In vitro simulations of the gastrointestinal digestion

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Organisation

Name of the organisation Ghent University (UGent)

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Country Belgium

Geographical Area Flemish Region

SCOPE OF THE METHOD

The Method relates to	Animal health, Human health
The Method is situated in	Basic Research, Translational - Applied Research
Type of method	In vitro - Ex vivo
Specify the type of cells/tissues/organs	Fecal inocula

DESCRIPTION

Method keywords

in vitro digestion

colonic digestion

fecal inocula

Scientific area keywords

in vitro
digestion
chemistry
food safety

Method description

The aim of these *in vitro* digestions is to simulate the gastrointestinal digestion of specific food sources and to identify metabolites that might be formed out of this food source by the residing microbiome. For this purpose, fecal samples will be collected from volunteers and will be prepared as fecal inoculum. The *in vitro* simulation of the gastrointestinal digestion consists of an enzymatic digestion (mouth, stomach and duodenum), followed by a colonic fermentation, for which the fecal inoculum will be used.

Method status

Published in peer reviewed journal

PROS, CONS & FUTURE POTENTIAL

Advantages

Excellent way of evaluating the impact of the microbiome on digestion, without any confounding of the host digestion.

Challenges

No interaction with the host.

REFERENCES, ASSOCIATED DOCUMENTS AND OTHER INFORMATION

References

Van Hecke et al (2014) Journal of Agricultural and Food Chemistry, 62, 1980-1988
Rombouts et al (2017) Scientific Repors, 7, 42514 L.Y.

Hemeryck et al (2018) Food and Chemical Toxicology, 115, 73-87

Associated documents

Rombouts et al, 2017.pdf

Van Hecke et al, 2014.pdf

Hemeryck et al, 2018.pdf

Links

Van Hecke et al, 2014

Rombouts et al, 2017

L.Y. Hemeryck et al, 2018

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