

# Short-chain fatty acid PLUS assay

Study the interaction between diet, microbiome, and energy metabolism

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# Short-chain fatty acid PLUS (SCFA+) assay

The ideal triad for studying metabolic health and the microbiome

## Short-chain fatty acids (SCFA)

Microbial metabolites involved in metabolic health, energy metabolism, and immune balance.



## Branched-chain fatty acids (BCFA)

Diet-based gut bacterial mediators of the gut-brain axis.



## Medium-chain fatty acids (MCFAs)

Energy carriers involved in insulin-resistance and the gut-immune axis.



## Covered metabolites

Analyte (short name)	LLOQ* [ $\mu$ M] in plasma   serum	LLOQ* [nmol/g] in feces
Acetic acid (FA 2:0)	12	180
Propionic acid (FA 3:0)	4.8	72
Isobutyric acid (FA 3:0-2M)*	0.48	7.20
Butyric acid (FA 4:0)	9.6	720
2-Methylbutyric acid (FA 4:0-2M)*	0.48	7.20
Isovaleric acid (FA 4:0-3M)*	0.48	7.20
Valeric acid (FA 5:0)	0.96	14.4
2-Methylvaleric acid (FA 5:0-2M)*	0.024	0.36
3-Methylvaleric acid (FA 5:0-3M)*	0.024	0.36
Isocaproic acid (FA 5:0-4M)*	0.024	0.36
Caproic acid (FA 6:0)	0.72	10.8
4-Methylhexanoic acid (FA 6:0-4M)*	0.024	0.36
5-Methylhexanoic acid (FA 6:0-5M)*	0.024	0.36
Heptanoic acid (FA 7:0)	0.12	1.80
Caprylic acid (FA 8:0)	0.06	0.90
Nonanoic acid (FA 9:0)	0.12	1.80
Capric acid (FA 10:0)	0.12	1.80
Undecanoic acid (FA 11:0)	0.024	0.36
Lauric acid (FA 12:0)	0.48	7.20

11 SCFAs

8 MCFAs

Quantify up to 19 metabolites and 19 metabolism indicators

Standardized, quality-controlled assay with absolute quantification, optimized sample handling and normalization protocols for different matrices.

### Analytical details

- LC-MS-based assay
- Robust 7-point calibration
- 3 levels of quality controls

### Sample requirements

- 60  $\mu$ L plasma/serum
- 200-500 mg feces, wet weight (minimum technical amount: 50 mg)
- 3-spot sampling (recommended): 3 x 200-500 mg feces
- For other matrices, please contact us (<https://biocrates.com/contact>)

\* Branched-chain fatty acid  
\* Lower limit of quantification

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