

THE 8TH

BENEFICIAL MICROBES

CONFERENCE

22-24 MARCH 2021

VIRTUAL CONFERENCE

LIVE

**PRE- AND
PROBIOTICS**

**FOR LIFELONG Human
AND Animal Health**

www.BeneficialMicrobes2021.org

CONFERENCE PROGRAMME

(updated 21-3-2021)

ALL TIMES ARE IN CENTRAL EUROPEAN TIME (CET)

Monday 22 March 2021

12:30 - 13:45 Van Gogh Hall

Plenary session

Pre- and probiotics for lifelong human and animal health
(3 presentations)

14:00 - 15:15 Van Gogh Hall

Plenary session

**Pre- and probiotic intervention:
a treatment module to support healthy ageing?**
(4 presentations)

15:30 - 16:30 Van Gogh Hall

Plenary session

The placenta microbiome "battle"
(2 presentations)

16:30 - 17:00 Relax Area

Time to relax!

Tuesday 23 March 2021

10:00 - 11:25 Van Gogh Hall

Session 1

**Pre- and probiotics in health
and disease: what's up?**
(4 presentations)

10:00 - 11:25 Rembrandt Hall

Session 2

**Bacteria, brain & behaviour:
modulation of the gut-brain
axis - animal studies**
(4 presentations)

11:40 - 13:05 Van Gogh Hall

Session 3

**Bacteria, brain & behaviour:
modulation of the gut-brain
axis - human studies**
(in co-operation with ILSI Europe)
(4 presentations)

11:40 - 13:05 Rembrandt Hall

Session 4

**Pre- and probiotics in animal
health and nutrition - Part 1**
(4 presentations)

Continued on next page.

ALL TIMES ARE IN CENTRAL EUROPEAN TIME (CET)

Tuesday 23 March 2021 continued

13:45 - 15:10 Van Gogh Hall

Session 5
**Probiotics and
the skin microbiome**
(4 presentations)

13:45 - 15:10 Rembrandt Hall

Session 6
Beyond the gut (bacteria)
(4 presentations)

15:25 - 16:50 Van Gogh Hall

Session 7
**Milk & microbes:
the journey ahead**
(4 presentations)

15:25 - 16:50 Rembrandt Hall

Session 8
**Beneficial microbes
to combat viral infections
- the focus on SARS-CoV-2**
(4 presentations)

16:50 - 17:15 Relax Area

Time to relax!

Wednesday 24 March 2021

10:00 - 11:25 Van Gogh Hall

Session 9
**Beneficial microbes in health
and disease: what further?**
(4 presentations)

10:00 - 11:25 Rembrandt Hall

Session 10
**Pre- and probiotics in animal
health and nutrition – Part 2**
(4 presentations)

11:40 - 14:00 Van Gogh Hall

Plenary session
Challenges for next-generation probiotic products
(5 presentations)

MONDAY 22 MARCH 2021

12:30 Introduction to the **8th Beneficial Microbes Conference**
Prof. Koen Venema, Maastricht University, the Netherlands

[VAN GOGH HALL](#)

PLENARY SESSION

[VAN GOGH HALL](#)

PRE- AND PROBIOTICS FOR LIFELONG HEALTH

The 8th Beneficial Microbes Conference will provide an overview of the latest scientific results and future developments related to pre- and probiotics and their importance to human and animal health across the lifespan.

Chair: Prof. Koen Venema, Maastricht University, the Netherlands

12:45 *Awakening drugs by feeding bugs*

Dr Filipe Cabreiro, MRC London Institute of Medical Sciences, Imperial College London, UK

13:05 *Microbiota-gut-brain axis and mental health: a neurodevelopmental perspective*

Dr Rochellys Diaz Heijtz, Department of Neuroscience, Karolinska Institutet, Sweden

13:25 *Path towards predictable microbiota outcomes for fibre prebiotics*

Prof. Bruce Hamaker, Whistler Center for Carbohydrate Research, Purdue University, USA

13:45 **Break**

MONDAY 22 MARCH 2021

PLENARY SESSION

VAN GOGH HALL

PRE- AND PROBIOTIC INTERVENTION: A TREATMENT MODULE TO SUPPORT HEALTHY AGEING?

The gut microbiome is emerging as a key factor in the ageing process. Gut dysbiosis has been implicated in the pathogenesis of age-related chronic diseases, including obesity, cardiovascular diseases and neurodegenerative diseases. How can pre- and probiotic intervention help modulate and (partially) restore the gut microbiota and its associated disorders, and support healthy ageing?

Chair: Dr Guus Roeselers, Nutricia Research, the Netherlands

14:00 Chair's introduction

14:05 *Microbiome and brain ageing: finding the fountain of (brain) youth in the gut*
Dr Marcus Böhme, APC Microbiome Ireland, University College Cork, Ireland

14:25 *Microbial mutiny: how your gut microbes turn against you with age*
Erica Dejong, Department of Pathology and Molecular Medicine, McMaster University, Canada

14:45 *Probiotic intervention for the ageing brain*
Prof. Min-Tze Liong, School of Industrial Technology, Universiti Sains Malaysia, Malaysia

15:00 *Introduction to the Innovative Training Network (ITN) 'SmartAge': Gut microbiota as a target to modify cognitive ageing*
Dr Christiane Frahm, Hans Berger Department of Neurology, Jena University Hospital, Germany

15:15 **Break**

MONDAY 22 MARCH 2021

PLENARY SESSION

[VAN GOGH HALL](#)

THE PLACENTA MICROBIOME 'BATTLE'

The human placenta may (or may not) have a low biomass microbiome. Does the placenta house a sparse microbiome? Recent evidence that the placenta harboured a unique microbiome suggested a role for microbes in foetal development, while a few recent studies suggests that other investigators cannot distinguish microbes from contaminants. Can both be true?

Chair: Prof. Koen Venema, Maastricht University, the Netherlands

15:30 Chair's introduction

15:35 *Womb with a view: why the placenta is more conduit and communicator than barrier*
Prof. Kjersti Aagaard, Department of Obstetrics and Gynecology, Baylor College of Medicine, USA

15:50 *All artefact and contamination? Why we need process controls*
Prof. Christine Edwards, School of Medicine, Dentistry & Nursing, University of Glasgow, UK

16:05 Q&A

16:30 **Join the Relax Area!**

17:00 **End of day 1**

TUESDAY 23 MARCH 2021

SESSION 1

[VAN GOGH HALL](#)

PRE- AND PROBIOTICS IN HEALTH AND DISEASE: WHAT'S UP?

The potential application of pre- and probiotics includes prevention and treatment of various health conditions and diseases. In this session, a selection of recent advancements in this field will be presented.

Chair: Dr Arthur Ouwehand, IFF Health & Biosciences, Finland

10:00 Chair's introduction

10:05 *Bifidobacterial strains in newborn intestine originate from their mother*
Dr Hiroshi Makino, Yakult Central Institute, Japan

10:25 *Development of a novel Bifidobacterium breve that protects against NSAID-induced enteropathy*
Dr Anja Wellejus, Chr. Hansen, Denmark

10:45 *Effects of a probiotic fermented dairy drink containing Lactobacillus casei CNCM I-1518 on common infectious diseases: results of a systematic review and meta-analysis*
Dr Stéphanie Jeansen, Danone Nutricia Research, France

11:05 *Effect of supplementation of synbiotic ice cream on immune response, respiratory symptoms, microbiota, and gut-brain axis-related parameters of military subjects*
Dr Adriane E. Antunes de Moraes, School of Applied Sciences, University of Campinas, Brazil

11:25 **Break**

TUESDAY 23 MARCH 2021

SESSION 2

[REMBRANDT HALL](#)

BACTERIA, BRAIN & BEHAVIOUR: MODULATION OF THE GUT-BRAIN AXIS – ANIMAL STUDIES

Alterations in the gut microbiota composition may be associated with pathogenesis of various neurological disorders. Animal studies are the basis of a good understanding of the promises and pitfalls of investigating the gut microbiome in relation to brain health. Here is a selection of recent advancements in the exciting field of the gut-brain axis.

Chair: Prof. Richard Ducatelle, Ghent University, Belgium

10:00 Chair's introduction

10:05 *Effects of Lactobacillus supplementation on cognition and stress responses in piglets*
Dr Else Verbeek, Department of Animal Environment and Health, Swedish University of Agricultural Sciences, Sweden

10:25 *Gut-brain axis: a two way connection for pets well-being*
Dr Francesca Susca, Lallemand Animal Nutrition, Italy

10:45 *Early life microbiota transplantation affects behavioural responses in chicken lines divergently selected on feather pecking*
Dr Jerine van der Eijk, Wageningen Livestock Research, Wageningen University and Research, the Netherlands

11:05 *Influence of the microbiota-gut-brain axis on behaviour and welfare in farm animals*
Dr Narjis Kraimi, Department of Medicine, McMaster University, Canada

11:25 **Break**

TUESDAY 23 MARCH 2021

SESSION 3

**BACTERIA, BRAIN & BEHAVIOUR: MODULATION OF THE GUT-BRAIN
AXIS FROM A MECHANISTIC POINT OF VIEW – HUMAN STUDIES
(in co-operation with ILSI Europe)**

How does the gut microbiota influence brain development and function?
How are brain disorders potentially shaped by the gut microbiota? And how
dietary supplements, such as probiotics, have their apparent effect on stress, mood and cognition?
When the mechanisms are unravelled, the potential for improving human quality of life through
modulation of the gut microbiota is vast.



Chair: Dr Lucie Geurts, ILSI Europe, Belgium

11:40 Chair's introduction

11:45 *Big data and microbiome: influence on the gut-brain axis*
Prof. Lesley Hoyles, School of Science & Technology, Nottingham Trent University, UK

12:05 *Gut microbes participate in food preference alterations during obesity*
Prof. Amandine Everard, Louvain Drug Research Institute, UCLouvain, Belgium

12:25 *How probiotics promote brain health*
Prof. Philip Burnet, Department of Psychiatry, University of Oxford, UK

12:45 *Toward mechanistic, translational, and real-life research: role of the immune system*
Prof. Aletta Kraneveld, Department of Pharmaceutical Sciences, Utrecht University, the
Netherlands

13:05 **Break**

TUESDAY 23 MARCH 2021

SESSION 4

[REMBRANDT HALL](#)

PRE- AND PROBIOTICS IN ANIMAL HEALTH AND NUTRITION – PART 1

Recent advances in the use of pre-and probiotics in various animal production systems and their impact on animal productivity will be presented. And what can we learn from animals as a model for human response?

Chair: Dr Frédérique Chaucheyras-Durand, Lallemand, France

11:40 Chair's introduction

11:45 *Perinatal scFOS supplementation improves colostrum's quality and reinforces immune defences of piglets*

Dr Cindy Le Bourgot, Tereos, France

12:05 *The role of luminal pathobionts in sheep parasite gastroenteritis – is probiotic intervention the way forward?*

Dr Alba Cortés, Department of Pharmacy and Pharmaceutical Technology and Parasitology, University of Valencia, Spain

12:25 *Evaluation of a probiotic strategy to fight against ETEC infections in an in vitro model of the weaning piglet colon coupled with porcine cell lines*

Dr Raphaële Gresse, UMR 454 MEDIS, INRAE, Université Clermont Auvergne and Lallemand, France

12:45 *Epigenetic regulation of gut health in animals and the role of microbiota*

Prof. Leluo Guan, Department of Agricultural, Food and Nutritional Science, University of Alberta, Canada

13:05 **Break**

TUESDAY 23 MARCH 2021

SESSION 5

[VAN GOGH HALL](#)

PROBIOTICS AND THE SKIN MICROBIOME

The skin microbiota might play an important role in maintaining skin health. The use of probiotics in therapeutic skin applications is an attractive idea offering an alternative way for treatment of inflammatory skin disorders.

Chair: Prof. Koen Venema, Maastricht University, the Netherlands

13:45 Chair's introduction

13:50 *The influence of host species on the mammalian skin microbiome*

Prof. Josh D. Neufeld, Department of Biology, University of Waterloo, Canada

14:10 *Baby's first flora: molecular mechanisms of microbial colonisation of the skin*

Dr Benjamin Casterline, Pritzker School of Medicine, the University of Chicago, USA

14:30 *The skin microbiome and the development of new skin therapeutics*

Dr Chris Callewaert, Center for Microbial Ecology and Technology, Ghent University, Belgium

14:50 *Cutibacterium acnes, the main component of the facial microbiome and its role in skin ageing*

Dr Amine Zorgani, S-Biomedic, Belgium

15:10 **Break**

TUESDAY 23 MARCH 2021

SESSION 6

[REMBRANDT HALL](#)

BEYOND THE GUT (BACTERIA)

Much research has focused on the gut and the gut bacteria. Looking, however, beyond the gut and its bacteria, what do we see?

Chair: Dr Thomas D. Leser, Chr. Hansen A/S, Denmark

13:45 Chair's introduction

13:50 *Say aah: probiotics and prebiotics for oral health*
Dr Krista Salli, IFF Health & Biosciences, Finland

14:10 *Beyond bacteria: gut fungal community in healthy individuals modulated by diet*
Evy Maas, Faculty of Science and Engineering, Maastricht University, the Netherlands

14:30 *Probiotic microvesicles: the bigger picture*
Christine L. West, McMaster Brain-Body Institute, St. Joseph's Healthcare and Department of Biology, McMaster University, Canada

14:50 *The human gut virome: friends, foes, dark matter, and opportunities for discovery*
Dr Emily Hollister, Diversigen Inc., USA

15:10 **Break**

TUESDAY 23 MARCH 2021

SESSION 7

[VAN GOGH HALL](#)

MILK AND MICROBES: THE JOURNEY AHEAD

Human milk oligosaccharides play a pivotal role in shaping the infant gut microbiota by actively promoting beneficial bacteria. In addition, the notion that viable microorganisms are ubiquitously present in milk produced by healthy lactating mothers suggests that human milk also serves as an important microbial reservoir and transmission route.

Chair: Dr Guus Roeselers, Nutricia Research, the Netherlands

15:25 Chair's introduction

15:30 *Milk microbiota: facts, open questions and roles for mother and offspring health*
Dr Sergine Even, Science & Technology of Milk & Eggs, INRAE, France

15:50 *Breast milk microbiota: beyond bacteria*
Dr Maria Carmen Collado, Department of Food Biotechnology, IATA-CSIC, Spain

16:10 *Human milk: glycobiology and microbiota*
Dr Bernd Stahl, Danone Nutricia Research and Utrecht University, the Netherlands

16:30 *Human milk oligosaccharides: next-generation functions and questions*
Prof. Lars Bode, Department of Pediatrics, University of California, San Diego, USA

16:50 **Join the Relax Area!**

17:30 **End of day 2**

TUESDAY 23 MARCH 2021

SESSION 8

REMBRANDT HALL

BENEFICIAL MICROBES TO COMBAT VIRAL INFECTIONS – THE FOCUS ON SARS-CoV-2

Interspecies transmission of viruses may result in newly emerging diseases causing major threats to public health. Can beneficial microbes play a prophylactic and supportive therapeutic role for the management of such viral diseases? This session will focus on SARS-CoV-2 and collect currently available information providing a starting point for future research related to this topic.

Chair: Prof. Sarah Lebeer, University of Antwerp, Belgium

15:25 Chair's introduction

15:30 *The gut microbiota - could it be a tool in the fight against COVID-19?*

Dr Gemma E. Walton, Department of Food and Nutritional Sciences, University of Reading, UK

15:50 *Looking for a powerful ally: could probiotics be a trump card in preventing and treating Covid-19?*

Dr Benedetta Bottari, Department of Food and Drug Science, University of Parma, Italy

16:10 *Engineered lactobacilli for use in oral vaccines against human coronaviruses*

Prof. Gregg Dean, Department of Microbiology, Immunology and Pathology, Colorado State University, USA

16:30 *COVID-19 vaccine in probiotic bacteria*

Dr Deepika Awasthi, Biological Systems and Engineering Division, Lawrence Berkeley National Laboratory, USA

16:50 **Join the Relax Area!**

17:30 **End of day 2**

WEDNESDAY 24 MARCH 2021

SESSION 9

[VAN GOGH HALL](#)

BENEFICIAL MICROBES IN HEALTH AND DISEASE: WHAT FURTHER?

The use of beneficial microbes is increasing in popularity for both the improvement of health and the treatment of diseases. In this session, some diverse studies will be presented.

Chair: Dr Jiro Nakayama, Kyushu University, Japan

10:00 Chair's introduction

10:05 *Possible contribution of gut dysbiosis to the pathogenesis of anorexia nervosa*
Dr Nobuyuki Sudo, Department of Psychosomatic Medicine, Kyushu University, Japan

10:25 *Pre- and probiotic strategies for gut health in space*
Prof. Silvia Turrone, Department of Pharmacy and Biotechnology, University of Bologna, Italy

10:45 *What's in your yogurt? – Genome stability of Lactobacillus rhamnosus, LGG® during industrial production and in yogurt*
Dr Anita Wichmann, Chr. Hansen, Denmark

11:05 *Biodiversity is at the core of our health, a call for modern recovery of biodiversity for our health*
Marco van Es, Bac2Nature, the Netherlands

11:25 **Break**

WEDNESDAY 24 MARCH 2021

SESSION 10

[REMBRANDT HALL](#)

PRE- AND PROBIOTICS IN ANIMAL HEALTH AND NUTRITION – PART 2

Research is going on to establish the role of pre- and probiotics in animal health and nutrition. Recent advancements will be highlighted.

Chair: Dr Frédérique Chaucheyras-Durand, Lallemand, France

10:00 Chair's introduction

10:05 *Bacterial probiotics for adult horses – new perspectives and future applications*
Prof. Veronique Julliand, AgroSup Dijon, France

10:25 *The effect of carbobiotics on chicken intestinal health*
Miriam Oost, Maastricht University, the Netherlands

10:45 *Supplementation of a live yeast probiotic improves rumen functions and oxidative status of gestating ewes*
Dr Lysiane Dunière, Lallemand, France

11:05 *Pre- and probiotics targeting the microbiota of the small intestine: the story of Bacillus and lactose*
Prof. Richard Ducatelle, Department of Pathology, Bacteriology and Poultry Diseases, Ghent University, Belgium

11:25 **Break**

WEDNESDAY 24 MARCH 2021

PLENARY SESSION

[VAN GOGH HALL](#)

CHALLENGES FOR NEXT-GENERATION PROBIOTIC PRODUCTS

Despite the significant amount of evidence obtained so far on the use of probiotics to promote lifelong human and animal health, a few important questions have not been answered yet, limiting the effective use of probiotics in (clinical) practice. The aim of this session is to highlight some of these existing issues.

Chairs: Prof. Koen Venema, Maastricht University, the Netherlands

Dr Maria Carmen Collado, Spanish National Research Council, Spain

11:40 Chairs' introduction

11:45 *Challenges of using probiotics to manipulate gut metabolites: insights from an applied bioanalyst*

Dr Liam M. Heaney, School of Sport, Exercise and Health Sciences, Loughborough University, UK

12:05 *How the changes in Lactobacillus taxonomy will boost new insights in evolutionary history and ecology*

Prof. Sarah Lebeer, Department of Bioengineering, University of Antwerp, Belgium

12:25 *What's the point in living in someone's gut? The bifidobacterial perspective*

Prof. Douwe van Sinderen, School of Microbiology & APC Microbiome Ireland, University College Cork, Ireland

12:45 **Break**

13:15 *Next generation probiotics that stimulate a healthy mucosa*

Dr Clara Belzer, Department of Agrotechnology and Food Sciences, Wageningen University & Research, the Netherlands

13:35 *Fascinating developments in delivery of viable probiotics to the intestines: a tale of two formulations*

Prof. Koen Venema, Maastricht University, the Netherlands

14:00 Closing of the **8th Beneficial Microbes Conference**

Prof. Koen Venema, conference chair

14:00 – 14:30 **Join the Relax Area!**