Table S1 True positive rate at a fixed false positive rate of 0.01 for a group size of $10 + 10$.

fold change: 3	Human gut I				Human gut II				Marine			
Method	B	LU	U	HU	B	LU	U	HU	B	LU	U	HU
TMM	0.62	0.61	0.58	0.48	0.63	0.66	0.59	0.43	0.66	0.66	0.61	0.54
RLE	0.63	0.60	0.55	0.42	0.62	0.64	0.60	0.46	0.66	0.65	0.59	0.49
CSS	0.61	0.59	0.53	0.39	0.65	0.66	0.55	0.36	0.69	0.67	0.61	0.49
RCSS	0.61	0.58	0.56	0.43	0.62	0.66	0.59	0.47	0.65	0.61	0.50	0.33
quantile-quantile	0.69	0.65	0.56	0.34	0.64	0.63	0.54	0.38	0.67	0.62	0.46	0.27
upper quartile	0.61	0.57	0.49	0.28	0.63	0.66	0.56	0.37	0.66	0.58	0.42	0.25
median	0.62	0.58	0.50	0.33	0.64	0.65	0.52	0.29	0.68	0.65	0.59	0.43
total count	0.61	0.58	0.54	0.39	0.63	0.65	0.57	0.42	0.65	0.61	0.49	0.33
rarefying	0.63	0.60	0.57	0.42	0.49	0.49	0.44	0.34	0.66	0.61	0.50	0.34
fold change: 5	Human gut I				Human gut II				Marine			
Method	B	LU	U	HU	B	LU	U	HU	B	LU	U	HU
TMM	0.72	0.72	0.70	0.60	0.83	0.81	0.79	0.65	0.78	0.77	0.75	0.64
RLE	0.72	0.72	0.67	0.54	0.83	0.79	0.79	0.68	0.78	0.77	0.73	0.57
CSS	0.74	0.72	0.63	0.46	0.84	0.80	0.71	0.42	0.81	0.80	0.69	0.51
RCSS	0.70	0.70	0.66	0.53	0.82	0.81	0.77	0.65	0.77	0.70	0.59	0.37
quantile-quantile	0.78	0.75	0.65	0.41	0.79	0.77	0.67	0.47	0.80	0.71	0.52	0.29
upper quartile	0.71	0.68	0.59	0.36	0.82	0.79	0.73	0.50	0.78	0.63	0.45	0.24
median	0.72	0.68	0.57	0.33	0.83	0.79	0.68	0.38	0.80	0.78	0.67	0.46
total count	0.71	0.70	0.64	0.48	0.82	0.80	0.76	0.56	0.77	0.70	0.57	0.36
rarefying	0.72	0.72	0.66	0.51	0.69	0.66	0.63	0.50	0.77	0.70	0.58	0.37

B: balanced, 10% effects added. 50% in each group,
LU: lightly-unbalanced, 10% effects added. 75%-25% is each group,
U: unbalanced, 10% effects added. 100% in only one group,
HU: heavily-unbalanced, 20% effects added. 100% in only one group.