

Microcolonic *in-vitro* fermentation and multi-omics analysis

Apple *in-vitro* digestion

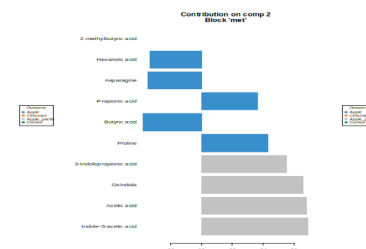
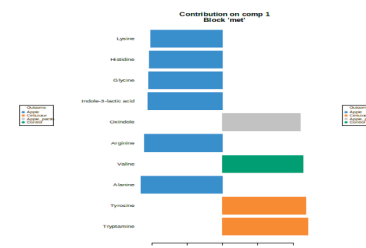
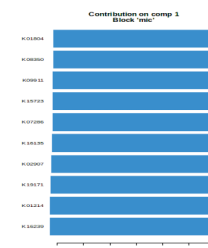
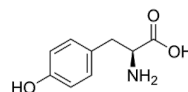
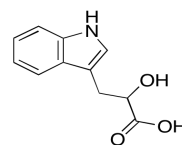
Targeted Metabolomics

Multi-Omics Data Integration

Apple pectin

Synthesis of indole phenolic acids (e.g. IPA, ILA)

**Depletion of essential amino acids
(e.g. phenylalanine, tyrosine, methionine)**



Tailored dietary intervention targeting on the obese gut microbiota in comparison to a lean one