

Potential of the bioavailability of blueberry phenolic compounds by co-ingested grape phenolic compounds in mice, revealed by targeted metabolomic profiling in plasma and feces

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Table S1: Concentrations of phenolic metabolites identified in plasma of mice following acute administration of fruit extracts (D0t30).

Metabolite	Plasma concentration (nM)			
	Control	Blueberry	Grape	Blueberry-grape
(+)-Catechin	ND	ND	705 ± 183	444 ± 79
(-)-Epicatechin	ND	ND	1481 ± 249	1105 ± 186
Catechins glucuronide	ND	ND	96860 ± 10060	92348 ± 14664
Catechins sulfate	ND	ND	10076 ± 3893	21159 ± 6503
Catechins glucuronide sulfate	ND	ND	3157 ± 642	3293 ± 1454
Methyl catechins glucuronide	ND	ND	29188 ± 3665	27938 ± 2447
Methyl catechins sulfate	ND	ND	4762 ± 957	4854 ± 1101
B-type procyanidins dimers	ND	ND	1298 ± 382	1298 ± 271
Dihydroxyphenyl-γ-valerolactone	ND	ND	67 ± 44	174 ± 85
Resveratrol glucuronide	ND	ND	45 ± 9	87 ± 18
Quercetin glucuronide	ND	6 ± 2	ND	12 ± 3
Petunidin 3-glucoside	ND	1 ± 0.3	ND	3 ± 0.4
Malvidin 3-glucoside	ND	5 ± 1	ND	11 ± 1
Chlorogenic acid	ND	320 ± 120	ND	874 ± 180
Dihydroxycinnamic acid	ND	3312 ± 735	47 ± 10	2541 ± 627
Ferulic acid	2 ± 2	62 ± 12	16 ± 2	45 ± 6
Gallic acid	ND	211 ± 110	8854 ± 1120	9324 ± 1581
Protocatechuic acid	ND	535 ± 93	104 ± 21	484 ± 103
Vanillic acid	44 ± 19	198 ± 33	98 ± 25	256 ± 49
Total (μM)	< 0.05	5 ± 1	157 ± 12	166 ± 25

Data are expressed as mean of replicates ± SEM (control group: n=6 mice, treated groups: n=10).
ND: Not detected

Table S2: Concentrations of phenolic metabolites identified in plasma of mice following chronic administration of fruit extracts (D15t30).

Metabolite	Plasma concentration (nM)			
	Control	Blueberry	Grape	Blueberry-grape
(+)-Catechin	ND	ND	968 ± 357	821 ± 227
(-)-Epicatechin	ND	ND	2705 ± 550	3701 ± 1058
Catechins glucuronide	ND	ND	97650 ± 18129	169357 ± 33929
Catechins sulfate	ND	ND	27922 ± 8728	54063 ± 21491
Catechins glucuronide sulfate	ND	ND	5648 ± 1490	11236 ± 3750
Methyl catechins glucuronide	ND	ND	44098 ± 5578	72475 ± 9901
Methyl catechins sulfate	ND	ND	9697 ± 2661	13432 ± 4035
B-type procyanidins dimers	ND	ND	2258 ± 1028	2384 ± 797
Dihydroxyphenyl-γ-valerolactone	ND	ND	1080 ± 471	1369 ± 856
Resveratrol glucuronide	ND	ND	45 ± 17	120 ± 45
Quercetin glucuronide	ND	10 ± 5	ND	30 ± 7
Petunidin 3-glucoside	ND	2 ± 0.3	ND	8 ± 2
Malvidin 3-glucoside	ND	8 ± 2	ND	36 ± 11
Chlorogenic acid	ND	362 ± 87	ND	1962 ± 784
Dihydroxycinnamic acid	81 ± 56	4765 ± 1545	185 ± 94	6035 ± 1574
Ferulic acid	25 ± 15	162 ± 58	50 ± 17	151 ± 31
Gallic acid	ND	189 ± 32	5914 ± 1372	10835 ± 2464
Protocatechuic acid	ND	591 ± 168	111 ± 30	965 ± 300
Vanillic acid	22 ± 9	273 ± 93	164 ± 40	526 ± 146
Total (µM)	< 0.2	6 ± 2	198 ± 34	350 ± 72

Data are expressed as mean of replicates ± SEM (control group: n=6 mice, treated groups: n=10).
 ND: Not detected

Table S3: Concentrations of phenolic metabolites identified in feces of mice following chronic administration of fruit extracts (D1-D15).

Metabolite	Concentration in feces (pmol/g)			
	Control	Blueberry	Grape	Blueberry-grape
(+)-Catechin	ND	ND	10183 ± 1752	10610 ± 2181
(-)-Epicatechin	ND	ND	14201 ± 2135	16243 ± 4161
Catechins glucuronide	ND	ND	8474 ± 2027	6157 ± 1221
Catechins sulfate	ND	ND	303123 ± 46085	171137 ± 54465
Catechins glucuronide sulfate	ND	ND	1042 ± 261	793 ± 233
Methyl catechins glucuronide	ND	ND	3414 ± 543	2494 ± 517
Methyl catechins sulfate	ND	2071 ± 441	130663 ± 17587	104483 ± 24347
Methyl catechins glucuronide sulfate	ND	ND	255 ± 26	278 ± 53
B-type procyanidins dimers	ND	87 ± 19	82565 ± 7946	75577 ± 12131
B-type procyanidins trimers	ND	ND	2463 ± 262	2488 ± 346
Hydroxyphenyl-γ-valerolactone	ND	ND	61884 ± 7800	47647 ± 9683
Dihydroxyphenyl-γ-valerolactone	ND	6318 ± 1412	145113 ± 7863	105825 ± 17806
Resveratrol	ND	ND	9 ± 3	7 ± 2
Resveratrol sulfate	ND	ND	663 ± 207	547 ± 292
Dihydro-resveratrol	ND	ND	54 ± 7	61 ± 13
Quercetin glucuronide	ND	431 ± 126	17 ± 3	147 ± 22
Quercetin sulfate	ND	213 ± 38	ND	131 ± 17
Quercetin glucuronide sulfate	ND	318 ± 103	19 ± 3	214 ± 44
Cyanidin 3-glucoside	ND	51 ± 12	ND	14 ± 2
Malvidin 3-arabinoside	ND	302 ± 83	ND	227 ± 44
Delphinidin 3-glucoside	ND	87 ± 25	ND	14 ± 1
Petunidin 3-glucoside	ND	157 ± 45	ND	50 ± 13
Malvidin 3-glucoside	ND	202 ± 51	ND	171 ± 36
3,4-dihydroxyphenyl propionic acid	1046 ± 607	1651 ± 614	10065 ± 3439	6567 ± 1982
3,4-dihydroxyphenyl acetic acid	3279 ± 867	20398 ± 3419	4457 ± 1324	9834 ± 2913
Chlorogenic acid	ND	38111 ± 6181	ND	8505 ± 663
Protocatechuic acid	10025 ± 969	34994 ± 5278	4858 ± 288	10652 ± 1349
Total (nmol/g)	14 ± 2	105 ± 17	784 ± 59	581 ± 90

Data are expressed as mean of replicates ± SEM (control group: n=6 mice, treated groups: n=10).

ND: Not detected