

## Introduction

Non-alcoholic fatty liver is a highly prevalent disease that, if untreated, can progress to non-alcoholic steatohepatitis (NASH). An interplay between western diet and gut microbiota has been reported to be involved in its development (Aron-Wisnewsky et al. 2020). Nutritional strategies can be used to prevent NASH development. In particular, plant extracts, with a great diversity of bioactive molecules including polyphenols and fibers, are a promising approach for a multitargeted strategy against the disease (Nakano et al. 2020). In this context, the aim of this study was to investigate the interactions of Totum-448, a combination of plant extracts designed to prevent NASH, with gut microbiota from healthy human origin, using batch colonic fermentation assays.



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Identify the effects of Totum-448 molecules on human gut microbiota composition and metabolic activities
Evaluate the potential metabolization of Totum-448 by the gut microbiota

## Materials & Methods

Results







## Conclusion

- ✤ No significant effect of Totum-448 on a healthy human gut microbiota activity and composition despite interindividual variability
- role of gut microbiota in plant extracts \* Key bioavailability through very efficient metabolization of Totum-448 polyphenols regardless the donor



✤ No significant effect of Totum-448 on total bacteria load and targeted populations regardless the sampling time

> ⇒ No major effect of a single administration of Totum-448 on the healthy human gut microbiota composition



## Perspectives

- Further metabarcoding analysis of gut microbiota for an in-depth study of Totum-448 effects
- Additional identification of Totum-448 metabolites
- Impact of repeated Totum-448 administration on gut microbiota composition and activities
- Further studies on Totum-448 effects using a more complex model of human gut microbiota, such as the mucosal artificial colon (M-ARCOL)

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Metabolization of polyphenols by human gut microbiota within few hours of fermentation Apparition of new polyphenols metabolites during the fermentation process

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⇒ Very efficient metabolization of Totum-448 polyphenols by human gut microbiota



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MED∳S

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