

# 3<sup>RD</sup> TNO BENEFICIAL MICROBES CONFERENCE

**26-28 MARCH 2012**

**EARLY BIRD  
REGISTRATION  
ENDS  
01-01-2012**

**TNO** innovation  
for life

**INTERNATIONAL CONFERENCE ON THE  
HEALTH IMPACT AND FUTURE POTENTIAL  
OF BENEFICIAL MICROBES**

**NH CONFERENCE CENTRE LEEUWENHORST, NOORDWIJKERHOUT, THE NETHERLANDS**

# WELCOME

With great pleasure we present to you the conference programme of the **3rd TNO Beneficial Microbes Conference** to be held at 26-28 March 2012 in the NH Conference Centre Leeuwenhorst in Noordwijkerhout, the Netherlands.

The microbiota in the gastro-intestinal tract of man and animals has been shown to be important for health and disease. For instance, a clear role has been established for the endogenous microbiota in inflammatory diseases such as ulcerative colitis and Crohn's disease. But also a role in colon cancer has been suggested. Even a role in such diverse diseases or disorders as obesitas and autism has been postulated.

Moreover, over the past decades, the benefit of probiotics has been shown in various areas, including allergy, inflammatory disease, competitive exclusion of pathogens, stool habit, and even reduction of sick-days in the case of flu or stress at work.

Furthermore, probiotics and prebiotics are used in infant formula to direct the development of the endogenous microbiota. For probiotics, an interaction with the mucosal immune system seems the major mechanism by which these beneficial microbes exert their benefit to the host. Numerous hypotheses on how they might work have been postulated recently. The role of prebiotics in directing the composition and activity of the endogenous microbiota is also studied widely.

The **3rd TNO Beneficial Microbes Conference** will highlight the most recent advances in the understanding of the mechanisms behind the health benefit of probiotics and how the endogenous microbiota influences health and disease. Novel tools will be presented and the implementation of systems biology in this research area will be highlighted. An important aspect is application of beneficial microbes, both through probiotics and prebiotics (via the endogenous microbiota), for product development in food and feed industry.

The specific topic areas are the interplay between beneficial microbes and nutrition, the crosstalk between microbes and epithelium or, immune system, application in the gut and elsewhere in man and animals, and future developments in the field of beneficial microbes in the food and feed industry.

We aim at a networking meeting to inform you on the latest scientific developments and the industry's requirements and to create an European platform for new initiatives for the application of beneficial microbes in the food and feed industry.

On behalf of the Advisory Board,

*Koen Venema and Marjorie Koenen*

## ADVISORY BOARD

- › Prof.dr. Jerry Wells, Wageningen University, the Netherlands (chairman)
- › Dr. Michael Cabana, University of California, USA
- › Dr. Frédérique Chaucheyras-Durand, Lallemand, France
- › Prof.dr. Dirk Haller, Technical University of Munich, Germany
- › Dr. Marjorie Koenen, TNO, the Netherlands
- › Dr. Annick Mercenier, Nestlé Research Centre, Switzerland
- › Dr. Jiro Nakayama, Kyushu University, Japan
- › Prof.dr. Theo Niewold, Katholieke Universiteit Leuven, Belgium
- › Dr. Gregor Reid, University of Western Ontario, Canada
- › Dr. Ger Rijkers, University Medical Centers of Utrecht and Nijmegen and St. Antonius Hospital Nieuwegein, the Netherlands
- › Dr. Koen Venema, TNO, the Netherlands

# PROGRAMME AT A GLANCE

<b>Sunday 25 March 2012</b>	<b>17.00 – 22.00</b>	<b>REGISTRATION DESK OPEN</b>
<b>Monday 26 March 2012</b>	<b>10.30 – 11.15</b>	<b>OPENING AND KEYNOTE LECTURE</b>
	<b>11.15 – 13.00</b>	<b>SESSION 1</b> Beneficial microbes and host-microbe communication
	<b>14.00 – 15.45</b>	<b>SESSION 2</b> Effect of beneficial microbe metabolites on the host
	<b>16.15 – 18.30</b>	<b>SESSION 3</b> Shaping and modulating microbiota composition
	<b>18.30 – 20.00</b>	TNO's Lounge Party + poster session
<b>Tuesday 27 March 2012</b>	<b>08.30 – 10.15</b>	<b>SESSION 4</b> Mining the metagenome and microbiome of the gut
	<b>10.45 – 12.40</b>	<b>SESSION 5</b> Can beneficial microbes prevent diseases?
	<b>13.30 – 15.45</b>	<b>SESSION 6</b> Validated <i>in vitro</i> and <i>ex vivo</i> models
	<b>16.15 – 18.00</b>	<b>SESSION 7</b> Towards successful claims for pre- and probiotics
	<b>18.00 – 19.30</b>	Drinks + poster session
	<b>20.30 – 23.00</b>	Conference dinner
<b>Wednesday 28 March 2012</b>	<b>08.30 – 10.30</b>	<b>SESSION 8</b> Recent successful applications of beneficial microbes
	<b>11.00 – 13.00</b>	<b>SESSION 9</b> Future developments: new tools

**FOR INFORMATION ON  
BENEFICIAL MICROBES AND/OR  
GUT HEALTH RESEARCH  
PROGRAMS WITHIN TNO,  
PLEASE CONTACT:**

TNO  
Dr. Koen Venema  
P.O. Box 360  
NL - 3700 AJ Zeist  
the Netherlands  
T +31 88 8661886  
koen.venema@tno.nl  
www.tno.nl

## **SECRETARIAT TNO BENEFICIAL MICROBES CONFERENCE**

Bastiaanse Communication  
P.O. Box 179  
NL - 3720 AD Bilthoven  
the Netherlands  
T +31 30 2294247  
F +31 30 2252910  
bm@bastiaanse-communication.com  
www.bastiaanse-communication.com/bm

# MONDAY 26 MARCH 2012

**10.30** Opening of the 3rd TNO Beneficial Microbes Conference

**10.45** Keynote lecture:  
Setting the scene: How to define a beneficial microbe?  
Prof.dr. Eric Claassen, *VU University Amsterdam/Erasmus MC, the Netherlands*

## SESSION 1: BENEFICIAL MICROBES AND HOST-MICROBE COMMUNICATION

**Chair:** Prof.dr. Jerry Wells, *Wageningen University, the Netherlands*

**11.15** Gate-keeper function of the epithelium  
Prof.dr. Per Brandtzaeg, *University of Oslo, Norway*

**11.45** Inter-kingdom chemical signaling in host-bacterial associations  
Dr. Vanessa Sperandio, *University of Texas Southwestern Medical Center, USA*

**12.15** Probiotic mechanism to enhance influenza vaccination  
Dr. Marjolein Meijerink, *Wageningen University, the Netherlands*

**12.45** Contributed paper

**13.00 – 14.00** Lunch break

## SESSION 2: EFFECT OF BENEFICIAL MICROBE METABOLITES ON THE HOST

**Chair:** Dr. Ger Rijkers, *University Medical Centers of Utrecht and Nijmegen and St. Antonius Hospital Nieuwegein, the Netherlands*

**14.00** Bifidobacteria protect the host from enteropathogenic infection through production of acetate  
Dr. Hiroshi Ohno, *Riken Institute, Japan*

**14.30** Effect of propionate on adipose metabolism  
Dr. Koen Venema, *TNO/TIFN, the Netherlands*

**15.00** Administration of butyrate producing organisms to treat IBD  
Dr. Hana Kozáková, *The Academy of Science, Czech Republic*

**15.30** Contributed paper

**15.45** Networking break

## SESSION 3: SHAPING AND MODULATING MICROBIOTIA COMPOSITION

**Chair:** Dr. Annick Mercenier, *Nestlé Research Centre, Switzerland*

**16.15** Evolution of the microbiota and the influence of diet  
Prof.dr. Michael Blaut, *German Institute of Human Nutrition Potsdam-Rehbruecke, Germany*

**16.45** Breast milk – the source of more life than we imagine  
Dr. Rocio Martin, *Danone Research, the Netherlands*

**17.15** A novel approach to microbial replacement: 30 strain transplant  
Dr. Elaine Petrof, *Queen's University, Canada*

**17.45** Functional foods for digestive health in dogs  
Dr. Julie Spears, *Nestlé Purina Research, USA*

**18.15** Contributed paper

**18.30 – 20.00** TNO's Lounge Party and Poster session

## TUESDAY 27 MARCH 2012

### SESSION 4: MINING THE METAGENOME AND MICROBIOME OF THE GUT

**Chair:** Dr. Jiro Nakayama, Kyushu University, Japan

**08.30** Tools to display metagenomics data  
Dr. Rob Knight, *University of Colorado, USA*

**09.00** Metagenomics screening (MetaHit)  
Dr. S. Dusko Ehrlich, *INRA, France*

**09.30** Asian Microbiome Project: A pilot study on the basal microbiota profile of healthy youngsters  
Dr. Yuan Kun Lee, *National University of Singapore, Singapore*

**10.00** Contributed paper

**10.15** Networking break

### SESSION 5: CAN BENEFICIAL MICROBES PREVENT DISEASES?

**Chair:** Dr. Michael Cabana, University of California, USA

**10.45** Which comes first: disease and microbial modulation or microbial modulation and disease?  
Dr. Jacques Ravel, *University of Maryland, USA (invited)*

**11.10** Beneficial microbes – the link between diet and cancer risk?  
Dr. Wendy Garrett, *Harvard School of Public Health, USA*

**11.35** Intestinal dysbiosis in coeliac disease: is there a role for probiotics?  
Dr. Yolanda Sanz, *Institute of Agrochemistry and Food Technology, Spanish National Research Council (IATA-CSIC), Spain*

**12.00** The airway microbiome in asthma and COPD  
Yvonne J. Huang, MD, *University of California, USA*

**12.25** Contributed paper

**12.40 – 13.30** Lunch break

## TUESDAY 27 MARCH 2012

### SESSION 6: VALIDATED *IN VITRO* AND *EX VIVO* MODELS

**Chair:** Dr. Koen Venema, TNO, the Netherlands

**13.30** Organotypic co-culture models to study the effect of beneficial microbes mechanistically  
Dr. Manfred Schmolz, EDI GmbH, Germany

**14.00** Use of an *in vitro* model to study fermentation by the microbiota  
Dr. Marjorie Koenen, TNO, the Netherlands

**14.30** Assessment of survival of probiotics under various conditions using a validated *in vitro* model  
Dr. Thomas Leser, Chr. Hansen, Denmark

**15.00** A novel polarized *ex vivo* organ culture model to study beneficial microbes  
Dr. Katerina Tsilingiri, European Institute of Oncology, Italy / The Rowett Research Institute, UK

**15.30** Contributed paper

**15.45** Networking break

### SESSION 7: TOWARDS SUCCESSFUL CLAIMS FOR PRE- AND PROBIOTICS

**Chair:** Dr. Gregor Reid, University of Western Ontario, Canada

**16.15** Beneficial microbes: claims and ethics  
Dr. Diane Hoffmann, University of Maryland, USA

**16.45** Critical issues for successful claim applications  
Dr. Alwine Kardinaal, TNO, the Netherlands

**17.15** Why do we need claims on products? Consumers don't!?  
Dr. Ger Rijkers, University Medical Centers of Utrecht and Nijmegen and St. Antonius Hospital Nieuwegein, the Netherlands

**17.45** Contributed paper

**18.00 – 19.30** Drinks during poster presentations

**20.30** Conference dinner

# WEDNESDAY 28 MARCH 2012

## SESSION 8: RECENT SUCCESSFUL APPLICATIONS OF BENEFICIAL MICROBES

**Chair:** Dr. Frédérique Chaucheyras-Durand, Lallemand, France

- 08.30**      **Microbial mitigation: the Achilles' heel of allergy?**  
Prof.dr. Harry Wichers, *Wageningen UR Food & Biobased Research, the Netherlands*
- 08.50**      **Effect of *B. breve* Yakult on childhood constipation – a case study**  
Eline van Bel, *Waterland Hospital, the Netherlands*
- 09.10**      **Probiotics for HIV subjects in the developing world**  
Dr. Gregor Reid, *University of Western Ontario, Canada*
- 09.30**      **Control of bacterial diseases in aquaculture with pre- and probiotics**  
Prof.dr. Peter Bossier, *Ghent University, Belgium*
- 09.50**      **Live yeast probiotics and immunomodulation in pigs**  
Dr. Kenneth Mellits, *University of Nottingham, UK*
- 10.10**      **Contributed paper**
- 10.30**      **Networking break**

## SESSION 9: FUTURE DEVELOPMENTS: NEW TOOLS

**Chair:** Dr. Koen Venema, TNO, the Netherlands

- 11.00**      ***Drosophila* as a model system to study microbiota/gut interaction**  
Dr. Julien Royet, *The Developmental Biology Institute of Marseilles (IBDML), the University of the Mediterranean, France*
- 11.30**      **Microfluidics for creating and controlling spatially structured communities of anaerobic microorganisms**  
Dr. Meghan Vincent, *University of Chicago, USA*
- 12.00**      **Single cell genomic sequencing of uncultured bacteria for the human microbiome project**  
Prof.dr. Roger Lasken, *J. Craig Venter Institute, USA*
- 12.30**      **From stem-cells to self-organizing organoids**  
Prof.dr. Hans Clevers, *Hubrecht Institute and University Medical Center Utrecht, the Netherlands*
- 13.00**      **Closing of the 3rd TNO Beneficial Microbes Conference**  
(including a packed lunch to eat along the way!)

# GENERAL INFORMATION

## WHO SHOULD ATTEND?

The 3rd TNO Beneficial Microbes Conference is a meeting and networking event for the food and feed industry, scientists, regulatory authorities, consulting agencies and advisors in the area of beneficial microbes.

## VENUE

The 3rd TNO Beneficial Microbes Conference will take place at the NH Conference Centre Leeuwenhorst ([www.nh-hotels.com](http://www.nh-hotels.com)) located in Noordwijkerhout in the countryside of the western part of the Netherlands. The conference centre is close to the cities Amsterdam and The Hague, approximately 25 minutes from Amsterdam Airport Schiphol and approximately 30 minutes-walk from the beach. The Conference Centre is surrounded by Holland's famous tulip fields.

## FEE AND DISCOUNT

The registration fee for the 3rd TNO Beneficial Microbes Conference includes the book of abstracts, lunches and coffee/tea, TNO's Lounge Party and the Conference dinner as announced in the timetable. The participant fee does not include hotel accommodation.

- **Full registration fee:**
  - € 730.- (19% VAT inclusive), registered and paid before 1 January 2012.
  - € 845.- (19% VAT inclusive), registered and paid after 1 January 2012.
- **Discounted registration fee:**
  - for participants from universities
  - € 495.- (19% VAT inclusive), registered and paid before 1 January 2012.
  - € 610.- (19% VAT inclusive), registered and paid after 1 January 2012.
- **Special registration fee:**
  - Every paying participant may be accompanied by one or two participant(s) for a special registration fee of € 465.- (19% VAT inclusive) provided that the following conditions are met:
    - the paying participant and the accompanying participant(s) are employed with the same company/organisation at the same location;
    - the paying participant and the

accompanying participant(s) register and pay at the same time.

## PAYMENT

**Please note:** Registrations are only accepted after receipt of the online completed Conference Registration AND payment! Payment should be made by bank transfer, free of all bank charges and commission, to: account name TNO Gezond Leven; account no. 65 49 35 912 at ING Bank, Rotterdam, the Netherlands (BIC/Swift code: INGBNL2A; IBAN: NL 84 INGB 0654935912). Please state the participant's name and 'BMC' on the bank transfer.

Registration will be confirmed by means of the Confirmation of Payment & Invoice, which will automatically be sent to you upon receipt of the registration fee.

## REGISTRATION

Registration for the 3rd TNO Beneficial Microbes Conference can be done online at the conference's website: [www.bastiaanse-communication.com/bm](http://www.bastiaanse-communication.com/bm)

The registration desk will open on Sunday 25 March 2012 at 17.00h.

## HOTEL ACCOMMODATION

Participants are responsible for making their own room reservations online at the conference's website: [www.bastiaanse-communication.com/bm](http://www.bastiaanse-communication.com/bm) The hotel is holding a block of rooms at a reduced rate for participants. Depending on the attendance participants might be accommodated in other hotels than NH Conference Centre Leeuwenhorst.

## EXHIBITION/SPONSORSHIP

Parallel to the conference a commercial exhibition will be organised in which presentations of services and products are given. Participants of the conference have the opportunity to visit the exhibition during the various breaks. Companies and organisations interested in having an exhibition stand or in sponsoring are invited to contact the Conference Secretariat.

## CALL FOR ABSTRACTS OF PAPERS AND POSTERS

The Advisory Board of the 3rd TNO Beneficial Microbes Conference issues a

call for abstracts, inviting the submission of abstracts to two categories:

- oral contributions (contributed papers)
- posters

Interested participants are strongly encouraged to submit abstracts (max. 400 words) for oral contributions and posters! Posters will be displayed throughout the conference.

## IMPORTANT DEADLINES:

### Oral contributions:

deadline for submission: 1 December 2011  
deadline of notification of acceptance: 15 December 2011

### Posters:

deadline for submission: 1 February 2012  
deadline of notification of acceptance: 15 February 2012

## LANGUAGE

English will be the official conference language.

## INTERNET

The latest programme details of the 3rd TNO Beneficial Microbes Conference can be found at [www.bastiaanse-communication.com/bm](http://www.bastiaanse-communication.com/bm)

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.

**TNO.NL**

## SECRETARIAT TNO BENEFICIAL MICROBES CONFERENCE

Bastiaanse Communication  
P.O. Box 179  
NL - 3720 AD Bilthoven  
the Netherlands

T +31 30 2294247  
F +31 30 2252910

[bm@bastiaanse-communication.com](mailto:bm@bastiaanse-communication.com)  
[www.bastiaanse-communication.com/bm](http://www.bastiaanse-communication.com/bm)