Multi-way ANOVA analysis for the relation
between the blood analyte and the outcome of weight maintenance / dietary component

note:

WL: continued weight-losers, WR: weight-regainers, HP: high protein, LP: low protein, LGI: low GI, HGI: high GI.

Dependent variable in in the model: Ln transformed CID3/CID2 ratio of the blood analyte.
Fixed factors: outcome of weight maintenace, dietary protein, dietary glycemic index (GI), and all interactions.

Raw model: without covariate.
Controlled model: with age, weight CID2/CID1 ratio and the analyte CID2/CID1 ratio as covariates.
bold p-value: significant on p<0.03, equivalent to multiple testing FDR q<0.25.
In multiple comparison, means without a common letter are different (p<0.05, Sidak post-hoc test).

I. biomarker of the outcome of weight maintenance

Analyte	Model	mean CID3/CID2		WL/WR	p_{anova}
		WL	WR		
LEP	raw	1.39	1.69	0.82	**0.011**
	controlled	1.34	1.76	0.76	**<0.001**
CRP	raw	0.75	1.24	0.61	**0.002**
	controlled	0.79	1.17	0.67	**0.005**

II. biomarker of the dietary component level

1) biomarker of the dietary protein level

Analyte	Model	Pooled n=96 mean CID3/CID2 LP	Pooled n=96 mean CID3/CID2 HP	Pooled n=96 fold LP/HP	Pooled n=96 p_{anova}	WL n=48 mean CID3/CID2 LP	WL n=48 mean CID3/CID2 HP	WL n=48 fold LP/HP	WL n=48 p_{anova}	WR n=48 mean CID3/CID2 LP	WR n=48 mean CID3/CID2 HP	WR n=48 fold LP/HP	WR n=48 p_{anova}
TES	raw	0.88	1.03	0.86	**0.026**	0.93	1.02	0.91	0.349	0.84	1.04	0.80	**0.029**
	controlled	0.88	1.04	0.85	**0.014**	0.92	1.03	0.90	0.302	0.83	1.05	0.79	**0.014**
CRP	raw	0.82	1.12	0.73	0.041	0.77	0.74	1.04	0.856	0.88	1.75	0.50	**0.005**
	controlled	0.82	1.13	0.73	**0.021**	0.74	0.77	0.96	0.818	0.92	1.67	0.55	**0.007**
LEP	raw	1.64	1.43	1.15	0.061	1.47	1.32	1.11	0.192	1.85	1.55	1.20	0.168
	controlled	1.67	1.41	1.19	**0.014**	1.52	1.27	1.19	0.031	1.86	1.55	1.20	0.072
INS	raw	1.30	1.06	1.22	**0.017**	1.28	1.00	1.27	0.065	1.32	1.13	1.17	0.133
	controlled	1.25	1.11	1.13	0.124	1.23	1.04	1.18	0.227	1.28	1.17	1.10	0.281
GCG	raw	1.08	0.99	1.10	**0.019**	1.06	1.00	1.05	0.343	1.11	0.97	1.14	**0.021**
	controlled	1.07	1.00	1.08	0.071	1.05	1.01	1.04	0.454	1.11	0.98	1.13	0.049

2) biomarker of the dietary GI level

No

3) biomarker of the interaction between dietary protein and GI level

Analyte	Model	Pooled n=96 mean CID3/CID2 LP/LGI	Pooled n=96 mean CID3/CID2 LP/HGI	Pooled n=96 mean CID3/CID2 HP/LGI	Pooled n=96 mean CID3/CID2 HP/HGI	Pooled n=96 p_{anova}	WL n=48 mean CID3/CID2 LP/LGI	WL n=48 mean CID3/CID2 LP/HGI	WL n=48 mean CID3/CID2 HP/LGI	WL n=48 mean CID3/CID2 HP/HGI	WL n=48 p_{anova}	WR n=48 mean CID3/CID2 LP/LGI	WR n=48 mean CID3/CID2 LP/HGI	WR n=48 mean CID3/CID2 HP/LGI	WR n=48 mean CID3/CID2 HP/HGI	WR n=48 p_{anova}
AGT	raw	0.63 a	1.04 a	1.13 a	0.72 a	0.049	0.72 a	0.82 a	0.80 a	0.74 a	0.780	0.55 a	1.35 a	1.69 a	0.70 a	**0.006**
	controlled	0.56 a	1.00 a	1.36 a	0.73 a	**0.016**	0.51 a	0.92 a	0.92 a	0.80 a	0.342	0.51 a	1.21 ab	2.02 b	0.73 ab	**0.005**
INS	raw	1.24 a	1.36 a	1.14 a	1.00 a	0.173	1.18 a	1.38 a	1.00 a	1.01 a	0.542	1.31 a	1.34 a	1.29 a	0.99 a	0.161
	controlled	1.15 a	1.35 a	1.19 a	1.03 a	0.051	1.15 a	1.31 a	1.09 a	1.00 a	0.394	1.16 a	1.42 a	1.28 a	1.07 a	**0.030**
LH	raw	0.84 a	1.05 a	1.01 a	1.08 a	0.291	0.92 a	0.99 a	0.96 a	1.14 a	0.657	0.77 a	1.12 a	1.07 a	1.01 a	0.039
	controlled	0.84 a	1.01 ab	1.10 b	1.03 ab	0.056	0.95 a	0.95 a	1.02 a	1.09 a	0.694	0.77 a	1.04 ab	1.21 b	0.95 ab	**0.003**
RBP4	raw	0.90 a	1.35 a	1.11 a	1.15 a	0.237	0.89 a	1.61 a	1.15 a	0.83 a	**0.016**	0.91 a	1.12 a	1.08 a	1.60 a	0.725
	controlled	0.96 a	1.21 a	1.13 a	1.19 a	0.521	0.89 a	1.46 a	1.20 a	0.87 a	0.036	1.01 a	1.09 a	1.02 a	1.57 a	0.382
PAI1	raw	1.27 ab	1.09 ab	0.76 a	1.55 b	**0.022**	1.27 ab	0.96 ab	0.59 a	1.44 b	**0.010**	1.27 a	1.25 a	0.98 a	1.68 a	0.365
	controlled	1.25 a	1.07 a	0.82 a	1.50 a	0.044	1.27 a	0.97 a	0.61 a	1.41 a	**0.022**	1.28 a	1.11 a	1.12 a	1.65 a	0.370

III. biomarker of the interaction between the weight maintenance and dietary component

1) biomarker of the interaction between the weight maintenance and dietary protein level

Analyte	Model	mean CID3/CID2				p_{anova}
		WL/LP	WL/HP	WR/LP	WR/HP	
RETN	raw	1.04 a	0.93 a	0.93 a	1.06 a	**0.017**
	controlled	1.04 a	0.96 a	0.91 a	1.05 a	**0.021**
CRP	raw	0.77 a	0.74 a	0.88 a	1.75 b	**0.023**
	controlled	0.78 a	0.81 a	0.87 a	1.58 b	0.040
HP	raw	1.08 a	1.03 a	1.04 a	1.14 a	0.129
	controlled	1.09 a	1.04 a	1.02 a	1.15 a	**0.025**

2) biomarker of the interaction of the weight maintenance and diet GI level

no

3) biomarker of the interaction between weight maintenance and dietary protein and GI levels

Analyte	Model		mean CID3/CID2				p_{anova}
			LP/LGI	LP/HGI	HP/LGI	HP/HGI	
LH	raw	WL	0.92 a	0.99 a	0.96 a	1.14 a	0.086
		WR	0.77 a	1.12 a	1.07 a	1.01 a	
	controlled	WL	0.92 ab	0.97 ab	1.02 ab	1.13 ab	**0.023**
		WR	0.77 a	1.06 ab	1.20 b	0.94 ab	
GH	raw	WL	0.43 a	1.24 a	1.46 a	0.94 a	**0.024**
		WR	1.00 a	0.52 a	0.54 a	1.17 a	
	controlled	WL	0.47 a	1.19 a	1.42 a	0.89 a	0.037
		WR	1.04 a	0.60 a	0.51 a	1.09 a	