THE 7TH BENEFICIAL MICROBES CONFERENCE

PRE- AND PROBIOTICS FOR LIFELONG Human AND Animal Health

26–28 November 2018
AMSTERDAM
THE NETHERLANDS

www.BeneficialMicrobes2018.org
WELCOME

BMC2018 – the 7th 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.

A great programme aiming to define gaps, needs, and opportunities for pre- and probiotics applications over the lifespan has been arranged. Internationally renowned speakers will present their latest research results on pre- and probiotics and the gut microbiome, the microbiome beyond the gut, the microbiota-gut-brain axis, and more. In addition, the role of pre-and probiotics in health will be discussed in a joint ILSI Europe Task Force session.

BMC2018 will also pay special attention to the emerging research area of the mycobiome and the virome. Most research on the human microbiome in healthy and diseased states has focused on the bacterial component, but the mycobiome and the virome are beginning to gain recognition as a fundamental part of our microbiome.

Finally, BMC2018 presents a new creative format: Pre- and probiotic research in humans and animals – ‘the battle’. How to look at pre- and probiotic research from different perspectives? In a dedicated session, specific topics will be presented and discussed from both a human and an animal perspective. By crossing the line between research on pre- and probiotics in health and disease of humans and animals, we can learn from each other and get an understanding of the differences and/or similarities.

The members of the Advisory Committee are looking forward to meet you in Amsterdam! We aim at a networking meeting to create new initiatives for the customised application of pre- and probiotics in food, feed and healthcare.

On behalf of the Advisory Committee,

Prof. Koen Venema, conference chair

ADVISORY COMMITTEE

Dr Frédérique Chaucheyras-Durand
Dr Chieh Jason Chou
Prof. Richard Ducatelle
Dr Emily B. Hollister
Dr Marjorie Koenen
Dr Thomas D. Leser
Dr Jiro Nakayama
Dr Arthur Ouwehand
Dr Gregor Reid
Dr Guus Roeselers
Prof. Henk Schols
Dr Karen Scott
Prof. Koen Venema, conference chair

Lallemand, France
Nestlé Institute of Health Sciences, Switzerland
Ghent University, Belgium
Diversigen, USA
consultant, the Netherlands
Chr. Hansen, Denmark
Kyushu University, Japan
DuPont Nutrition & Health, Finland
University of Western Ontario, Canada
Nutricia Research, the Netherlands
Wageningen University & Research, the Netherlands
University of Aberdeen, UK
Beneficial Microbes Consultancy and
Maastricht University, the Netherlands
## Programme at a Glance

### Monday 26 November 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:00</td>
<td>Opening of <strong>BMC2018</strong> - the 7th Beneficial Microbes Conference</td>
</tr>
</tbody>
</table>
| 13:10 – 14:00 | **Plenary Meeting**  
The potential role of the mycobiome and archaeome in health and disease |
| 14:00 – 15:45 | **Plenary Meeting**  
The battle: Pre- and probiotic research in humans and animals                 |
| 15:45 – 16:15 | Networking break & poster viewing                                                   |
| 16:15 – 17:15 | **Plenary Meeting** (continued)  
The battle: Pre- and probiotic research in humans and animals                   |
| 17:15 – 18:45 | **Plenary Meeting**  
Speed presentations*                                                               |
| 17:45 – 18:45 | Poster viewing & drinks                                                            |

* Short presentation by selected poster presenters to provide an overview of their research and inspire the audience to visit their posters.

### Tuesday 27 November 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>P ARALLEL SESSION 1</th>
<th>P ARALLEL SESSION 2</th>
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<tbody>
<tr>
<td>08:45 – 10:30</td>
<td>The role of pre- and probiotics in health: the potential, the difficulties and the caveats</td>
<td>Pre- and probiotics, animals, and animal models</td>
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<tr>
<td>10:30 – 11:00</td>
<td>Networking break &amp; poster viewing</td>
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</tbody>
</table>
| 11:00 – 12:30 | **Parallel Session 3**  
Pre- and probiotics in health and disease: what further?          | **Parallel Session 2 (continued)**  
Pre- and probiotics, animals, and animal models                                 |
| 12:30 – 13:30 | Lunchbreak & poster viewing                                                        |                                                                                    |
| 13:30 – 15:45 | **Parallel Session 4**  
Pre- and probiotics, modulation of gut microbiota, and more                 | **Parallel Session 5**  
Recent advances in methods and models for beneficial microbes                     |
| 15:45 – 16:15 | Networking break & poster viewing                                                   |                                                                                    |
| 16:15 – 17:30 | **Plenary Meeting**  
Postbiotics – what else?                                                        |                                                                                    |
| 18:00 – 19:00 | Poster viewing & drinks                                                            |                                                                                    |

### Wednesday 28 November 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
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| 08:30 – 10:35 | **Plenary Meeting**  
Probiotic modulation of the microbiota-gut-brain axis |
| 10:35 – 11:00 | Networking break & poster viewing                                                   |
| 11:00 – 12:45 | **Final Plenary Meeting**  
Addressing the potential of the mycobiome and the virome                        |
| 12:45 – 13:00 | Top five lessons learned at **BMC2018**                                           |
| 13:00       | Closing of **BMC2018**                                                            |
CONSERVERCE PROGRAMME

13:00 Opening of BMC2018 – the 7th Beneficial Microbes Conference
Prof. Koen Venema, conference chair

PLENARY MEETING
The potential role of the mycobiome and archaeome in health and disease

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

13:10 The gut mycobiome: why bother about 0.1%?
Dr René van den Wijngaard, Department of Gastroenterology, Academic Medical Centre, the Netherlands

13:35 Archaea, neglected components of the human microbiome
Prof. Christine Moissl-Eichinger, Department of Internal Medicine, Medical University of Graz, Austria

BaseClear, the Netherlands
Morinaga Milk Industry Co. Ltd., Japan
ILSI Europe, Belgium

MEDIA PARTNER

Beneficial Microbes

Your logo here? See the business opportunities!
PLENARY MEETING
‘The battle’: Pre- and probiotic research in humans and animals

How to look at pre- and probiotic research from different perspectives? In this plenary meeting, some specific topics will be discussed from both a human and an animal perspective. By crossing the line between research on pre- and probiotics in health and disease of humans and animals, we can learn from each other and get an understanding of the differences and/or similarities.

Chairs: Prof. Koen Venema, Maastricht University, the Netherlands
Dr Arthur Ouwehand, DuPont Nutrition & Health, Finland

14:00 Probiotics and gut microbiota – weight loss or weight gain friendly?
• Probiotics for weight management, are we there yet?
  Dr Chieh Jason Chou, Nutrient Metabolism and Digestion, Nestlé Institute of Health Sciences, Switzerland
• Microbiota manipulation to improve gut health and weight gain in production animals
  Dr Ivan Rychlík, Department of Immunology, Veterinary Research Institute, Czech Republic

14:40 Q&A

14:50 Filling the fibre gap: implications for human and animal health
• A deeper look at fibre and the human microbiome
  Prof. Tim Spector, Department of Twin Research and Genetic Epidemiology, King’s College London, UK
• Fibre, the underrated nutrient in animal feed formulation
  Prof. Richard Ducatelle, Department of Pathology, Bacteriology and Poultry Diseases, Ghent University, Belgium

15:30 Q&A

15:45 Networking break & poster viewing

16:15 Lactobacilli: friend or foe?
• Lactobacilli: friend or foe?
  Prof. Eric Claassen, Athena Institute, VU Amsterdam, the Netherlands
• Are lactobacilli the panacea alternative to the use of antimicrobials in livestock diets?
  Dr Tim McAllister, Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, Canada

17:00 Q&A

PLENARY MEETING
Speed presentations

Chair: Prof. Henk Schols, Wageningen University & Research, the Netherlands

17:15 – 18:45
Short presentations (6-minutes) by selected poster presenters to provide an overview of their research and inspire the audience to visit their posters.

17:45 – 18:45
Poster viewing & drinks
PARALLEL SESSION 1

The role of pre- and probiotics in health: the potential, the difficulties and the caveats
JOINT ILSI EUROPE TASK FORCE SESSION

Invited experts will highlight current gaps in research that focus on modulating the impact of the human microbiota on host health. In particular, the importance, but also shortcomings, of investigating and unravelling pre- and probiotics effects at the molecular level will be emphasised.

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

08:45 ILSI Europe – Prebiotics, probiotics and the gut microbiota
Dr Tobias Recker, ILSI Europe, Belgium

08:55 Pro- and prebiotics: the long and windy road from believe to health claim
Prof. Bruno Pot, Yakult Europe, the Netherlands

09:15 Can we define structure–function relationships in fermented carbohydrates?
Prof. Robert Rastall, Department of Food and Nutritional Sciences, University of Reading, UK

09:35 Translational analysis of probiotic modes of action
Prof. Sarah Lebeer, Department of Bioengineering, University of Antwerp, Belgium

09:55 Design and conduct of human gut microbiome intervention studies relating to functional foods
Prof. Jonathan Swann, Department of Surgery and Cancer, Imperial College London, UK

10:15 Chair’s conclusions and discussion

10:30 Networking break & poster viewing

PARALLEL SESSION 3

Probiotics in health and disease: what further?

Probiotic use is expanding beyond its established stronghold in digestive health. Research is going on to establish the role of probiotics in supporting emerging areas, such as respiratory health, skin health, and oral health. Recent advancements will be highlighted.

Chair: Dr Karen Scott, University of Aberdeen, UK

11:00 Chair’s introduction

11:05 Digging for diamonds: Lactobacillus species as upper respiratory tract probiotics
Prof. Sarah Lebeer, Department of Bioengineering, University of Antwerp, Belgium

11:25 Therapeutic probiotic use in dermatological diseases: the skin–gut axis
Dr Vicente Navarro López, Department of Clinical Medicine, Universidad Católica San Antonio de Murcia, Spain

11:45 Can common oral diseases be controlled using probiotics?
Prof. Robert Allaker, Institute of Dentistry, Queen Mary University of London, UK

12:05 Lactobacillus rhamnosus LGG® – how mode of action studies help us understand clinical benefits
Dr Anita Wichmann Gustafsson, Microbiome & Human Health Innovation, Chr. Hansen A/S, Denmark

12:25 Chair’s summary

12:30 Lunch break & poster viewing
PARALLEL SESSION 2
Pre- and probiotics, animals, and animal models

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?

Chairs: Dr Frédérique Chaucheiras-Durand, Lallemand, France
Prof. Richard Ducatelle, Ghent University, Belgium

08:45 Chair’s introduction

08:50 The effect of oral supplementation with Spirulina and Chlorella on growth and digestive health in piglets around weaning
Dr Hauteclaire Furbeyre, Physiology, Environment and Genetics, INRA, France

09:10 Benefits of probiotics in monogastric animal production
Antoine Meuter, DSM Nutritional Products, Switzerland

09:30 Probiotics as key elements of nutritional strategies targeting broiler gut function and health in the post antimicrobial growth promoter era
Dr Konstantinos Mountzouris, Department of Nutritional Physiology and Feeding, Agricultural University of Athens, Greece

09:50 The use of lactic acid bacteria as probiotic for broilers
Ida Hindrichsen, Novozymes A/S, Denmark

10:10 Butyrlicoccus, the next generation probiotic that fits into the one health concept
Dr Venessa Eechaut, Department of Pathology. Bacteriology and Poultry Diseases, Ghent University, Belgium

10:30 Networking break & poster viewing

11:00 Metabolic consequences of gut dysbiosis in companion animals
Dr Jan Suchodolski, Department of Small Animal Clinical Sciences, Texas A&M University, USA

11:25 A Pediococcus strain to the rescue of honeybees in decreasing Nosema ceranae-induced adverse effects
Dr Hicham El Alaoui, Laboratoire Microorganismes: Génome et Environnement, Université Blaise Pascal, France

11:45 Preventing Campylobacter infection by Lactobacillus gasseri
Dr Keita Nishiyama, Department of Microbiology, Kitasato University, Japan

12:05 Milk prebiotics for gut and microbiota development in preterm neonates – experience from preterm pigs
Dr Stine Brandt Bering, Department of Veterinary and Animal Sciences, University of Copenhagen, Denmark

12:25 Chair’s summary

12:30 Lunch break & poster viewing
PARALLEL SESSION 4
Pre- and probiotics, modulation of gut microbiota, and more

A selection of recent research on gut microbiota as well as on potential applications and beneficial effects of pre- and probiotics in the digestive tract will be presented.

Chair: Dr Thomas D. Leser, Chr. Hansen, Denmark

13:30 Chair’s introduction

13:35 Early life microbiome interventions impact later life metabolic health
Dr Mona Mischke, Nutricia Research, the Netherlands

13:55 Signatures of longevity in the gut microbiome
Prof. Silvia Turroni, Department of Pharmacy and Biotechnology. University of Bologna. Italy

14:15 Live biotherapeutic strategy targeting functional dysbiosis: a new insight for IBS patients
Dr Laureen Crouzet, Microbiota. Digestive Environment and Health. INRA, France

14:35 The building blocks for a rational design of faecal transplants
Dr Olaf Larsen, Yakult Nederland and Athena Institute. VU Amsterdam. the Netherlands

14:55 Impact of oral formulations on the survival of a Lactobacillus strain in the gastrointestinal tract and the modulation of gut microbiota
Dr Marie-Edith Arnal, Microbiota. Digestive Environment and Health. University of Clermont Auvergne. France

15:15 Unravelling metabolic and xenobiotic interactions of the human gut microbiota
Dr Kiran Raoasaheb Patil, Structural and Computational Biology Unit. European Molecular Biology Laboratory. Germany

15:40 Chair’s summary

15:45 Networking break & poster viewing

PLENARY MEETING
Postbiotics – what else?

Postbiotics refer to soluble factors secreted by live bacteria or released after bacterial lysis that have biologic activity in the host. This session provides an overview of the postbiotic concept and the potential health benefits.

Chair: Dr Guus Roeselers, Nutricia Research, the Netherlands

16:15 Chair’s introduction

16:20 The birth of postbiotics: harnessing the power of fermentation
Prof. Seppo Salminen, Functional Foods Forum. University of Turku. Finland

16:45 Shaping the immunity with bugs and friends
Dr Flavia Indrio, Department of Paediatrics, University of Bari. Italy

17:10 Can postbiotics nurture the infant gut microbiota?
Dr Sebastian Tims, Nutricia Research. the Netherlands

17:30 Heat-killed Lactococcus lactis improves immunity and physical conditions of athletes after high intensity exercise
Dr Toshio Fujii, Research Laboratories for Health Science & Food Technologies. Kirin Co., Japan

18:00- 19:00 Poster viewing & drinks
PARALLEL SESSION 5
Recent advances in methods and models for beneficial microbes

Novel methods and models to select and characterise target-specific for a next generation of probiotics are needed. This session highlights some exciting examples of research under way.

Chair: Dr Jiro Nakayama, Kyushu University, Japan

13:30 Chair’s introduction

13:35 Developing a state of the art ex vivo model to study bacterial probiotic effects using human mini-guts
Dr Jesper Strickertsson, Microbiome & Human Health Innovation. Chr. Hansen A/S, Denmark

13:55 Real-time non-invasive optical imaging and quantification of probiotic BSH activity in vitro and in vivo
Prof. Elena Goun, Institute of Chemical Sciences and Engineering. Ecole polytechnique fédérale de Lausanne. Switzerland

14:15 Lessons from Caenorhabditis elegans: Lactobacillus brevis increases lifespan via the innate immune system
Dr Anders Olsen, Department of Chemistry and Bioscience. Aalborg University. Denmark

14:35 EFSA compliant genome screening of bacterial strains
Dr Tom van den Bogert, BaseClear. the Netherlands

14:55 Welcome to you and your 39 trillion bacteria: microbiome analysis in health and disease
Patricia Vera-Wolf, M.Sc., uBiome, Chile

15:15 Engineering microbes to record temporal biological information with the CRISPR-Cas immune system
Ravi Sheth, Department of Systems Biology. Columbia University. USA

15:40 Chair’s summary

15:45 Networking break & poster viewing

PLENARY MEETING
Postbiotics – what else?

For details, see the previous page.
PLENARY MEETING

Probiotic modulation of the microbiota-gut-brain axis

The gut microbiota has emerged as a key player in the control of the gut-brain axis, a communication that integrates the gut, the enteric nervous system and the central nervous system. Alterations in the gut microbiota composition may be associated with pathogenesis of various neurological disorders. Here is a selection of recent advancements in this exciting field.

Chair: Dr Chieh Jason Chou, Nestlé Institute of Health Sciences, Switzerland

08:30 Chair’s introduction

08:35 Gut reactions and the culture of stress: towards microbial management of brain function and behaviour
Dr Gerard Clarke, APC Microbiome Ireland and Department of Psychiatry, University College Cork, Ireland

08:55 Bugs in amyloidosis: the good, the bad and the ugly
Dr Taoufiq Harach, Reminisciences SA, Switzerland

09:15 Potential of probiotic Bifidobacterium in the prevention of cognitive impairment in Alzheimer’s disease
Dr Jin-zhong Xiao, Next Generation Science Institute, Morinaga Milk Industry Co. Ltd., Japan

09:35 Hype or reality: does gastric Helicobacter control our mind?
Prof. Roosmarijn Vandenbroucke, Center for Inflammation Research, Ghent University, Belgium

09:55 Influence of the microbiota-gut-brain-axis on emotional behaviour in quails
Dr Christine Leterrier, Physiology of Reproduction and Behaviour, INRA, France

10:15 Mechanisms underlying microbial-mediated changes in social behaviour in mouse models of autism spectrum disorder
Prof. Mauro Costa-Mattioli, Department of Neuroscience, Baylor College of Medicine, USA

10:35 Networking break & poster viewing

CALL FOR ABSTRACTS

Interested participants from universities, research institutes and industry are strongly encouraged to submit abstracts for posters. Particularly students are encouraged to submit abstracts.

Submission deadline
15 October 2018

Speed presentations
A number of poster abstracts will be selected for 6-minute talks (‘speed presentations’) on Monday 26 November 2018.

Poster presentation
Posters will be displayed throughout the conference.
**FINAL PLENARY MEETING**

Addressing the potential of the mycobiome and the virome

Current research portends a vital role for the mycobiome in human health and disease. And what about the virome? This final plenary meeting provides some insight into this emerging research area.

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

11:00 Chair’s introduction

11:05 The gut mycobiome in health and disease  
Dr Iliyan Iliev, Department of Microbiology and Immunology, Weill Cornell Medicine, USA

11:30 The mycobiome: exploring new worlds within  
Dr David Moyes, Centre for Host-Microbiome Interaction, King’s College London, UK

11:55 Characterising the most abundant virus associated with humans, crAssphage  
Dr Stephen Stockdale, APC Microbiome Ireland and Teagasc, Ireland

12:20 Identification of viruses in metagenomics data  
Dr Alexandra Zhernakova, Department of Genetics, University Medical College Groningen, the Netherlands

12:45 Top 5 lessons learned at BMC2018  
Prof. Koen Venema, conference chair

13:00 Closing of BMC2018  
*Take your packed lunch to eat along the way!*

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**Rules for submission**

- Abstracts must be sent by email to: BMC@bastiaanse-communication.com
- Abstracts must be submitted in English and shall not exceed 400 words.
- Abstracts will be accepted in Microsoft Word only.
- The Advisory Committee will determine whether the abstract will be accepted for a poster presentation.
- Submission of an abstract acknowledges the author’s acceptance for the abstract to be published in the book of abstracts.
- Presenting authors of abstracts must be registered and paid participants.

**Poster size**

A0 portrait (841 mm x 1189 mm).  
Appropriate means of affixing the poster to the poster board will be supplied on site.
**Website**

The latest details of **BMC2018** – the 7th Beneficial Microbes Conference can be found at the conference website: [www.BeneficialMicrobes2018.org](http://www.BeneficialMicrobes2018.org)

**Who should attend?**

The conference topics are intended to meet the needs of researchers, food, feed and healthcare professionals who want to be updated on the advances in pre- and probiotics research. Interested attendees include basic and translational research scientists, nutritionists, dietitians, physicians, students, policy makers, and key opinion leaders with an interest in pre- and probiotics.

**How to register and book a hotel room?**

For all relevant information on registration fees, on-line registration and hotel accommodation, please go to the conference website: [www.BeneficialMicrobes2018.org](http://www.BeneficialMicrobes2018.org)

**Venue**

The conference will be held in Hotel Casa Amsterdam, the Netherlands. Thanks to the hotel’s unique location near the Amstel Station, the whole city is at your feet.

**About Amsterdam**

Amsterdam provides all you need for an unforgettable getaway. The 17th century historical atmosphere combined with the mentality of a modern metropolis creates a friendly and relaxed environment. The city has the highest museum density in the world and is home to cultural highlights, such as the Van Gogh Museum, Anne Frank House, Hermitage Amsterdam and the Rijksmuseum with Rembrandt’s world-famous Nightwatch. Other well-known places of interest in Amsterdam are the Palace on the Dam, the Artis Zoo, Jewish Historical Museum and the Rembrandt House.

**Business opportunities**

BMC2018 offers various business opportunities, including:

- **Sponsoring of the conference**
  Benefit from excellent name recognition by sponsoring the conference. Sponsoring opportunities covering lunch, evening functions and conference programme material also exist.

- **Exhibiting at the conference**
  Gain valuable direct exposure! Parallel to the conference a commercial exhibition presenting products and services related to pre- and probiotics will be organised.

More information on the business opportunities can be found at the conference website: [www.BeneficialMicrobes2018.org](http://www.BeneficialMicrobes2018.org)

**Language**

English will be the official conference language.

It may be necessary for reasons beyond the control of the organisers to alter the content and timing of the programme or the identity of the speakers.