ICFD 2022
CORK 3-5 MAY 2022

Virtual International Conference on Food Digestion
6th and 7th May, 2021
#VICFD2021

teagasc
Agriculture and Food Development Authority

INRAE

INFOGEST

Dear Colleagues & Friends,

On behalf of the organising and scientific committees, I am delighted to invite you to join us at the **Virtual International Conference on Food Digestion (#VICFD2021)** on 6-7th May 2021.
Due to the worldwide SARS-CoV-2 crisis, the International Conference on Food Digestion was postponed to 2022 (https://www.icfd2022.com/). We hope to see you in Cork next year.
In the interim, our **Virtual International Conference on Food Digestion (#VICFD2021)** gives researchers, especially PhD students, an opportunity to present their results on an international stage.

It is organised as part of the INFOGEST research network (www.cost-infogest.eu), the objective of which is to "improve the health properties of food by sharing our knowledge on the digestive process". INFOGEST is an open global network of more than 400 research scientists (academic and food companies) from over 40 countries.

This book of abstracts details the exciting schedule that awaits us. The conference runs over 2 days and is divided into 7 sessions with 28 oral presentations (O1-28) covering themes broadly corresponding the 6 INFOGEST working groups.

Session 1: Food Digestion and Digestion Models
Session 2: Food interaction and meal digestion
Session 3: Digestive Lipases and Lipid Digestion Absorption models
Session 4: A live session from Australia and New Zealand (all topics)
Session 5: Absorption models
Session 6: Digestive Amylases and Starch Digestion
Session 7: In silico Food Digestion Models & Gut Microbiome

In addition we have a poster session where researchers will present their work as 24 flash presentations of 3 mins in duration (F1-F25).

Looking forward to a stimulating and lively conference

Linda Giblin and André Brodkorb, TEAGASC

Friday 7 May 2021

7.30am to 2pm (Dublin)

Session number	Speaker No	Start time (Dublin)	Speaker	Institute	Country	Title
Session 4: Australia and New Zealand Session Session Chairs: Alejandra Acevedo-Fani (Riddet Institute, New Zealand) and Mike Gidley (University of Queensland, Australia)						
4		7:30 am	Introduction			
4	O15 PhD	7:45 am	Joanna Nadia	Riddet Institute	New Zealand	Effect of food structure on starch hydrolysis during gastric digestion, starch emptying, and glucose absorption in vivo
4	O16 PhD	8:05 am	Nadeesha Dilrukshi	Lincoln University	New Zealand	Effect of extrusion processing on predictive glycemic response of gluten-free snacks based on cowpea and whey protein concentrate
4	O17 PhD	8:25 am	Dongdong Ni	University of Queensland	Australia	Exploring relationships between satiation, perceived satiety, and plant-based snack food features
4	O18 PhD	8:45 am	Weiyan Xiong	Monash University	Australia	Structural features of intact cells in controlling rate and extent of digestion entrapped macro-nutrients
		9:05 am	20 min break			
Session 5: Absorption Models Session Chairs: Linda Giblin (Teagasc, Ireland), Gianfranco Mamone (CNR-ISA, Italy) and Lidia Tomás (AINIA, Spain)						
5	O19 PhD	9:25 am	Hector Tames	IPLA-CSIC	Spain	Development of an intestinal absorption model based on organoids obtained from pig duodenum tissue
5	O20 PhD	9:45 am	Lea Fleury	INRAE BioEcoAgro	France	Comparison of food protein on DPP-IV inhibitory activity, in vivo in rat plasma, and in vitro after intestinal barrier passage
5	O21 PhD	10:05 am	Marta Santos-Hernández	CSIC-UAM	Spain	Food protein digests as inducers of CCK and GLP-1 secretion in STC-1 cells. Receptors involved in enteroendocrine cell signalling
		10:25 am	20 min break			
Session 6: Digestive Amylases and Starch Digestion Session Chairs: Nadja Siegert (Fresenius Kabi, Germany) and Caroline Orfila (University of Leeds, UK)						
6	O22 PhD	10:45 am	Trey T. Koev	Quadram Institute	UK	Structural Changes and Physiological Responsivity of Starch Hydrogels in the Human Gastrointestinal Tract
6	O23 PhD	11:05 am	Raffaele Colosimo	Quadram	UK	The impact of mycoprotein matrix on in vitro carbohydrate digestion: alpha-amylase diffusion through the fungal cell wall, enzyme entrapment, and physiological significance
6	O24 PhD	11:25 am	Jennifer McClure	Quadram	UK	Use of chickpea/red lentil formulation to affect starch gelatinisation and mediate starch digestibility in 3rd generation (3G) extruded
		11:45 am	20 min break			
Session 7: In Silico Food Digestion Models and Gut Microbiome Session Chairs: Steven Le-Feunteun (INRAE, France), Choi-Hong Lai (University of Greenwich, UK), Didier Dupont (INRAE, France) and Alan Mackie (University of Leeds, UK)						
7	O25	12:05 pm	Sarah Verkempinck	KU Leuven	Belgium	Why mathematical modelling of macronutrient hydrolysis should concern you
7	O26 PhD	12:25 pm	Ousmane Suwareh	INRAE Agrocampus Ouest	France	Statistical modeling of in vitro pepsin specificity
7	O27 PhD	12:45 pm	Elisa Dufoo	Universidad Autónoma de Querétaro	Mexico	Metagenomic analysis reveals changes in microbiota profile of an obese, eveningness chronotype person after in vitro pistachio digestion and colonic fermentation
7	O28	1:05 pm	Susann Bellmann	The TIM Company	The Netherlands	In vitro models used for microbiome research: how useful?
		1:25 pm	Final remarks and prizes			
		2:00 pm	**End of Conference**			

Please register here for the ZOOM webinar Day 2: https://zoom.us/webinar/register/WN_jRy4jBvRRfmVUcSR0_TyOQ

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Metagenomic analysis reveals changes in microbiota profile of an obese, eveningness chronotype person after *in vitro* pistachio digestion and colonic fermentation

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Background: Chronodisruption and that late chronotypes impact gut dysbiosis and obesity risk. However, food-derived chronobiotics such as phyto-melatonin (PMT) may alleviate it. Pistachios are a good source of chronobiotics, and to date, they are the most source of PMT reported. This study aimed to evaluate pistachios' *in vitro* chronobiotic potential and microbiota profile after *in vitro* fermentation.

Methods: Pistachio digestion was evaluated under *in vitro* static method. The non-digested pistachio fraction was used as a substrate for an *in vitro* colonic fermentation. After fermentation (6h), fecal microbiota populations were determined by 16S rRNA sequencing.

Results: During all the gastrointestinal stages, bioaccessibility was low for PMT pistachio samples (Oral: 1.92, Gastric: 0.83, Intestinal [60 min]: 1.79, Colonic [6 h]: 0.32%) chemo-informatics, and an *in silico* analysis support the idea that this compound is bioavailable since oral stage. The *in vitro* pistachio fermentation modified microbiota profile at *Phylum* level by an increased and decreased counts of *Firmicutes* and *Bacteroidetes*, respectively. *Actinobacteria* were higher after pistachio fermentation, along with an increased abundance of *Bifidobacterium*.

Conclusion: Pistachio digestion increasing bioaccessibility, and permeability of PTM, also induced microbiota changes; this might alleviate chronodisruption and gut dysbiosis; however additional studies are necessary.