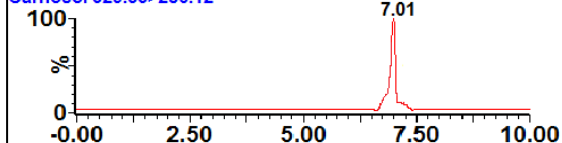
### Phenolic derivatives

eugenol 165.25>123.95

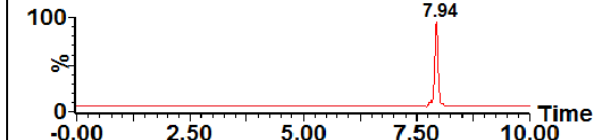


### Di(terpenes)

Carnosol 329.53>286.12

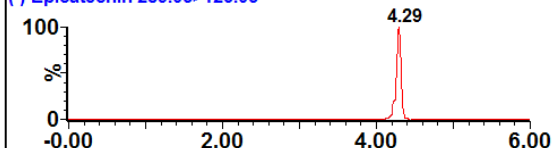


Carnosic acid 331.50>287.98

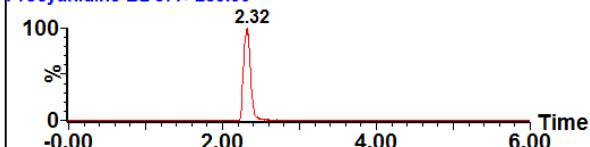


### Catechins and Procyanidins

(-)-Epicatechin 289.05>123.05

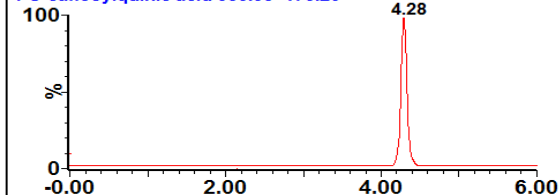


Procyanidine-B2 577>289.30

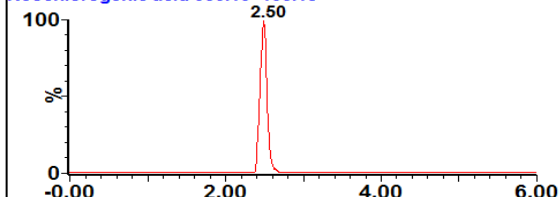


### Cinnamic acid derivatives (1)

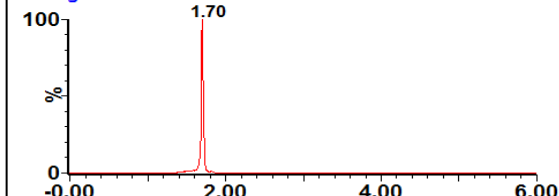
4-O-caffeoylquinic acid 353.35>173.20



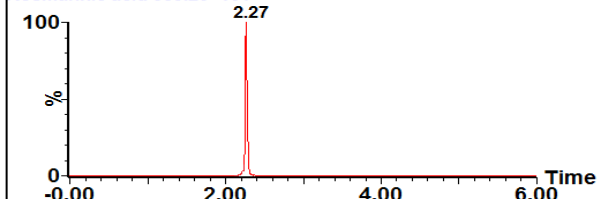
Neochlorogenic acid 353.13>135.18



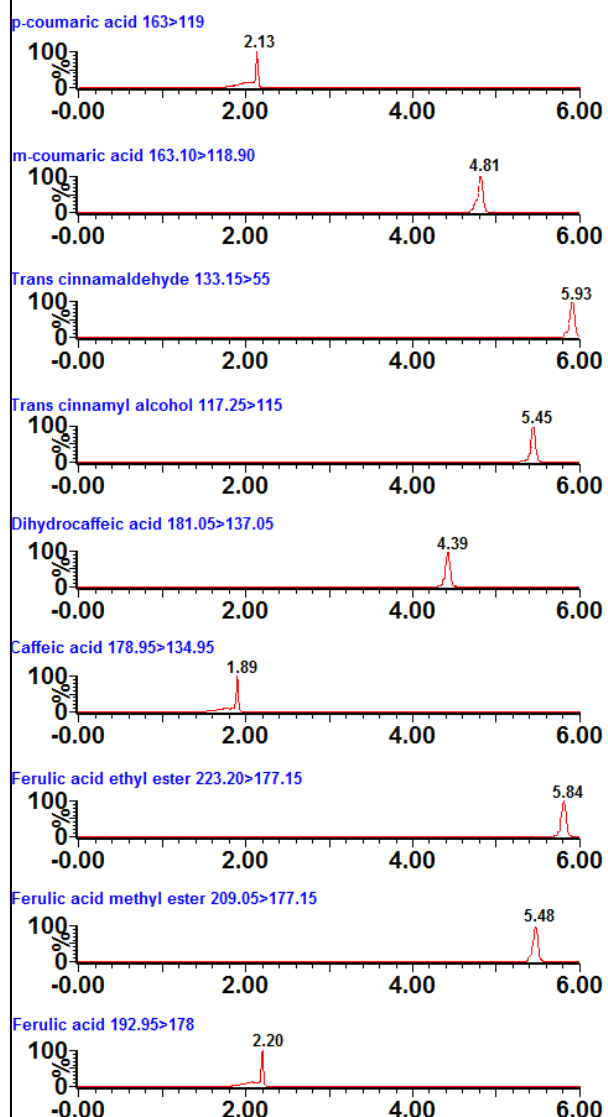
Chlorogenic acid 353.10>191.02



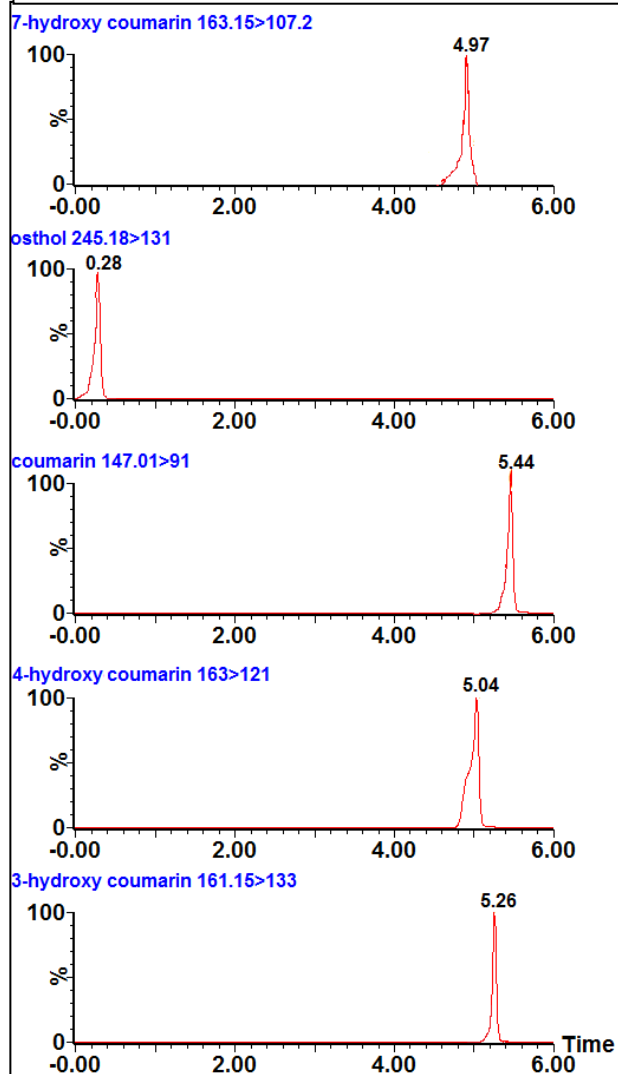
Rosmarinic acid 359.20>161



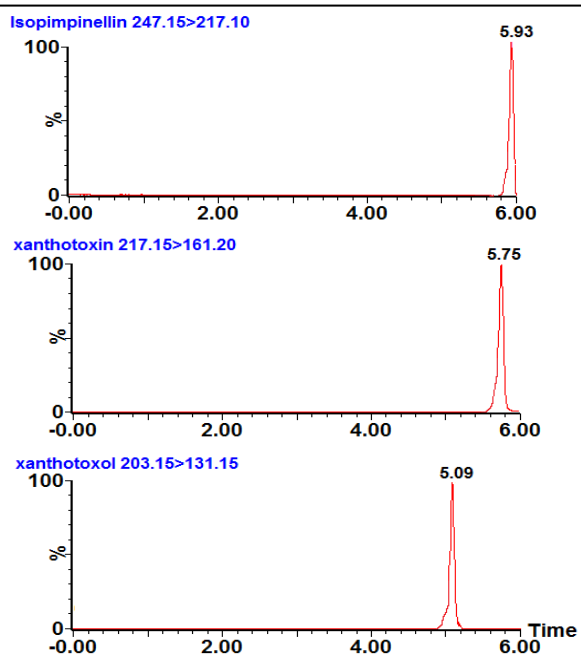
## Cinnamic acid derivatives (2)



## Coumarin derivatives

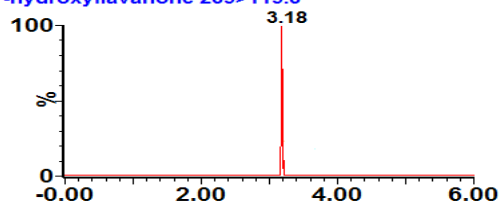


## Furanocoumarin derivatives

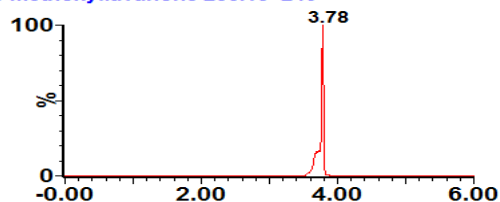


## Flavanone derivatives

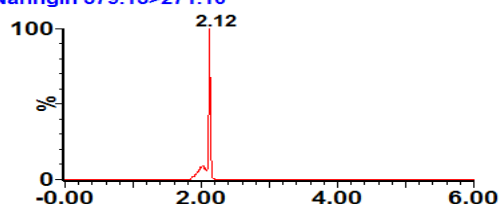
7-hydroxyflavanone 239>119.3



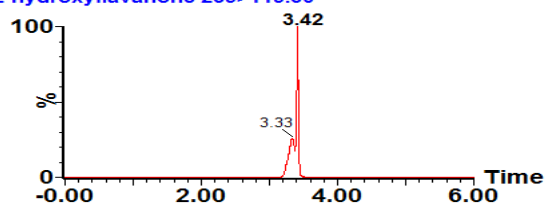
4-methoxyflavanone 255.15>240



Naringin 579.15>271.10

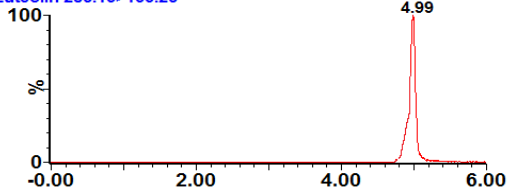


2-hydroxyflavanone 239>119.30

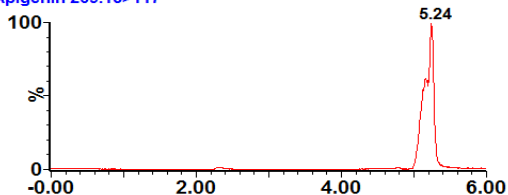


## Flavone derivatives

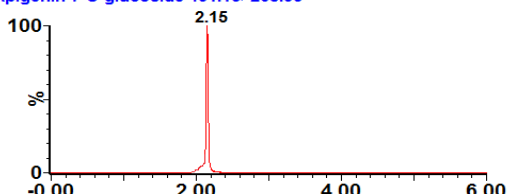
Luteolin 285.13>133.25



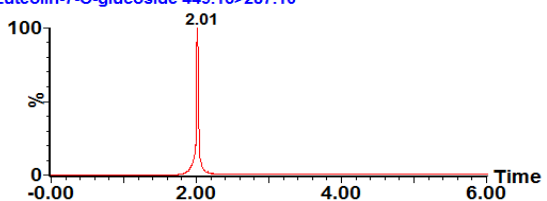
Apigenin 269.15>117



Apigenin-7-O-glucoside 431.15>268.35

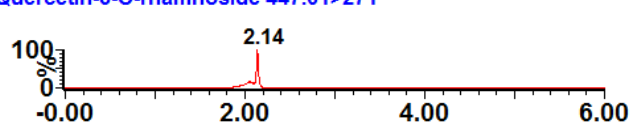


Luteolin-7-O-glucoside 449.15>287.10

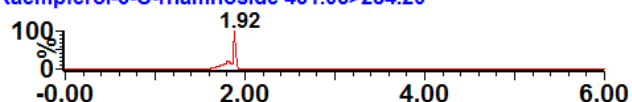


## Flavonol derivatives

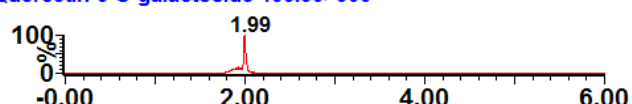
Quercetin-3-O-rhamnoside 447.01>271



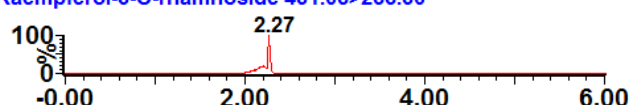
Kaempferol-3-O-rhamnoside 431.05>284.20



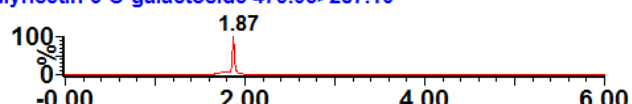
Quercetin-3-O-galactoside 463.30>300



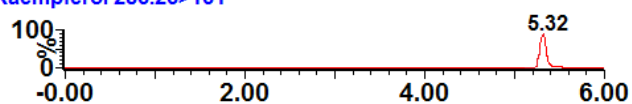
Kaempferol-3-O-rhamnoside 431.05>255.30



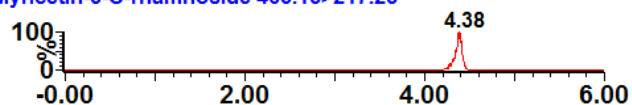
Myricetin-3-O-galactoside 479.05>287.10



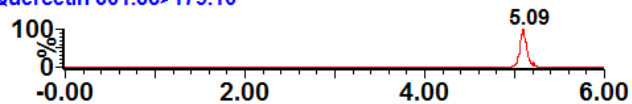
Kaempferol 285.25>151



Myricetin-3-O-rhamnoside 463.15>217.25



Quercetin 301.35>179.10



Isorhamnetin 315>151

