

Table S4. The results from the ANOVA analysis performed on NMR based metabolite data to investigate the differences between low BMI and high BMI groups including all subjects. MH = mean high BMI, ML = mean low BMI.

| No. | Metabolites | <i>p</i> -value | Effect size (%) | Fold change (MH/ML) |
|-----|----------------|-----------------|-----------------|---------------------|
| 1 | leucine | 0.0032 | 7.83 | 1.2492 |
| 2 | isoleucine | 0.0143 | 5.48 | 1.2102 |
| 3 | valine | 0.0049 | 7.15 | 1.2391 |
| 4 | propionic acid | 0.0367 | 4.01 | 1.1678 |
| 5 | alanine | 0.0014 | 9.15 | 1.2754 |
| 6 | methionine | 0.0352 | 4.08 | 1.2688 |
| 7 | glutamic acid | 0.0179 | 5.13 | 1.4895 |
| 8 | pyruvic acid | 0.0300 | 4.33 | 1.5769 |
| 9 | lysine | 0.0091 | 6.19 | 1.2376 |
| 10 | glycine | 0.0076 | 6.47 | 1.2030 |
| 11 | uracil | 0.0067 | 6.66 | 1.2345 |
| 12 | tyrosine | 0.0232 | 4.72 | 1.2047 |
| 13 | phenylalanine | 0.0026 | 8.17 | 1.2588 |
| 14 | xanthine | 0.0078 | 6.41 | 1.3692 |