

Caffeine-Containing Energy Shots cause Acute Impaired Glucoregulation in Adolescents

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Supplemental Material

Tables

Table S1. Serum compounds significantly correlating with caffeine intake (DECAF vs. CAF) or caffeine metabolism score (Low vs. High). Given are raw p-values and correlation coefficients from general linear model analysis. *Significant after correction for multiple testing.

Chemical shift [ppm]	Metabolite ID	p-values		Coefficients	
		Slow vs. Fast Caffeine Metabolism Score	DECAF vs. CAF	Slow vs. Fast Caffeine Metabolism Score	DECAF vs. CAF
8.35,8.33	folic acid	9.67E-01	6.97E-03*	3.61E+01	9.40E+02
7.913,7.9	caffeine	1.33E-01	4.02E-16*	6.07E+02	4.53E+03
6.915,6.885	?	1.04E-02*	8.73E-01	-2.75E+03	-1.63E+02
5.51,5.5	?	9.30E-03*	3.03E-01	1.57E+03	5.90E+02
5.25,5.24	glucose	2.41E-03*	2.47E-02	1.19E+05	8.37E+04
5.24,5.23	glucose	3.27E-03*	2.80E-02	1.19E+05	8.49E+04
5.1935,5.184	?	1.67E-01	1.59E-02*	1.79E+03	3.07E+03
4.34,4.33	tartaric acid	4.99E-01	3.24E-05*	-9.23E+02	-5.50E+03
4.18,4.17	?	1.14E-02*	2.74E-01	3.07E+03	1.26E+03
4.17,4.16	?	1.70E-02*	1.72E-01	2.61E+03	1.43E+03
4.16,4.15	lactic acid	5.43E-02	1.07E-02*	2.05E+03	2.68E+03
4.14,4.13	lactic acid	3.66E-01	3.91E-03*	6.43E+03	2.00E+04
4.13,4.12	lactic acid	4.52E-02	6.22E-03*	4.12E+04	5.57E+04
4.12,4.11	lactic acid	2.42E-02	7.52E-03*	4.68E+04	5.47E+04
4.11,4.1	lactic acid	2.09E-02	6.36E-03*	1.82E+04	2.12E+04
4.02,4.01	?	1.26E-03*	9.17E-02	5.09E+03	2.49E+03
3.97,3.965	caffeine	3.16E-01	2.35E-15*	4.13E+03	4.09E+04
3.95,3.94	1,7-dimethylxanthine	1.72E-02*	1.90E-03*	5.11E+03	6.62E+03
3.93,3.92	glucose	1.07E-02*	5.49E-02	1.63E+04	1.18E+04
3.92,3.91	glucose	2.80E-03*	2.75E-02	1.39E+05	9.76E+04
3.91,3.9	glucose	7.38E-03*	8.46E-01	2.52E+04	1.73E+03
3.9,3.89	glucose	3.09E-03*	2.97E-02	1.80E+05	1.26E+05
3.89,3.88	glucose	1.50E-02*	1.46E-01	8.83E+03	5.06E+03
3.87,3.86	glucose	2.09E-03*	2.98E-02	4.42E+04	2.96E+04
3.85,3.84	glucose	2.58E-03*	2.48E-02	1.43E+05	1.02E+05
3.84,3.83	glucose	2.72E-03*	2.97E-02	1.35E+05	9.34E+04

3.83,3.82	glucose	2.05E-03*	2.71E-02	7.47E+04	5.08E+04
3.82,3.81	glucose	6.88E-03*	6.86E-02	3.06E+04	1.97E+04
3.76,3.75	glucose	5.41E-03*	8.05E-02	3.52E+04	2.10E+04
3.75,3.74	glucose	2.40E-03*	2.84E-02	9.89E+04	6.79E+04
3.74,3.73	glucose	2.44E-03*	2.22E-02	1.51E+05	1.08E+05
3.73,3.72	glucose	2.25E-03*	2.76E-02	1.34E+05	9.21E+04
3.72,3.71	glucose	3.80E-03*	3.11E-02	1.50E+05	1.06E+05
3.71,3.7	glucose	2.45E-03*	2.95E-02	7.42E+04	5.07E+04
3.7,3.69	glucose	3.97E-03*	7.47E-01	1.45E+04	1.53E+03
3.54,3.53	glucose	2.63E-03*	3.43E-02	7.73E+04	5.17E+04
3.53,3.52	glucose	1.42E-02*	6.33E-02	3.45E+04	2.51E+04
3.52,3.51	glucose	8.69E-03*	1.05E-01	5.19E+04	3.06E+04
3.51,3.5	glucose	1.42E-02*	4.30E-02	4.01E+04	3.19E+04
3.5,3.49	glucose	1.98E-03*	2.30E-02	1.98E+05	1.38E+05
3.48,3.47	glucose	4.67E-03*	2.93E-02	1.51E+05	1.11E+05
3.47,3.46	glucose	2.80E-03*	2.78E-02	1.37E+05	9.63E+04
3.46,3.45	glucose	4.26E-03*	3.09E-02	1.11E+05	8.00E+04
3.44,3.43	glucose	7.98E-03*	2.25E-02	5.66E+04	4.70E+04
3.43,3.42	glucose	3.01E-03*	2.70E-02	1.82E+05	1.29E+05
3.42,3.41	glucose	2.31E-03*	2.05E-02	1.39E+05	1.01E+05
3.41,3.4	glucose	3.61E-03*	2.36E-02	1.86E+05	1.38E+05
3.4,3.39	glucose	3.39E-03*	2.87E-02	6.50E+04	4.63E+04
3.39,3.38	glucose	5.99E-03*	2.48E-02	8.88E+03	6.98E+03
3.38,3.37	glucose	9.99E-04*	6.61E-02	5.94E+03	3.10E+03
3.335,3.327	1,7Dimethylxanthine	2.16E-01	2.09E-03*	-1.87E+03	5.25E+03
3.27,3.26	glucose	1.14E-03*	7.97E-01	1.36E+05	9.97E+03
3.26,3.25	glucose	3.66E-03*	4.26E-02	9.18E+04	6.10E+04
3.25,3.24	glucose	4.46E-03*	2.74E-02	1.34E+05	9.92E+04
3.24,3.23	glucose	2.12E-03*	3.68E-02	9.64E+04	6.20E+04
3.21,3.2	choline	8.77E-03*	3.19E-04*	6.82E+03	-1.01E+04
3.16,3.15	?	9.60E-03*	6.27E-01	7.09E+03	-1.27E+03
2.73,2.72	?	9.15E-03*	6.01E-01	1.09E+03	-2.09E+02
2.7,2.68	citric acid	7.82E-03*	6.20E-02	4.49E+03	3.01E+03
2.675,2.655	citric acid	5.75E-03*	5.65E-02	6.42E+03	4.23E+03
2.57,2.56	?	3.02E-01	3.53E-03*	4.01E+02	1.11E+03
2.56,2.54	citric acid	2.25E-03*	3.06E-02	7.03E+03	4.72E+03
2.54,2.534	citric acid	4.29E-03*	2.25E-01	1.22E+03	4.88E+02
2.534,2.515	citric acid	3.03E-03*	2.33E-02	5.38E+03	3.93E+03
2.37,2.36	proline	4.52E-03*	8.73E-01	-3.19E+03	1.69E+02
2.36,2.35	proline	3.22E-03*	7.14E-01	-4.36E+03	5.11E+02
2.35,2.34	proline	7.13E-04*	2.53E-01	-4.86E+03	1.53E+03
2.34,2.33	?	1.02E-02*	1.35E-01	-3.64E+03	2.08E+03
2.33,2.32	folic acid	2.55E-01	6.12E-03*	-7.32E+02	1.96E+03
2.3,2.29	?	1.93E-01	9.64E-03*	-7.10E+02	1.54E+03
2.07,2.06	proline	2.52E-03*	7.65E-01	-3.65E+03	-3.36E+02
2.06,2.05	proline	2.15E-03*	8.83E-01	-3.85E+03	-1.73E+02
2.04,2.03	proline	4.71E-03*	5.67E-01	-3.06E+03	5.88E+02
2.03,2.02	proline	3.45E-03*	7.12E-01	-6.10E+03	7.25E+02
2.02,2.01	proline	6.59E-03*	6.81E-01	-8.92E+03	1.28E+03
2.01,2	proline	8.71E-03*	5.91E-01	-8.43E+03	1.65E+03
2,1.99	proline	3.56E-03*	8.62E-01	-5.34E+03	2.99E+02
1.72,1.71	?	1.66E-02*	2.86E-01	-3.47E+03	-1.48E+03
1.71,1.7	?	1.11E-02*	2.44E-01	-2.56E+03	-1.12E+03
1.36,1.35	?	1.68E-02*	1.84E-01	3.06E+03	1.63E+03
1.34,1.33	lactic acid	3.77E-02	8.44E-03*	2.03E+05	2.53E+05
1.33,1.32	lactic acid	3.72E-02	9.87E-03*	2.09E+05	2.55E+05
1.31,1.3	lactic acid	3.15E-01	1.12E-02*	1.01E+03	2.50E+03

1.13,1.12	?	2.97E-02	1.46E-02*	1.32E+03	1.46E+03
1.03,1.02	?	1.72E-02*	9.55E-01	-1.20E+03	2.75E+01
0.98,0.97	?	1.64E-02*	4.83E-01	-6.36E+03	-1.77E+03
0.92,0.91	?	1.45E-02*	9.05E-02	4.04E+03	2.69E+03
0.91,0.9	?	2.11E-03*	7.51E-02	8.82E+03	4.80E+03
0.9,0.89	?	1.01E-02*	1.77E-01	3.61E+03	1.80E+03

Figures

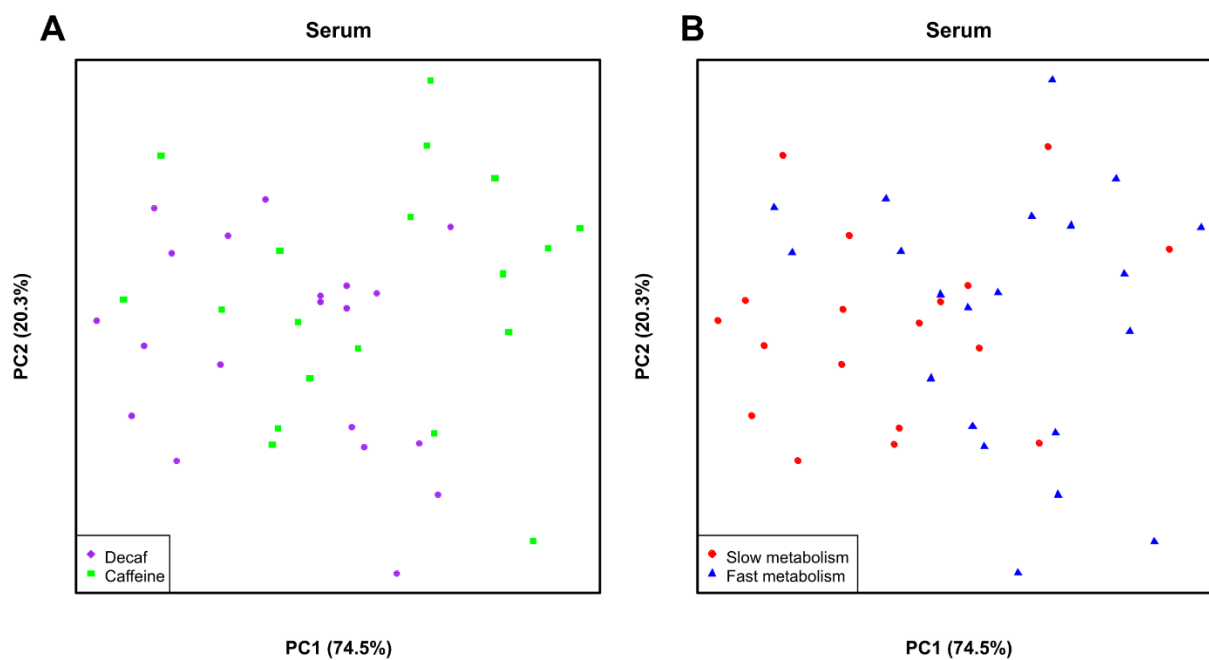


Figure S1. Serum metabolomics (1H-NMR) of 120min time point of each OGTT. (A) PCA analysis of the full NMR data set, showing DECAF and CAF treatments. (B) PCA analysis showing slow and fast allele scores.