

# In vitro short-term colonic screening of compounds for gut microbiome interaction

**Commonly used acronym:** Short-term SHIME

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## Organisation

**Name of the organisation** ProDigest

**Department** Contract Research

**Country** Belgium

**Geographical Area** Flemish Region

## Partners and collaborations

ProDigest, ProDigest

## SCOPE OF THE METHOD

<b>The Method relates to</b>	Animal health, Human health
<b>The Method is situated in</b>	Basic Research
<b>Type of method</b>	In vitro - Ex vivo

## DESCRIPTION

**Method keywords**

gut microbiota

metabolic profiling

metagenome

screening

gut health

short-term

human

### **Scientific area keywords**

fibre

probiotic

prebiotic

postbiotic

api

stability

drug-bug interaction

host-microbiome interaction

inter-individual variability

IBD

pathogen

### **Method description**

ProDigest's short-term colonic simulation is an *in vitro* model for rapid screening of the interaction between test products and the gut microbiome. The key microbial saccharolytic and proteolytic markers are analysed as well as evolution in the composition of the microbiome and other endpoints as desired by the customer. Ideally suited for cost-efficient investigation of many test products, combinations or formulations, inter-individual variability in effect, ... Model organisms:

- human: adult vs infant, healthy vs diseased
- dog
- cat
- pig
- poultry (caecum)

### **Method status**

History of use

Internally validated

Published in peer reviewed journal

## **PROS, CONS & FUTURE POTENTIAL**

### **Advantages**

Representative of donor microbiome ;

Robust simulation ;

Enough sampling for multiple analyses and kinetic investigations.

### **Challenges**

This set-up considers short-term interactions between one dose of test product and the microbiome.

## **REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION**

### **References**

Van den Abbeele, P., et al., 2018. A combination of xylooligosaccharides and a polyphenol blend affect microbial composition and activity in the distal colon exerting immunomodulating properties on human cells. Journal of Functional Foods, Vol. 47, pp. 163-171.  
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Van den Abbeele, P., et al. 2018. Different Oat Ingredients Stimulate Specific Microbial Metabolites in the Gut Microbiome of Three Human Individuals in Vitro. ACS Omega, Vol. 3 (10), pp. 12446-12456. <https://doi.org/10.1021/acsomega.8b01360>

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