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AND SCIENCE OF PRE AND PROBIOTICS

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Let me take this opportunity to welcome you to Probiota 2016. Our programme once again highlights the very latest in scientific and business developments that are sure to ignite discussion amongst our audience of academic and industry figures.

We’ve gathered speakers from the science and business world, who’ll share their unique insights with you to accelerate commercial success to your organisations and better health to your customers. I hope you’ll take the opportunity to share and engage with fellow attendees both in our networking sessions and roundtable discussions. Following on from the success of last year, these sessions have proved highly popular in establishing and cultivating relationships, both established and new.

I warmly extend an invite to you to join our evening welcome reception, where you’ll get a chance to meet fellow attendees and view the Scientific Frontiers poster session that showcases innovative and insightful research from around the world.

Nowhere is thanks more deserved than the Scientific Committee that form an integral part of the Probiota event each year. Their input and experience has ensured the Scientific Frontiers poster session will exceed expectations this year. The high standard of entries is in no small part to the committee’s promotion of this session within their research communities.

Huge thanks go towards the international events team at our parent company, William Reed Business Media, whose dedication to this event has seen it go from strength to strength. We’re proud to host the First Focus workshop on prebiotics for the first time that discusses the concerns commercial demands are having on innovation and current thinking. If this topic resonates with you be sure to register for this workshop.

As much as the event is interactive as it is comprehensive, I hope you’re able to meet with me to raise issues, ask questions and take part in the roundtables, debates and discussions I’ll be hosting. As Science Editor of your industry’s leading news source, no one is more interested than I in the insights provided by our speakers and presenters that contribute to the success of Probiota and NutraIngredients.

Will Chu, Science Editor, NutraIngredients

Contact
Should you require any assistance onsite, please visit the organisers desk or call:

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<thead>
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### Day 1
**Tuesday 2 February**

**Venue** - Science Center NEMO Level 2

#### 13:45  Registration for Workshop attendees

This workshop is free for all our registered participants.

#### 14:00  First Focus Workshop: Prebiotics – a return to true science

**Chairman:** Bob Rastall, Professor of Food Biotechnology, University of Reading

Recent thinking on prebiotics has been coloured by concerns about the commercial demands imposed within a complex regulatory environment. In this free-thinking, free-wheeling workshop we’ll cut free from all regulatory restraints to return to the true science that’s driving innovation and demonstrable benefits of prebiotics.

Leading researchers will consider current thinking, identify gaps in our knowledge and prioritise the scientific work needed to fill them. Each presenter will address these issues in a specific area of prebiotic research.

#### PRESENTATION THEMES

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
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<tr>
<td>14:05</td>
<td>The impact of prebiotics on the microbiome</td>
<td>Dr Gemma Walton, University of Reading</td>
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<td>14:35</td>
<td>The impact of prebiotics on the metabolome</td>
<td>Dr Sandrine Claus, University of Reading</td>
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<td>15:05</td>
<td>Prebiotics and satiety</td>
<td>Dr Massimo Marzorati, ProDigest &amp; University of Ghent</td>
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<td>15:35</td>
<td>Refreshments</td>
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<td>16:00</td>
<td>Prebiotics and mineral absorption</td>
<td>Dr Philip Allsopp, University of Ulster</td>
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<td>16:30</td>
<td>Prebiotics in the first 1000 days</td>
<td>Dr Sandra Einerhand, Einerhand Science &amp; Innovation BV</td>
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<td>17:00</td>
<td>The emergence of symbiotics</td>
<td>Dr Sofia Kolida, Optibiotix</td>
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<tr>
<td>17:30</td>
<td>Closing discussion</td>
<td>All presenters</td>
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Workshop attendees join the Scientific Frontiers poster session and networking reception.
18:00  Probiota registration for non-workshop attendees

Scientific Frontiers poster session - a showcase of leading edge science

Drinks & light refreshments will be served.

A core aim of Probiota is to bring innovative, ground breaking research to your attention. In the run up to Probiota 2016 we invited researchers from around the world to submit abstracts of their most innovative and insightful projects.

The abstracts were judged by Probiota’s Scientific Committee; leading experts in the fields of pre and probiotics. Their selection of the best is presented at this Scientific Frontiers poster session. Your opportunity to view the posters and question the authors. The winners will be announced at the close of day two and will present their research as part of the challenging conference programme on the final day.

Confirmed posters include:

1  Impact of antibiotics course combination on preterm gut microbiome in health and disease
   Bashir Abdulkadir, Northumbria University

2  Development of a novel method for rapid pathogen detection in probiotic products
   Jenna Ries, Lallemand Health Solutions Inc

3  Probiotic supplementation attenuates performance decrements and inflammation following muscle damaging exercise
   Dr Ralf Jäger, Increnovo LLC

4  Use of microbial consortia as a strategy to recover from gut dysbiosis
   Dr Massimo Marzorati, ProDigest

5  Validation of the IntelliCap® system as a tool to study changes in the small intestinal microbiota in a dietary intervention study
   Els van Hoffen, NIZO Food Research BV

6  Pharmacological testing of chemotherapy in PDX models: impact on gut microbiota
   Alessandra De Martino, Biofortis Mérieux NutriSciences
Potential effect of synbiotic diet dessert containing Lactobacillus acidophilus La-5 on individuals with metabolic syndrome: A randomized controlled trial
Douglas Xavier dos Santos, University of São Paulo

Lactobacillus fermentum CECT5716, a human milk probiotic strain, reduces the incidence and symptoms of mastitis in lactating women
Dr Juristo Fonollá Joya, Biosearch Life

Lactobacilli with Bifidobacteria do not reduce an incidence but shorten duration of acute respiratory tract infections in children
Dr Sergei Gerasimov, Lviv National Medical University

Effect of probiotic on innate and adaptive host responses to experimental rhinovirus infection
Dr Markus Lehtinen, DuPont Nutrition & Health

Efficacy of a non-oral synbiotic medical device for the treatment of bacterial vaginosis
Marina Knauf, analyze & realize GmbH

Obesity prevention through probiotics: study of potential probiotic strains tested in mice fed under obesogenic diet
Melanie Le Barz, LMBA, Bordeaux Science Agro

Characterization of the prebiotic potential of three novel plant extracts with implications in age-related diseases including metabolic syndrome and neurodegeneration
Susan Westfall, McGill University

Investigation of effects of turkish black tea on Lactobacillus and Enterobacteriaceae spp. present in gut microbiota by using Real-Time PCR
Selen Gezen, Yeditepe University

Screening of yeast extract for their use in production of probiotic Lactobacillus
Dr Raquel Criado Garcia, Biosearch Life

Functional and molecular characterization of genetically manipulated probiotic B. coagulans and process optimization for its high cell density fermentation
Kavita Pandey, G.N.Khalsa College of Arts, Science and Commerce
Day 2
Wednesday 3 February

09:00 Welcome from the Chair and scene setting
Chair: Annie-Rose Harrison-Dunn, Reporter, NutraIngredients.com

09:10 Shifting markets and emerging demographics – the dynamics of today’s global probiotics market
Ewa Hudson, Global Head of Health and Wellness Research, Euromonitor

Euromonitor’s latest research reveals a global probiotics market in flux as European markets contract, Asian markets take off and supplements – for so long the poor relation to probiotic foods – begin to build market share. Ewa’s presentation provides a global market snapshot and challenges us all to consider the increasingly complex challenge of creating products for an educated and eager global consumer base in regional markets at vastly different stages of evolution.

- Europe in decline – the shocking impact of the ‘probiotic’ regulatory ban on sales is revealed
- Asia takes off – the emergence of China as the fastest growing probiotic yoghurt market dominated by a single player
- The 2nd wave – the emergence of probiotic supplements as a growing market category led by the US
- Commercial opportunities across the lifecycle – addressing early life, maturing millennials and a growing ageing population

09:40 EFSA update on the scientific requirements for the substantiation of health claims related to immunity, pathogens and gastrointestinal function
Dr Yolanda Sanz, Panel on Dietetic Products, Nutrition and Allergies (NDA), European Food Safety Authority (EFSA) & Spanish Council for Scientific Research (IATA-CSIC)

The guidance on the scientific requirements for the substantiation of health claims made on foods related to gut and immune function published in 2011 has been recently updated by the EFSA NDA Panel. Since Regulation (EC) No 1924/2006 entered into force, the NDA Panel has completed the evaluation of over 570 scientific opinions related to health claims in this area, including all Article 13.1 claims (except for those put on hold by the European Commission) and additional applications submitted pursuant to Articles 13.5 and 14. The new guidance document reflects the views of the NDA Panel based on the experience gained to date during the evaluation of new health claim applications and captures additional issues gathered during the consultation process with experts and stakeholders.

The new guidance document is subdivided into two major sections that address: (i) function claims related to the role of a food in maintenance/improvement of a physiological function and (ii) disease risk reduction claims related to the role of a food in reducing a risk factor for disease. Specific claims addressed in the guidance include those on functions of the immune system (based or not on the essentiality of nutrients), functions of the gastrointestinal tract (e.g. discomfort, gas accumulation, normal defecation and digestion and/or absorption of nutrients), defences against pathogens and reduction of a risk factor for infections. Claims evaluated by the Panel with a favourable opinion have been used to provide guidance to applicants on the scientific requirements for their substantiation, whereas those evaluated with an unfavourable opinion have been used to illustrate the shortcomings that prevented their substantiation.

This presentation will give an overview of how the EFSA guidance has been re-structured in the light of the new scientific evidence available to the NDA Panel, including the outcomes of public consultations, in an attempt to provide further assistance in preparing applications for the authorisation of health claims in this area.
**AGENDA**

**11:10**  
**Towards a new design for probiotic foods in Europe**  
**Carine Lambert**, Executive Director, IPA Europe (International Probiotics Association – Europe)

Within the European Union there is a de facto ban on the use of the word ‘probiotic’ when presenting, labelling or advertising probiotic foods. This has led the industry and some member states to reflect on a Europe-wide solution and to consider the future design of the probiotic food industry.

Carine’s presentation will outline possible solutions to end the ban and explain how the probiotic industry is working to restore trust in its products.

- The source of the problem – why the European Commission decided ‘contains probiotics’ constituted a health claim
- A step towards a solution – the legal options now under consideration and lessons from beyond the EU
- The state of play – signs that some member states and the commission want to find a solution and re-launch innovation
- Next steps – the industry’s commitment to prevent misuse of the word ‘probiotic’ and introduce conditions for its use

**10:40 Refreshments**

**10:10**  
**Towards a new design for probiotic foods in Europe**  
**Carine Lambert**, Executive Director, IPA Europe (International Probiotics Association – Europe)

**11:10**  
**As pure as mothers’ milk? Bacteria in human milk and its impact on infant and maternal health**  
**Dr Esther Jiménez Quintana**, Assistant Lecturer in the Department of Nutrition, Food Science and Technology at the Complutense University of Madrid and Researcher at ProbiSearch

Recent studies have shown that human milk – long thought to be sterile – contains a complex bacterial ecosystem that directly influences the health of the infant and the mammary health of the mother. On the positive side, good bacteria present in human milk can serve as a probiotic to the neonate, exerting anti-infectious, anti-inflammatory, immunomodulatory and metabolic effects. Less positively, mammary bacterial dysbiosis may lead to mastitis, which affects a third of lactating mothers and is the primary cause of undesired weaning.

This presentation will review current theories about how bacteria reach the mammary gland. Evidence emerging that bacteria from the maternal gut could reach the mammary during the late stages of pregnancy and lactation suggests that modulating the mother’s gut microbiota during pregnancy could have a positive impact on infant health and successful breast feeding.

Esther’s presentation will discuss current scientific understanding and its potential health impacts.

- The link between the material gut microbiota and the bacterial ecosystem in mothers’ milk
- Options to modulate and improve maternal gut microbiota during pregnancy and lactation
- Likely probiotic strains that may have a positive impact on the bacterial ecosystem of mother’s milk
- Potential probiotic strains for the treatment and prevention of mastitis.

**Esther Jiménez Quintana**

Esther specialises in the maternal microbiota during and after pregnancy and its influence on the bacterial colonisation of the new-born’s gut. Her current areas of research are perinatal and human milk microbiota, the characterisation of probiotic bacteria and their use in bacterial dysbiosis. Alongside her role at ProbiSearch, she is an Assistant Lecturer in the Department of Nutrition, Food Science and Technology at the Complutense University of Madrid. She has a BSc and PhD in Science and Food Technology, also from the Complutense University of Madrid.

**Probiota 2016 Amsterdam**

**Day 2 - Wednesday 3 February**
11:40 Beyond mother’s milk – restoring the infant microbiome

Professor David Mills, Co-founder, Evolve BioSystems Inc and Professor in the Departments of Food Science & Technology at the University of California at Davis

Recent developments in our understanding of the infant microbiome reveal that there are two consumers of mother’s milk – the infant itself and a unique species of bacteria that dominates the gut of vaginally delivered and breast fed babies. However, medical practices such as Caesarean section, and the adoption of artificial milk formulas has upset the delicate balance on which the infant microbiome depends.

David’s presentation will draw upon research from the University of California to outline the life-long beneficial impact of a healthy infant microbiome and discuss the commercial opportunity for products that can restore it.

- The infant microbiome – what it is and how it impacts long early development and long term health
- Early lessons – how artificial milk formulas change the infant microbiome, the consequences of those changes
- A chance to restore – how new products are being developed to return the dysbiotic infant microbiome to its natural state

12:10 Speed networking

Extend your horizons with a series of four minute meetings with your fellow delegates. Introduce yourself to a new contact every time the bell rings and find out if you’ve got mutual interests that would make a subsequent, more in depth meeting worthwhile.

OR...

Take a second opportunity to view the Scientific Frontiers posters

13:00 Lunch with roundtable discussions

Discuss the issues that matter most to you.

Each roundtable will be hosted by an industry expert who will lead discussions on a series of topics listed on pages 14 & 15. Join the table that suits you best (subject to availability).

14:00 Coffee and deserts served in the networking area

14:30 Sure and certain ground. The need for clinical evidence in the probiotic market

Professor Ingvar Bjarnason, MD, MSc, FRCPath, FRCP(Glasg), DSc, BUPA Cromwell Hospital and King’s College Hospital, introduced by Barry Smith, Founder and Chairman, Symprove

Until recently most doctors agreed that probiotics would never be used as a medical intervention because of a lack of clinical evidence to support the effectiveness of probiotics in human health. Professor Bjarnason shared their view. However, a 10-year study programme at King’s College Hospital has revealed that Symprove, with its unique delivery system, can deliver positive outcomes in the treatment of IBS, IBD and diverticular disease. It may also have a role in maintaining remission in ulcerative colitis.

This presentation will review the implications of this study and compare Symprove’s results with those of other probiotics that have undergone similar double blind placebo controlled clinical trials.
Day 2 - Wednesday 3 February

15:00 Improving health and wealth in East Africa: How a locally produced yoghurt drink is overcoming the challenge of bringing probiotics to rural Africa
Professor Remco Kort, Principal Scientist, TNO and Founder, Yoba for Life Foundation

The not-for-profit Yoba for Life Foundation is spearheading the introduction of probiotics to East Africa with a locally produced probiotic yoghurt drink that’s tackling major health problems and providing a boost for local economies. Today it’s helping to tackle rotavirus associated diarrhea – a major cause of infant death in sub-Saharan Africa – among Uganda’s rural population. Weekly sales currently stand at over 8,000 litres. Yoba has benefitted over 25,000 people – both consumers and producers – and has the potential to help hundreds of thousands more in the near future.

This is a presentation details the creation of Yoba’s probiotic starter culture and how it is overcoming the production challenges associated with bringing probiotics to the African continent.

- Isolate screening, genome sequencing, comparative genome and strain stability analyses.
- Development of a dried starter culture that allows propagation of probiotic L. rhamnosus yoba 2012 in milk.
- Overcoming stability issues associated with the propagation of an intestinal isolate in a dairy matrix.
- Creating a training programme and social business model that facilitates production and sales of Yoba by Africans for Africans.

Remco is principal scientist at TNO (the Dutch Organisation for Applied Scientific Research), holds the TNO Chair in Microbial Genomics at the VU University Amsterdam, is Professor at Micropia (world’s first microbe museum), and is one of the founders of the Yoba for Life foundation. He has a degree in Molecular Sciences from Wageningen University and a PhD in molecular microbiology from the University of Amsterdam. He has worked extensively in the food industry and has been active over the last five years in East Africa with Yoba for Life.

15:30 Refreshments

16:00 Beyond antibiotics: Pathogenic biofilm in recurrent vaginitis and cystitis
Professor Alessandra Graziottin, Chairman, Alessandra Graziottin Foundation and Director, Centre of Gynaecology and Medical Sexology, San Raffaele Resnati

Pathogenic biofilms are at the new frontier of research to overcome the growing challenge of antibiotic resistance in urology and gynaecology. Recurrent vaginitis and cystitis are increasingly common and the difficulty of treatment is a frustration for both patients and physicians. This presentation will examine latest research on pathogenic biofilm in such cases and consider options for new non-antibiotic treatments.

- Possible links – indiscriminate use of anti-biotics and the formation of pathogenic biofilms in the vagina and urethrum.
- The causes of recurrence – the role of persister cells in systemic invasion and lack of antibiotic impact.
- Intercellular terrorism – how biofilms attack, re-attack to cause progressive tissue damage and inflammation.
- The fight back – options and effectiveness of a range of non-antibiotic therapeutic strategies.

Alessandra Graziottin is a world expert in female health and sexology. She combines roles as an academic, researcher, teacher and writer to promote women’s health to both specialist and generalist audiences. In addition to her work with the Alessandra Graziottin Foundation and at San Raffaele, she holds consultant roles at the universities of Florence and Pisa. She has published extensively on the subject of women’s health and, since 1984, has been a columnist for national newspapers and magazines across Italy.
16:30  The role of the gut microbiota in age-related health decline

Dr Ian B Jeffery, Principal Investigator in the Department of Microbiology and the APC Microbiome Institute at University College Cork

As life expectancy increases more and more people face challenges to maintain their health and independent living as they age. The association between unhealthy diet and all-cause morbidity has long been established, but the importance of the gut microbiota is only now being recognised. ELDERMET, the largest study to date of the gut microbiome in an elderly population, shows that intestinal microbiota composition is indeed associated with long-term diet and the health status of the elderly individuals.

This presentation defines age-related changes in the gut microbial system and discusses the role of microbiota composition and diversity in age-related health loss. It will discuss current scientific understanding and its potential health impacts.

- How the gut microbiota changes as we age
- Observed links between the elderly gut microbiota and the health status of the individual
- Lifestyle factors that may have a positive or negative impact on the bacterial ecosystem
- Options to modulate and protect the gut microbiota during ageing

Ian became a Senior Research Scientist in 2010, bringing his bioinformatics expertise to the ELDERMET project based in the Alimentary Pharmabiotic Centre, at University College Cork. His main research focus was the study of changes in the microbiota that occur during senescence and age-related frailty. He was later awarded a position as Research Fellow and led the Bioinformatics group that anchors the ELDERMET project and advised on or contributed to several international and internal studies. He is now a Principal Investigator funded by a prestigious Starting Investigator Research Grant studying the changes in gut microbiota associated with Rheumatoid Arthritis.

17:00  An end to controversy?  The fibre-microbiota-butyrate axis in tumour suppression

Scott Bultman, Associate Professor, Department of Genetics and Lineberger Comprehensive Cancer Centre, University of North Carolina

Conflicting results from human epidemiological studies have made it difficult to be sure whether dietary fibre offers genuine protection against colorectal cancer. The heterogeneity of the study participants, the differences in their gut microbiota and the use of different fibre sources have all made results the subject of controversy. In this presentation Scott will review the findings of new research that reveals the true potential – and constraints – of fibre for tumour suppression.

It reveals that fibre can supress tumours in a butyrate dependent manner that is mediated through the microbiota. Scott will discuss the study’s findings and the impact that the now evident fibre-microbiota-butyrate axis could have on cancer treatment and prevention.

- How fibre, the microbiota and butyrate interact to reduce colorectal tumours in mice
- Implications for human health and cancer treatments
- The link between diet, microbiota and an abundant metabolite and its influence on cancer pre-disposition

Scott has held a variety of research roles with the University of North Carolina since 2000, joining the team there after completing a postdoctoral fellowship at Case Western Reserve University in Ohio. His current area of study is the effect of gut microbiota on cancer susceptibility and progression, with a particular interest in metabolic and epigenetic mechanisms.

17:30  Scientific Frontiers winners announcement

The Chairman of Probiota’s Scientific Committee, Niall Hyland, announces the winners of the year’s poster session

19:00  Probiota 2016 Dinner

The social highlight of Probiota and a chance to connect with your industry peers in an informal and relaxed setting.

Join us for a memorable evening in a culinary museum in the centre of Amsterdam! The restaurant d’Vijff Vlieghen (The Five Flies) occupies five 17th Century houses and has a unique and beautiful atmosphere. Where else can you have dinner whilst sitting under four original Rembrandt etchings, surrounded by antique Delft blue and rare 17th century glassware?

And we’ll travel there in true Amsterdam style: by canal boat directly from the conference hotel (and back of course).

Please meet in the lobby of Double Tree by Hilton Hotel at 19:00
Detection of strain specific probiotics and evaluation of the gut-resistome in clinical faecal samples of healthy adults receiving antibiotic and multi-strain probiotic treatment

Dr Pierre Burguière, Preclinical Research Program Manager at Lallemand Health Solutions Inc.

A randomized, double-blind, placebo-controlled clinical trial evaluated the effect of Lacidofill® STRONG (Lactobacillus rhamnosus R0011 and Lactobacillus helveticus R0052) in healthy adults with Antibiotic-Associated Diarrhoea (AAD) following administration of amoxicillin-clavulanic acid. This study revealed that the duration of diarrhoea-like defecation events resulting from antibiotic use was significantly reduced with supplementation with probiotics, suggesting a clinically positive utility for Lacidofill® STRONG. Moreover, in order to substantiate positive clinical outcomes the persistence of strain specific probiotics must be demonstrated in clinical faecal samples. Results showed that, through the use of strain-specific primers, probiotic strains can be detected and quantified in complex faecal matrices. Thus, this method can be used as a tool to monitor participant compliance in clinical studies.

Lastly, with the availability of clinical faecal samples, an in-house custom-designed antibiotic resistance (ABR) microarray was used to evaluate the gut-resistome of participants. The use of ABR microarray showed a significant increase in the number of ABR genes detected during antibiotic treatment. Conversely, the resistome reverted to its earlier baseline levels after antibiotic treatment. Overall, these results illustrated a rational approach of utilizing clinical analyses in conjunction with complementary molecular biology methods of qPCR and microarray, to maximize evidences and understand further the outcomes of clinical studies.

Live and heat-treated probiotics differently modulate mRNA stabilisation: a role for micro-RNAs

Dr Carine Blanchard, Senior Research Scientist, Nutrition and Health Research, Nestlé Research Center

Micro-organisms are naturally present in many raw foods, such as milk-derived products, and optimal heat treatments are used to prevent them from replicating. Yet biologically active bacterial components may still persist, be degraded, or be produced, thus modifying the impact of micro-organisms on the host immunity. We set out to understand whether live and heat treated probiotics are able to regulate host micro-RNAs (miR) and host gene RNA stability, as a new mechanism to modulate the host immune responses.

This presentation will show how epigenetic mechanisms may play a role in host microbe interaction and will reveal new findings identifying stabilisation of mRNA and microRNA dysregulation as new mechanisms for probiotic-induced host gene regulation. We will discuss the current scientific understanding of these mechanisms and consider...

- The stabilisation of the host immune-modulatory cytokine IL10 mRNA by probiotics
- The differential modulation of host microRNA by live and heat treated probiotics
- The regulation of IL-10 by these dysregulated microRNAs
10:05  1H-NMR metabolomic analysis of the effects of probiotic administration on human metabolic phenotype
Dr Marco Pane, Product Development Specialist, Probiotical Healthcare

Establishing and preserving beneficial interactions between the host and its associated intestinal microbiota are key requirements for promoting health. Not surprisingly then, probiotics are increasingly being used to manipulate the composition of the gut microbiota and improving a healthy microbial community.

But there’s more. The human metabolic phenotype could give us a very accurate and systemic representation of the health state, not only of the human organism, but, more correctly, of the ‘super organism’. The urine metabotype, besides being a snapshot of the host genotype, age, life-style and interaction with environmental factors, is also influenced by the gut microbiota.

In this light the individual metabolic phenotype can be considered as a new dynamic mirror of the ‘superorganism’; how it functions and how it adapts. Their resilience could be defined as the system’s ability to recover from challenging conditions and return to health.

Marco’s presentation will reveal findings of an ongoing study to extend our understanding of the human metabolome’s resilience and how it responds to gut microflora modulation during probiotic treatment. He will show how it has been possible to monitor the molecular outcomes of probiotic administration on the human metabolism through 1H-NMR-based metabolomic approach. The study – the first to look at the effects of probiotic administration through 1H-NMR spectroscopy – shows that probiotics can influence people’s urine metabolic profiles without altering their individual metabotypes.

Marco Pane
Marco holds a Master’s degree in microbiology and began his career as a researcher at Biolab laboratory in Novara, Italy, where he focused on research for the dietary supplement industry. At Probiotical he works with external innovation partners to drive new probiotic product development, supports worldwide sales and collaborates on research projects. He is a regular commentator on the technology, efficacy and consumer benefits of probiotic supplementation and healthy gut microbiota.

10:35 Refreshments

11:00 Scientific Frontiers winners presentations

11:45  GoodBelly – Good business: How NextFoods brought probiotics to the drinks aisle
Todd Beckman, Founder & COO, NextFoods

Launched in 2008, GoodBelly was America’s first (and still only) probiotic juice. Today it’s sold across 6,000 natural and mainstream retail outlets including WholeFoods, Kroger and Safeway. Research shows that less than 3% of beverage start-ups ever achieve $10 million in sales. GoodBelly broke through that barrier some time ago and continues to grow strongly, well ahead of other contenders in the functional juice category. In this presentation NextFood’s co-founder and its CEO will describe how GoodBelly has bucked that trend and share insights from their experience.

- How to get first mover advantage and, failing that, how to follow fast
- Creating a brand that kick-starts a habit – proving efficacy by challenging the consumer
- From ‘natural to mainstream’ – different consumers, different retailers and why you really need to listen
- Speak clearly and mean it – translating science into consumer benefit and making the message authentic

Todd Beckman
Todd is a spirited leader in the natural foods industry with a track record of success with White Wave, one of the world’s biggest natural food businesses. Having co-founded NextFoods with Steve Demos, he is responsible for product innovation, business development and supply chain efficiency.
12:15  Sexy probiotics? Welcome to the next generation of fermented foods
Amanda Hamilton, Nutrition Director, Rhythm Health

At Probiota 2015 a provocative question was asked. “Why don’t we make probiotic foods sexy?” Rhythm Health claims to have done just that. And not just sexy, but free of sugar and cholesterol too. Founded in 2008, Rhythm Foods combines coconut milk and kefir cultures – used to aid digestion for thousands of years – to create fermented probiotic drinks. So far so good, but its claim to be leading a revolution in fermented foods lies in the unique cold-press method it has developed to maintain the live cultures in its drinks without added sugar or other preservatives.

Amanda’s presentation will describe how Rhythm Health is using innovative ingredients, process and marketing approaches to create a UK-wide market for fermented foods that promise increased potency and health benefits.

- High pressure processing: maximising raw nutrition by improving the potency of microorganisms
- Market enlightenment: Innovative ingredients, packaging and communication to make fermented foods ‘sexy’ for today’s consumers
- Maximum benefit – minimum interference: holistic, consumer friendly approaches to delivering pre- and probiotics

Amanda Hamilton

Amanda is Nutrition Director for Rhythm Foods, founded in 2008, and today leads its nutrition strategy. She has numerous business interests in the fields of nutrition and health, including a global health spa, and is a respected author and broadcaster. Her latest book ‘Eat, Fast, Slim’, made the Amazon bestseller release within days of its release. She is a Senior Associate of the UK Royal Society of Medicine and a member of The Nutrition Society, the British Association of Nutritional Therapists and the Guild of Health Writers. She holds a degree in communications, a professional nutrition qualification and post-graduate in Obesity Science.

12:45  Panel debate: Opportunities for life?

We’ll consider whether a clearer understanding of the impact of probiotics at each stage of the human lifecycle will open up opportunities to create tailored even personalised products to meet life stage needs. We’ll ask who will lead the way – the health profession, the food industry or pharma, and how far regulation will impede their progress.

Chair: Dr Niall Hyland, Faculty, APC Microbiome Institute and Lecturer, Department of Pharmacology & Therapeutics, University College Cork

Dr Nicolas Madit, Business Development Manager, Capsugel
Dr Jessica Younes, Medical Science Liaison, Women’s Health Portfolio, Winclove Probiotics
Dr Markus Lehtinen, R&D Manager, DuPont Nutrition & Health

Programme is subject to change, for the most up-to-date version visit www.probiotaevent.com
**TABLE 1**
**Getting it right for Europe: Finding the ideal regulatory framework for probiotic health claims**
Host: **Celia Martin**, Regulatory Affairs Director, Lallemand Health Solutions

In a world without a harmonised regulatory framework for probiotics several jurisdictions appear to have arrived at workable solutions for health claims to be approved. Not so the EU, where lack of regulatory status creates disadvantage for providers. This roundtable will examine frameworks that are working well for the rest of the world and ask what they can teach us about how to align scientific principles, regulation, industry know-how and the needs of Europe’s consumers?

**TABLE 2**
**Looking at the body: New visibility of probiotic impact**
Host: **Dr Marco Pane**, Product Development Specialist, Probiotical

The impact of probiotics on the human metabolic phenotype is still unclear. However, new technologies can give us ‘fingerprint representation’ of the human ‘super organism’. In fact, the urine metabotype provides a snapshot of the host genotype and how it’s influenced by the gut microbiota. Given this new visibility, what can we discover about the way probiotics modulate the microbiota and its host metabolism? What health markers can we look for and which will indicate disease?

**TABLE 3**
**The final dose: Creating a chain of science that satisfies the regulator and the business**
Host: **Tony Blanch**, Director of Quality and Corporate Services, Nutraceutix

The importance of using commerce-ready dose forms during probiotic research, to maintain the “chain of science” connecting research and its outcomes to commercially viable health claims, is key to avoiding regulatory roadblocks. Join us to discuss how final dose forms can support probiotic research outcomes through heightened product stability, optimal intestinal delivery and dose consistency. We’ll consider ways to avoid issues that regulatory bodies and corporate review boards will seize upon when considering product commercialization.

**TABLE 4**
**More than enough? The potential for pre- and probiotics in satiety management**
Host: **Massimo Marzorati**, Business Development Director, ProDigest

Why do some foods fill us up faster than others? Food experts understand that food’s flavour, texture and visual appeal contribute to satiety, but what role can pre and probiotics play in creating satiety enhancing foods that can help with energy intake and weight control? We’ll consider what the findings of the recent SATIN research FP7 project have to tell us.

**TABLE 5**
**How to design successful microbiome studies**
Host: **Nikolaj Sørensen**, Lead Scientist, Clinical-Microbiomics

Microbiome studies are important for testing or improving pre and probiotic products and understanding their effects on human health and physiology. These studies must be designed right from the outset to address the hypothesis in question, and data analysed accordingly. But, with a wealth of options available, choosing the best strategies and tools can be challenging. Join us to discuss how you can get maximum insight from your microbiome studies by focusing on proper study design and data analysis.

**TABLE 6**
**Beyond the gut: Can probiotics treat ear and throat infections?**
Host: **Dr Coline Gerritsen**, Scientist, Winclote Probiotics

Microorganisms in the upper respiratory tract are the first line of defense against infection. When the healthy balance of bacteria is thrown by stress, exposure to pathogens or antibiotic treatment, it can quickly lead to ear and throat infections. Join Coline to discuss whether using probiotics to modulate bacteria in the upper respiratory tract can improve ear and throat health and how they can be effectively implemented in health care systems.
TABLE 7
The first 1,000 days: How probiotics can have a positive impact that starts early and lasts
Host: Dr Markus Lehtinen, R&D Manager, DuPont Nutrition & Health
Nutrition in the 1,000 days between the start of a pregnancy and the day a child turns two have a disproportionate impact on the future health of the individual. Markus will discuss options to use probiotic supplements for mother and child in this crucial time in ways that ensure the mother’s health is protected, while her child gets the best possible start.

TABLE 8
In the raw: Probiotics liberated by high pressure processing
Host: Brian Owens, Founder, Rhythm Health
High pressure processing allows us to capture the raw value of probiotic ingredients at high density. What does this offer to consumers and what are the implications for product development? We’ll discuss the future marketing of beneficial micro-organisms and the potential consumer appetite for raw nutrition.

TABLE 9
Power to the people: Educating consumers about their microbiome and how to influence it
Hosts: Toni Harman and Alex Wakeford, award-winning filmmakers behind the documentary “Microbirth” and authors of forthcoming book ‘The Microbiome Effect’
Fuelled by a passion for the microbiome, Toni and Alex are developing an exciting cross-media project to bring a full understanding of the latest science on prebiotics, probiotics and good gut health to consumers. Join them for a roundtable discussion on the most effective ways to bring science, the probiotics industry and consumers together for the benefit of all.

TABLE 10
Healthy old age: Findings of the first substantive study into the aging microbiota
Host: Dr Ian Jeffery, Principal Investigator in the Department of Microbiology and the APC Microbiome Institute at University College Cork
Join Ian for a deep dive into the findings of ELDERMET, the biggest study so far to examine the gut microbiome in an ageing population. We’ll consider the impacts of lifelong eating habits on our health prospects as we age and ask what we can do to protect and enhance the performance of the microbiota so we can stay healthy for longer.

TABLE 11
Chronic diseases: The potential for probiotic treatments
Ewa Hudson, Global Head of Health and Wellness Research, Euromonitor International
There’s growing recognition that probiotics can be go beyond ‘general health supplement’ to become a specific source of treatment for chronic diseases including diabetes and cardiovascular disease. Join Ewa to discuss the latest scientific discoveries and how the industry is responding with innovative product development.

TABLE 12
How to realise the untapped potential of the microbiome in the fight against cancer
Host: Dr Scott Bultman, Associate Professor, Department of Genetics and Lineberger Comprehensive Cancer Centre, University of North Carolina
Join Scott to discuss probiotic and prebiotic strategies for the prevention of colorectal and other cancers. In addition to conventional approaches, we may discuss the prospect of using CRISPR and gene drive to engineer the gut microbiome for enhanced, long-term chemopreventive effects. Technical feasibility, clinical advantages, and safety concerns would be considered. Because microbiota will become increasingly important for cancer treatment, we will discuss “therapeutic feeding” of bacteria as an adjuvant for anti-cancer immunotherapy and bacterial gene products as targets for drug discovery.

TABLE 14
Not just for health geeks: Probiotics in the consumer mainstream
Host: Todd Beckman, Co-founder and COO, NextFoods
GoodBelly is one of the first probiotic businesses to get out of the specialist foods category and into the consumer mainstream. With sales growing fast and classic retailers scrambling to stock their product, GoodBelly’s co-founder takes time out to share the secrets of success. How did GoodBelly do it and what can you learn from its success?

TABLE 15
Ahead of the pack: Creating stand out products in a world of caution
Host: Dr Nicolas Madit, Business Development Manager, Capsugel
With regulatory hurdles restricting the use of health claims on pack, creating probiotic supplements that stand out from the crowd is challenging. Putting product performance at the heart of communications can help brands to win more consumers, and even extend into new markets and applications, but how can this be done in the current environment set by the European Food Standards Agency? Join Nicolas to discuss ways out of the conundrum created by the regulator’s caution and the market’s desire for honest information.

TABLE 16
The importance of data to improve the credibility of the probiotic industry
Host: Barry Smith, Founder and Chairman, Symprove
Currently the probiotic industry is supposedly evidence-led, but not to the standard required by the medical fraternity. This diminishes the credibility of probiotics for professional healthcare providers. Join Barry to discuss the importance of peer-reviewed published data to increase the potential for the use of probiotic technology within the medical sector, and how to engage healthcare professionals with your research.
Lallemand Health Solutions

Lallemand Health Solutions, a new entity that amalgamates the expertise of Institut Rosell-Lallemand, and Harmonium International Inc, possesses close to a century of probiotic expertise in the selection, development, production and marketing of probiotic formulations that support human health and well-being.

We ensure our customers receive the highest quality standards for a large portfolio of probiotic formulas. From lab to shelf, Lallemand Health Solutions controls the entire manufacturing process within current GMP facilities and an ISO 9001 approved environment. We offer a full line of ready-to-market probiotic formulas as well as support to develop customised formulations.

www.lallemand-health-solutions.com

Probiotical

Probiotical was founded in 1985 and originates from ALCE Microbiologic Laboratory, Italian leader in the production of lactic acid bacteria for the dairy industry for more than 60 years. It's the first plant worldwide designed exclusively for the research, development and production of probiotic microorganisms. With core businesses in Europe and developing businesses in Australia, North America, and Asia, Probiotical is the partner of choice for companies seeking high-quality, custom tailored probiotic and/or synbiotic products: safe, effective and stable. The company offers a broad portfolio of allergen free, freeze dried or microencapsulated, probiotic strains at different concentrations supported by characterisation and clinical studies. In addition to the production and commercialisation of bulk ingredients, special attention is focused on the development and realisation of probiotic and synbiotic finished products with guaranteed efficacy for the duration of their shelflife.

www.probiotical.com

Capsugel

Capsugel is a global leader in delivering high-quality, innovative dosage forms and solutions to its customers in the health care industry. The company’s Hard Capsule business unit offers customers the broadest portfolio of gelatin, vegetarian, and other specialized capsule technologies. Capsugel’s Dosage Form Solutions business unit utilizes an array of proprietary technologies and specialized manufacturing capabilities to solve customers’ most pressing product development challenges, including bioavailability enhancement, modified release, abuse deterrence, biotherapeutic processing, and inhalation formulation. The company’s fast-to-clinic program streamlines product development from pre-formulation through clinical and commercial supply for finished dosage forms. Headquartered in Morristown, N.J., Capsugel serves more than 4,000 customers in more than 100 countries.

www.capsugel.com
DuPont

Through its Nutrition & Health business, DuPont addresses the world’s challenges in food by offering a wide range of sustainable, bio-based ingredients and advanced microbial diagnostic solutions to provide safer, healthier and more nutritious food. Through close collaboration with customers, DuPont combines knowledge and experience with a passion for innovation to deliver unparalleled customer value to the marketplace.

The global network of food scientists and technologists in DuPont brings world-class expertise to soy proteins, emulsifiers, enzymes, hydrocolloids, cultures, antioxidants, antimicrobials, microbial detection and an array of health-promoting ingredients to what we call ‘the Global Collaboratory™ — a place where solutions that make a real difference are discovered and brought to life.

Our probiotic cultures are scientifically proven to help keep the digestive system running smoothly and to support the body’s immune system. They give you the opportunity to add documented health benefits to your dairy products, beverages, confectionery and frozen desserts.

www.food.dupont.com

Clinical-Microbiomics

Clinical-Microbiomics is a dedicated contract research organization offering end-to-end services within the growing field of the human microbiome to academic and industrial clients, through:

- 16S rDNA analysis of microbiome compositions
- Real-time qPCR
- Metagenomics
- Transcriptomics
- Metabolomics

We analyze samples to provide our clients with actionable microbiome insights on how the microbiome changes during interventions with e.g. probiotics, prebiotics or other nutraceuticals.

We can take care of all steps of the microbiome analysis, including: clinical study advice, DNA extraction, library preparation, sequencing, bioinformatics, customized statistical analysis of data, and biological interpretation of the results.

www.clinical-microbiomics.com

Winclove Probiotics

Winclove Probiotics is a Dutch company specialized in research, development and production of effective and evidence-based multispecies probiotic food supplements. We are an expert in the field of probiotics for over 20 years now.

Winclove’s expertise is to develop highly effective probiotic formulations for specific health indications that reach from the traditional gut area to innovative areas such as women’s health and upper respiratory tract infections. Wherever an imbalance in the microbiota causes problems, we seek for an optimal way to restore the microbial balance with probiotics.

In this way we have developed to date 11 indication specific formulations, under our brand name Ecologic®. These products are sold by our business partners under private label, with co-brand Ecologic®, all over the world.

To guarantee the efficacy of our probiotics we optimize our formulations with the PROBIOACT® Technology. These ingredients improve the bacterial viability, resulting in a value-based product for our clients and the most effective solution for the consumer.

www.winclove.com
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**Bifodan**

Bifodan A/S develops and manufactures probiotic turnkey solutions for B2B customers worldwide. Based just North of Copenhagen, Denmark, Bifodan delivers clinically documented, high quality probiotic products, manufactured at our GMP approved production facility. Bifodan has a long history in probiotic bacteria, as the company was founded by the first Danish dairy to isolate the lactobacillus acidophilus bacteria in 1938.

Bifodan has been dedicated to research and development of probiotic nutritional supplements for three decades. Our extensive competencies in understanding, formulating and handling probiotic bacteria, allow Bifodan to offer innovative solutions addressing common health issues.

[www.bifodan.com](http://www.bifodan.com)

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**Nutraceutix**

For over two decades, Nutraceutix has specialised in producing high viability probiotics in bulk powder, advanced tablets and capsules from the industry's largest offering of natural probiotic organisms.

Nutraceutix is a NSF Certified GMP contract manufacturer and private labeller of nutritional supplements incorporating advanced delivery technologies, like the multi-patented BIO-tract® and Viablend® delivery systems that significantly improve the effective delivery of live probiotics and a wide variety of other suitable ingredients to the intestinal tract. Dietary supplements formulated and manufactured to take advantage of these patented delivery systems are truly “Well Delivered.”

Quality conscious brands are proud to offer their customers superior products custom formulated and expertly manufactured for them by Nutraceutix. These Nutraceutix-made products stand out as being “Better for the Researcher. Better for the Brand. Better for the Consumer.”

[www.nutraceutix.com](http://www.nutraceutix.com)

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**ProDigest**

ProDigest is a dynamic company that provides customised solutions related to gastrointestinal research to operators in food/feed, functional food/feed and pharmaceutical markets.

Our expertise in the field of gastrointestinal transit, bioavailability and metabolism of food/feed compounds and pharmaceuticals, in relation to their fate and function in the body, makes ProDigest an essential partner for innovative product development. ProDigest is the company that brings to the market the SHIME® (Simulator of the human intestinal microbial ecosystem) and the related technology platform (M-SHIME, low-grade inflammation assay, HMI™ module).

[www.prodigest.eu](http://www.prodigest.eu)

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**TNO**

TNO is an independent research organisation whose expertise and research make an important contribution to the competitiveness of companies and organisations, to the economy and to the quality of society as a whole. TNO’s unique position is attributable to its versatility and capacity to integrate this knowledge. Thanks to our extensive knowledge and expertise, we are strong in the area of translating fundamental scientific insights into customised applications.

[www.tno.nl](http://www.tno.nl)

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Using dynamic audio, visual and text formats, NutraIngredients.com journalists offer the expertise required to unpick, process and effectively communicate the scientific, regulatory and industry issues that matter to your organisation. Whether it is a dispatch from the frontier of probiotic science, the latest health claim developments or in-depth new ingredient appraisal, NutraIngredients.com brings you the news first.

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