Global Engage

GLOBAL ENGAGE'S 4TH

MICROBIOME R&D AND BUSINESS COLLABORATION FORUM: EUROPE

COLLABORATIONS IN MICROBIOTA RESEARCH, LIVE BACTERIAL THERAPEUTICS, HUMAN HEALTH & DISEASE

PROBIOTICS CONGRESS

RESEARCH, DEVELOPMENT & APPLICATION OF PROBIOTICS AND PREBIOTICS IN HUMAN AND ANIMAL HEALTH

AMSTERDAM

3-4 April 2017

WARM WELCOME

Global Engage

Global Engage is pleased to announce, as part of their worldwide microbiome series, the **4th European Microbiome R&D and Business Collaboration Forum and Probiotics Congress** which will be held on April 3-4, 2017 at the historic Beurs van Berlage Conference Centre in central Amsterdam, The Netherlands.

The congress which attracted over 200 attendees in 2016 is the sister meeting to both the US and Asian Congresses held in San Diego and Hong Kong which bring together an even-split of industry and academic delegates to discuss the latest microbiome science, the development of partnerships and commercial collaborations in this area and the growth of product pipelines.

An increasing awareness of the importance of the role different bacterial ecosystems play with regards to human and animal health has led to a surge in research, publications and companies coming out of the microbiome and probiotic space. As changes in our lifestyle and the growth of multi-drug resistant bacterial strains have also increased the need for better solutions and management of chronic and life-threatening illnesses, microbiome and probiotic research is one of the most scientifically important and potentially lucrative avenues to be exploring. There is mounting evidence that selected probiotic strains can confer health benefits to us especially in digestive diseases and paediatric health and the first microbiome-based drugs will be headed to market in the next few years.

Attracting over 300 attendees, the 11th meeting in the global series will build upon the success of last year's meeting to explore the interface between our evolving cultures, technologies and our microbiome through a series of interactive presentations with leading academics and industry experts, panel discussions and roundtable discussions and an exhibition area allowing solution providers to showcase their products and services. It will also this year include a series of shorter company development slots for nascent businesses in this space to seek the partnerships they require to take their company forward. The Global Engage series is rapidly gaining a fantastic reputation as the number one microbiome networking event for fostering partnerships across academia, pharma and biotech. If looking to either learn more from the top scientists in the microbiome and probiotic space; showcase exciting developments in your research; or seek partnerships and funding within the industry; it is a congress not to be missed.

EXPERT SPEAKERS Include:

ELENA VERDU
Associate Professor, Division of Gastroenterology, McMaster University, Canada

BRUCE ROBERTS
Chief Scientific Officer, Vedanta Biosciences, USA

ADAM HACKER
Vice President & Head of Vaccines and Microbiome, Global Regulatory Affairs, Janssen

JOHANNES BAENSCH
Chief Scientific Officer and Head of Global R&D Nestlé Skin Health

CONFERENCE SYNOPSIS

OVERVIEW

- Over 60 presentations from industry and academic leaders
- Over 7 hours of dedicated networking time
- 3 expert-led roundtable discussions
- 3 extended senior-level interactive panel discussions
- Start-up showcase and investor pitch
- An historic conference space in the heart of Amsterdam
- Co-located probiotics congress

OUTSIDE THE GUT

- Skin microbiome - acne, eczema, atopic dermatitis, probiotics, wound health & cosmetic applications
- Women's health – host-interactions, vaginal microbiome, preterm birth and pregnancy progression
- Gut-brain axis – signalling, role of human milk oligosaccharides & nutrition, links to disease and behaviour
- Lung and oral microbiome research

GUT MICROBIOME

- Microbiome and allergy
- Prebiotics, diet and nutrition
- Microbiome and cancer
- Interventions in the microbiome – probiotics/phage/FMT/ synthetic biology
- Microbiome and early life
- Obesity and cardio-metabolic disease

PROBIOTICS

- Probiotics and digestive health
- Probiotics in paediatrics
- Regulation and product development
- Strain identification, screenings and safety

COMMERCIALISATION OF THE MICROBIOME

- Venture capital and funding options – start-up showcases
- Pharma and biotech case studies and strategies
- QC, IP and regulatory angles
- Going beyond the noise
- Development, application & acquisition of technology platforms within the microbiome space
- Partnering across the microbiome field – industry/academia

ANIMAL HEALTH

- Probiotics in animal health
- Animal gut microbiome and host interactions
- Feed additives
- Product development and safety
- Antibiotic resistance

UNABLE TO MAKE THE EUROPEAN DATES?

Why not sign up for either our Asia or US meeting

Asia: 1-2 March 2017 – Hong Kong
www.global-engage.com/event/microbiome-asia/

USA: 2-3 November 2017 – San Diego
www.global-engage.com/event/microbiome/

Platinum Sponsor 2017

Clinical-Microbiomics - actionable microbiome insights

Gold Sponsors 2017

SynCo Bio Partners

LALLEMAND HEALTH SOLUTIONS

Capsugel

WINCLOVE PROBIOTICS

Silver Sponsors 2017

DNA genotek

Seventure

vaiomer

SYNCROSOME IN-DEPTH EFFICACY CHARACTERIZATION CRO

METABOLON

ZYMO RESEARCH The Beauty of Science is to Make Things Simple

QIAGEN

TNO TRISKELION

Exhibitors 2017

Clinical-Microbiomics - actionable microbiome insights

SynCo Bio Partners

LALLEMAND HEALTH SOLUTIONS

WINCLOVE PROBIOTICS

DNA genotek

vaiomer

ZYMO RESEARCH The Beauty of Science is to Make Things Simple

cobra:bio Expertise Experience Excellence

SYNCROSOME IN-DEPTH EFFICACY CHARACTERIZATION CRO

CeMeT Center for Metagenomics

NIZO FOR BETTER FOOD & HEALTH

Capsugel

METABOLON

BASECLEAR FOR 100% DNA RESULTS

LGC

GATC BIOTECH

Humanizing Genomics macrogen

TNO TRISKELION

Quay Pharma

atlantia FOOD CLINICAL TRIALS

QIAGEN

GA Genetic Analysis

origin SCIENCES

Sponsors 2017

ProDigest Gastrointestinal Expertise

Bio-Me AS Personal Microbiome Analysis

Yakult

ADAM HACKER
Vice President & Head of Vaccines and Microbiome, Global Regulatory Affairs, Janssen

ELENA VERDÚ
Associate Professor, Division of Gastroenterology, McMaster University, Canada

JANNEKE VAN DE WIJGERT
Professor of Infection and Global Health, University of Liverpool

EGIJA ZAURA
University Research Chair Professor, VU University Amsterdam, The Netherlands

BERNHARD PAETZOLD
CEO, S-Biomedic

WOUTER DE JONGE
(TRACK CHAIR)
Professor of NeuroGastroenterology, AMC Amsterdam, the Netherlands

KARIN LOSER
Professor, Department of Dermatology, University of Münster, Germany

PAUL WILMES
Associate Professor, Luxembourg Centre for Systems Biomedicine, University of Luxembourg

KARIN CONDE-KNAPE
VP Cardiovascular and Metabolism Scientific Innovation, Johnson and Johnson Innovation, UK

HENRIK BJØRN NIELSEN
Chief Scientific Officer, Clinical-Microbiomics

NIALL HYLAND
Lecturer In Pharmacology & Faculty, APC Microbiome Institute, University College Cork, Ireland

LIONEL BRETON
Global Director, Open Research Department, L'Oréal, France

ENRIQUE VAZQUEZ
Senior Scientist, Abbott Nutrition

MARIE DRAGO
Founder, Gallinée

JAKOB STOKHOLM
Postdoc, Herlev and Gentofte Hospital, University of Copenhagen, Denmark

FRANÇOIS-PIERRE MARTIN
Senior Scientist and Senior Project Leader, Nestlé Institute of Health Sciences, Switzerland

KRISTIN WANNERBERGER
Director R&D Alliance Management, Ferring Pharmaceuticals, Switzerland

JAMES BROWN
Director in Computational Biology & GSK Senior Fellow, GSK, USA

LUC STERKMAN
CEO, Caelus Health

PATRICK SMITH
Ph.D., Scientist R&D, QIAGEN

DAVID MACINTYRE
MRC-CDA Fellow & Lecturer in Reproductive Systems Medicine, Imperial College London, UK

VASSILIA THEODOROU
Professor & Team Leader, Neuro-Gastroenterology & Nutrition, INRA, France

BRUCE ROBERTS
Chief Scientific Officer, Vedanta Biosciences, USA

NAOMI B. ZAK
CEO, MBCure, Israel

JOHANNES BAENSCH
Chief Scientific Officer and Head of Global R&D Nestlé Skin Health

SASKIA VAN HEMERT
Senior Scientist, Winclove Probiotics

OLIVER CHAO
Head, Emerging Biomedical Sciences, Sanofi

GWENNY FUHLER
(TRACK CHAIR & SPEAKER)
Assistant Professor, ErasmusMC, University Medical Center Rotterdam, the Netherlands

MARK WILSON
CEO, MatriSys Bioscience Inc., USA

STEPHEN BARRIE
CEO, Biome Pharma

LISA GAMWELL
Microbiome Product Manager, DNA Genotek

GAËLLE BOUDRY
Team Leader, INRA, France

FABIO PICCINI
(TRACK CHAIR)
Co-Founder and Director, Italian Microbiome Project

THOMAS KURI
Scientific Director, Zymo Research Europe GmbH

LAURA STEENBERGEN
(TRACK CHAIR)
Researcher, Leiden University, the Netherlands

JISOO PAE
CEO, Genome and Company, Republic of Korea

MICHAEL VAN DER HORST
Process Engineer Technical Operations Manufacturing, SynCo Bio Partners

ALWINE KARDINAAL
NIZO Food Research BV

SACHA VAN HIJUM
NIZO Food Research BV

GREGORY LAMBERT
CEO, TargEDys SA

ERIC DE LA FORTELLE
Venture Partner, Seventure Partners

ROBERT P. MOHNEY
Senior Director Metabolon, Inc.

MORTEN L. ISAKSEN
CEO, Bio-Me AS

FRANK SCHUREN
Senior Scientist Microbiology, TNO Research

BENJAMIN LELOUVIER
Group Leader, Molecular and Cell Biology, Vaiomer, France

SACHA MANN
CEO, Biosys UK Ltd

SAHAR EL AIDY
Assistant Professor, University of Groningen, The Netherlands

ISOLDE BESSELINGER VAN DER VAART
Manager Research Partnerships, Winclove Probiotics

LARRY WEISS
Chief Medical Officer, AOBiome

CHRISTIAN KLEIN
Business Development Associate, Capsugel

RIC VAN TOL
Director Global R&D, Mead Johnson Nutrition, the Netherlands

CLARA BELZER
Assistant Professor, Department of Agrotechnology and Food Sciences, Wageningen UR, The Netherlands

PHILIPPE LANGELLA
Research Director, Laboratory of Commensals and Probiotics-Host Interactions, MICALIS Institute, INRA, France

MASSIMO MARZORATI
Business Development Director, ProDigest

KAROLINE SIDELMANN BRINCH
Science Manager, Animal Health & Nutrition, Novozymes, Denmark

ESTHER JIMÉNEZ
Assistant Lecturer, Department of Nutrition, Food Science and Food Technology, Complutense University of Madrid, Spain

KIERAN TUOHY
Professor, Fondazione Edmund Mach, Italy

MICK BAILEY
Professor, School of Veterinary Sciences, University of Bristol, UK

JEAN-POL WARZÉE
President, European Scientific League for Probiotics, Belgium

OLAF LARSEN
Science Manager, Yakult Nederland B.V, & Assistant Professor, Vrije Universiteit Amsterdam, The Netherlands

SANDRINE CLAUS
Associate Professor in Integrative Metabolism, University of Reading, UK

GER RIJKERS
Professor in the Biomedical and Life Sciences, University College Roosevelt, The Netherlands

MARKUS LEHTINEN
R&D Manager, DuPont Nutrition & Health

MARIA SAARELA
Principal Investigator, VTT Technical Research Centre of Finland

SHAHRAM LAVASANI
Founder and CEO, ImmuneBiotech AB

NICOLAS MADIT
Business Development Manager, Capsugel

HIMANSHU KUMAR
Senior Researcher, Functional Foods Forum, University of Turku, Finland

CATHERINE DANIEL
Laboratory of Lactic Acid Bacteria and Mulcosal Immunity, University of Lille, France

THEOFILOS POUTAHIDIS
Assistant Professor, Veterinary Pathology, Aristotle University of Thessaloniki, Greece

08:00-08:50 Registration & Refreshments

08:50-09:00 **Global Engage Welcome Address and Morning Chair's Opening Remarks**

TRACK CHAIR: WOUTER DE JONGE

Professor of NeuroGastroenterology, AMC Amsterdam, The Netherlands

GUT MICROBIOTA IN HEALTH & DISEASE

09:00-09:40

KEYNOTE ADDRESS: ELENA VERDÚ

Associate Professor, Farncombe Family Digestive Health Research Institute & Canada Research Chair in Inflammation, Microbiota and Nutrition, McMaster University

The role of intestinal microbiota in gluten metabolism: Implications for celiac disease

Partially-degraded gluten peptides from cereals trigger celiac disease, a common autoimmune enteropathy occurring in genetically susceptible persons. Susceptibility genes are necessary but not sufficient to induce autoimmunity. This, together with the recent increasing prevalence of celiac disease, has led to the proposal that additional environmental factors play a role in its pathogenesis. Clinical studies have demonstrated alterations in the duodenal microbiota of celiac patients compared with healthy controls, and animal studies have determined that gluten immunopathology is modulated by commensal colonization. Similarly to other autoimmune disorders, these associations raised the hypothesis that microbial factors modulate celiac risk in genetically predisposed people. However, the potential underlying mechanisms remain unknown. We undertook a translational and reductionist approach to investigate gluten metabolism by opportunistic pathogens and commensal bacteria isolated from duodenum of subjects with and without celiac disease. We characterized the capacity of the produced peptides to activate gluten-specific T-cells from celiac patients. Bacterial colonizations of germ-free mice produced distinct gluten degradation patterns in the mouse small intestine. Pseudomonas aeruginosa (Psa), an opportunistic pathogen from celiac patients, exhibited elastase activity and produced peptides that better translocated the mouse intestinal barrier. Psa-modified gluten peptides activated gluten-specific T-cells from CeD patients. In contrast, Lactobacillus spp. from the duodenum of non-CeD controls degraded gluten peptides produced by human and Psa proteases, reducing their immunogenicity. Thus, small intestinal bacteria exhibit distinct gluten metabolic patterns in vivo, increasing or reducing gluten peptide immunogenicity. This microbe-gluten-host interaction may modulate autoimmune risk in genetically susceptible persons and may underlie the reported association of dysbiosis and celiac disease.

09:40-10:05

ADAM HACKER

Vice President & Head of Vaccines and Microbiome, Global Regulatory Affairs, Janssen

Regulatory Pathways and Challenges of Developing a Microbiome Product

- Consumer, health food and biopharmaceutical companies are researching ways to utilize live microbes to maintain health, prevent, intercept and treat diseased states
- The same microbial strain could potentially be regulated in different categories: a biological drug product (when intended to prevent or treat a disease), a cosmetic (when intended to beautify), or a conventional food or dietary supplement when intended to affect the structure or function of the body)
- In order to realize the benefits of these cosmetics, health foods and preventive and therapeutic microbial products, appropriate research must be conducted that meets the needs of the public, payer and regulator.

TRACK CHAIR: MARIA SAARELA

Principal Investigator, VTT Technical Research Center of Finland

PROBIOTICS CONGRESS

09:00-09:40

KEYNOTE ADDRESS: PHILIPPE LANGELLA

Research Director, Laboratory of Commensals and Probiotics-Host Interactions, MICALIS Institute, INRA, France

Faecalibacterium prausnitzii and other Next-Generation Probiotics to Prevent and to Treat Gastrointestinal Disorders and Diseases in Humans

Here, we will present all our last results on F. prausnitzii and human health. We will thus describe its beneficial effects in i) a novel chronic inflammation model; ii) in a novel chronic low-grade inflammation model to mimic the disorders observed in IBS patients6; and iii) in acute stress models which are neomaternal separation mice model and partial restrain stress in rats. Recent data on the mode of action will be also described including i) the novel gnotobiotic model which led us to the identification of anti-inflammatory metabolites potentially produced by F. prausnitzii; and ii) the identification of a potential anti-inflammatory F. prausnitzii MAM (for Microbial Anti-inflammatory Molecule) protein. All these recent results confirm the high potential of F. prausnitzii as a potential next-generation probiotic for both IBS and IBD patients. We will also present potential other next-generation probiotics which are lactobacilli able to produce Ahr agonists recently shown to protective in murine colitis models.

09:40-10:05

SHAHRAM LAVASANI

Founder and CEO, ImmuneBiotech AB

Designed Microbiome Therapies Targeting the Microbes and Beyond

The global prevalence of chronic inflammatory diseases is increasing. The gut microbiome plays an essential role in disease regulation and efficacy of therapies. Altered microbial communities, also termed dysbiosis, has been observed in many intestinal and extra-intestinal inflammatory disorders. There is not yet a clear understanding whether dysbiosis is a cause or a consequence of the diseases. Microbial therapies which only target the dysbiosis have shown limited success. A healthy gut microbiota exists in an equilibrium with the gut barrier and the immune system. The importance of multiple-target drug cocktails comprising commensal bacteria will be discussed. The bacterial library, screening technologies and design of potential and affordable drugs will be presented with particular focus on successful products that treat Irritable Bowel Syndrome and Clostridium difficile.

10:05-10:35

SOLUTION PROVIDER PRESENTATION:
HENRIK BJØRN NIELSEN
Chief Scientific Officer, Clinical-Microbiomics

Human gut microbes impact host serum metabolome and insulin sensitivity

Insulin resistance is a forerunner state of type 2 diabetes. Here we show how the human gut microbiome impacts the serum metabolome and associates with insulin resistance in 277 non-diabetic Danish individuals. The serum metabolome of insulin-resistant individuals is characterized by increased levels of branched-chain amino acids (BCAAs), which correlate with a gut microbiome that has an enriched biosynthetic potential for BCAAs and is deprived of genes encoding bacterial inward transporters for these amino acids. Prevotella copri and Bacteroides vulgatus are identified as the main species driving the association between biosynthesis of BCAAs and insulin resistance. Furthermore, P. copri can induce insulin resistance, aggravate glucose intolerance and augment circulating levels of BCAAs when feed to mice. These findings suggest that microbial targets may have the potential to diminish insulin resistance and reduce the incidence of common metabolic and cardiovascular disorders, and moreover, it demonstrates the power of a few of Clinical-Microbiomics' metagenomics tools for enhanced microbiome insights.

Clinical-Microbiomics
- actionable microbiome insights

10:05-10:35

SOLUTION PROVIDER PRESENTATION:
ESTHER JIMÉNEZ
Assistant Lecturer, Department of Nutrition, Food Science and Food Technology, Complutense University of Madrid, Spain

Effect of Three Probiotic Strains on Safety, Tolerance, Gut Microbial and Immunological Composition of Infants aged 3 to 12 months

Healthy infants aged 3 to 12 months participated in a safety and tolerance study of three probiotic strains (Bifidobacterium longum subsp. infantis R0033, Bifidobacterium bifidum R0071 and Lactobacillus helveticus R0052). The 221 infants were randomized to receive either a placebo or one of the three probiotics daily. Safety parameters (weight, height and head circumference) were equivalent in all groups. No serious adverse events were reported and the number of adverse events was equivalent in all groups. The analysis of immune factors in faecal samples, collected at baseline and after the 8-week intervention, suggested a modulatory effect by the probiotic strains. The species profile of the faecal microbiome observed in the probiotic groups resembled that of a younger infant's microbiota when compared to the placebo group.

LALLEMAND
LALLEMAND HEALTH SOLUTIONS

10:35-11:45 Morning Refreshments / Poster Presentations / Scheduled One-to-One Meetings

GUT MICROBIOTA IN HEALTH & DISEASE

TRACK CHAIR:
WOUTER DE JONGE
Professor of NeuroGastroenterology, AMC Amsterdam, The Netherlands

11:45-12:10

JAMES BROWN
Director in Computational Biology & GSK Senior Fellow, GSK, USA

Novel Disease Targets Based on Human-Microbe Interactions

- While infectious and chronic diseases have been traditionally very distinct research areas, recent advances in genomics and bioinformatics are furthering deeper interactions.
- Understanding the role of the microbiome in human health will provide new therapeutic paradigms for many chronic diseases.
- Conversely, new research into the interplay between the human host and pathogens, the so-called host-pathogen interactome, is driving human targeted approaches for infectious diseases.
- This presentation will discuss the opportunities and challenges in translating both the microbiome and interactome from basic science into clinical therapies using specific examples from our drug discovery efforts at GSK.

R&D OUTSIDE THE GUT

TRACK CHAIR:
MARIE DRAGO
Founder, Gallinée

11:45-12:10

KARIN LOSER
Professor, Department of Dermatology, University of Münster, Germany

Psoriasis and Microbiome

The skin acts as an important interface between the organism and the external environment, but also represents an ecosystem providing distinct niches for microbial communities and it has been shown that commensal microbes influence the development and progression of various skin diseases including psoriasis. Whereas a high relative abundance of Actinobacteria was detected in healthy human skin, inflammatory lesions from psoriasis patients are characterized by an over-representation of Proteobacteria and an under-representation of Actinobacteria compared to non-lesional skin from the same individual suggesting that the cutaneous microbiota might affect the pathogenesis of psoriasis. Hence, we speculated that "normalization" of the skin microflora in cutaneous lesions could be an important prerequisite for successful treatment. Thus, we investigated if and how the cutaneous microflora changes in lesional skin from the same psoriasis patients before and at different time points after systemic treatment with biologics.

PROBIOTICS CONGRESS

TRACK CHAIR:
MARIA SAARELA
Principal Investigator, VTT Technical Research Center of Finland

11:45-12:10

HIMANSHU KUMAR
Senior Researcher, Functional Foods Forum, University of Turku, Finland

Antibiotic exposure during and after birth – Impact on infant gut colonisation

- Our recent study suggests that empirical antibiotic exposure after birth has long term impact on gut microbiota colonisation even observed six months later in life.
- Intrapartum exposure of antibiotic to mothers has no long term impact on neonatal gut microbiota colonisation.
- Microbiome analysis gives us insights on the long term effect of antibiotic exposure on gut colonisation and its impact on health.

12:10-12:35

BRUCE ROBERTS

Chief Scientific Officer, Vedanta Biosciences, USA

A new class of drugs to modulate the human microbiome - TBC

Vedanta Biosciences is focused on the development of rationally designed cocktails consisting of commensal bacteria for the treatment of a wide range of clinical conditions. Selection of combinations of bacterial strains is based on a deep understanding of genomic, metabolic and immune cell modulating properties of isolated human derived commensals. Data from translational medicine initiatives is integrated into discovery efforts to focus on strains associated with clinical benefit. Vedanta employs novel bioinformatics tools to aid in the optimization of consortia compositions and support pharmacologic studies. Finally Vedanta has developed unique manufacturing capabilities optimized for the production of human-derived commensals. In aggregate, Vedanta is well positioned to play a leading role in the clinical application of bacterial cocktails for directed alteration of the composition of the microbiome.

12:35-13:00

GWENNY FUHLER

Assistant Professor, ErasmusMC, University Medical Center Rotterdam, the Netherlands

IBD and its Extra-Intestinal Manifestations – Microbiome Interactions?

Inflammatory bowel disease is associated with several extra-intestinal manifestations, including skin diseases and primary sclerosing cholangitis. While a role for the microbiome in the initiation and maintenance of IBD intestinal disease activity is becoming ever clearer, the role of dysbiosis in the IBD-associated diseases remains to be explored. This presentation will highlight the research we perform to investigate the host-microbiome interactions in IBD, and will specifically address the overlap (and differences) between gut and skin microbiome of patients suffering from IBD, IBD and concomitant skin disease, or skin disease only.

12:10-12:35

JOHANNES BAENSCH

Chief Scietific Officer, Nestlé Skin Health

Human Microbiome: an unprecedented opportunity for better skin health and wellness

The human microbiota is a dynamic and densely populated microbial community that can provide important benefits to its host, especially for inhibiting skin pathogen colonization. Changes in the microbiota lead to inflammatory and metabolic diseases. Human skin is the largest organ and is the primary defense against external factors. Human skin microbiota is entirely different from the gut microbiota and is stable over a long period of time. The general accessibility of skin coupled with longitudinal stability of skin microbiota allows clinical studies investigating alterations observed at different stages of health and disease states, e.g. acne breakouts at different stages of life, atopic dermatitis, psoriasis etc. In addition, rapid and high throughput DNA sequencing platforms and data integration can shed light on the individualized skin microbiome for personalized skin care and therapeutics. The presentation will cover some demonstrated skin benefits with probiotics and nutritional bioactives. In conclusion, human microbiome-based solutions offer an unprecedented opportunity to deliver tomorrow's nutritional and topical solutions for enhancing quality of life by advancing skin health.

12:35-13:00

LIONEL BRETON

Global Director, Open Research Department, L'Oréal, France

The Landscape of the Human Skin Microbiome and an Example on Dandruff Scalp

Dandruff is one of the most common skin conditions, affecting approximately half of adult population worldwide. This inflammatory chronic disorder is related to skin barrier disruption, epidermal cellular proliferation and differentiation, as well as shifts in sebum composition. It has been frequently associated with yeasts from Malassezia genus, which are also members of the healthy cutaneous microbiome. However, the microbial role has not been elucidated yet, and the etiology of the disorder remains incompletely understood. We used sanger and next-generation sequencing (NGS) to analyze bacterial and fungal microbiota associated with skin from normal and dandruff subjects. Microbial shift in Bacterial and fungal communities were observed in lesional and in non-lesional sites from dandruff subjects, suggesting that dandruff is related to a systemic process that is not restricted to the site exhibiting clinical symptoms. Our recent studies on dandruff scalp microbiota provides new perspectives for the understanding of this skin disorder, establishing steps toward a broader view of dandruff etiology and the role of the microbiome in the symptom development.

12:10-12:35

CLARA BELZER

Assistant Professor, Department of Agrotechnology and Food Sciences, Wageningen UR, The Netherlands

Akkermansia muciniphila a Next Generation Probiotic to Treat Diabetes

- A. muciniphila possesses anti-inflammatory properties, and has been correlated to protection against inflammation in diseases such as, type 2 diabetes mellitus, and obesity.
- A. muciniphila treatment can reverse fat gain, serum lipopolysaccharide (LPS) levels, gut barrier function, and insulin resistance in mice.
- Immune stimulatory capacities of A. muciniphila lay partially within its extraordinary outer-membrane structure.
- Single purified outer-membrane proteins of A. muciniphila stimulate host immune response through TLR2 and increase trans-epithelial resistance of host cells.
- Pasteurized cells and the outer membrane protein Amuc_1100 can be used as an oral treatment against fat mas gain and insulin resistance in mice
- Metabolic interactions of A. muciniphila with butyrogens provide evidence for a colonic butyrate production pathway that is dependent on host produced glycans and independent of dietary carbohydrates

12:35-13:00

OLAF LARSEN

Science Manager, Yakult Nederland B.V, & Assistant Professor, Vrije Universiteit Amsterdam, The Netherlands

Probiotics: Practical Considerations and Potential for Healthy Ageing

- Results showing the current attitude of medical doctors towards probiotics
- Results regarding matrix effects on probiotics key characteristics
- Clinical results on improvement of bowel habits of elderly in a nursing home setting

13:00-13:15

COMPANY SHOWCASE:
FRANK SCHUREN

Senior Scientist Microbiology, TNO Research

Innovative Translational Gut Microbiome Technologies

TNO and Triskelion's long term experience with in vitro intestinal models (TIM) has been combined with microbiome models and technologies. Microbiome data obtained from human samples (from various organs) are analysed by advanced bioinformatics approaches including machine learning. This combination of expertise and underlying research has resulted in unique in vitro models. These include the i-screen platform mimicking intestinal microbiota composition in a medium throughput format and the TIM2 model which is a more controlled in vitro model mimicking intestinal physiology. These models are increasingly used for pharmaceutical development including metabolite profiling. In combination with InTESTine, organ-on-a-chip and intestinal organoid technologies TNO and Triskelion can offer tailor made solutions to your specific research question related to microbiome. Applications of these technologies in the immunology (e.g. IBD), immune-oncology and infectious diseases are in progress.

13:00-13:15

COMPANY SHOWCASE:
SACHA VAN HIJUM

Principal Scientist Microbiomics, NIZO

The relation between ichthyosis vulgaris, host genotype and skin microbiota

Filaggrin (FLG) is a structural skin protein highly abundant in histidine that, upon degradation, serves as the main source of "natural moisturizing factors", which allows the outermost skin layers to stay hydrated. Mutations in the FLG gene might lead to aberrant skin barrier function, and we questioned if variation in this epidermal barrier gene can cause microbial changes. Microbiota analysis showed that FLG-/- individuals have a lower relative abundance of proteolytic Gram-positive anaerobe cocci. We proved, in a recently developed in vitro system that mimics human stratum corneum for bacterial growth, that reduction of these taxa was indeed due to FLG deficiency. Furthermore, functional analysis revealed that microbiome-derived genes involved in metabolic pathways for histidine utilization as carbon source are underrepresented in the FLG-/- microbiome. Collectively, our data show for the first time how a specific genetic defect in the skin barrier can shape the composition of cutaneous microbial communities.

13:00-13:15

COMPANY SHOWCASE:
MASSIMO MARZORATI

Business Development Director, ProDigest

An Integrated Technology Platform for the Development of Innovative Biotherapeutics

- An integrated platform based on the Simulator of the Human Intestinal Microbial Ecosystem (SHIME®) coupled with cell line and human clinical trials
- The development of a second generation of probiotics: the Carodel case study
- An innovative case of probiotic to target oxidative stress and gut health

13:15-14:15

Lunch

SPONSORED BY: Yakult

TRACK CHAIR:
GWENNY FUHLER

Assistant Professor, ErasmusMC, University Medical Center Rotterdam, the Netherlands

TRACK CHAIR:
NAOMI FLAGG

Conference Producer, Global Engage, UK

TRACK CHAIR:
OLAF LARSEN

Science Manager, Yakult Nederland B.V, & Assistant Professor, Vrije Universiteit Amsterdam, The Netherlands

14:15-14:45

SOLUTION PROVIDER PRESENTATION:

SASKIA VAN HEMERT

Senior Scientist, Winclove Probiotics

Probiotics Potentials in Allergy

During the last decades there has been a steep increase in the prevalence of atopic disease such as asthma, atopic dermatitis and allergic rhinitis. Growing evidence underlines the important role of infant gut colonization in the development of the immune system. The composition and diversity of the microbiota is strongly influenced by environmental and lifestyle factors, especially in early life, which may underlie the atopic epidemic. The possibility to modify gut colonization through probiotic supplementation in childhood seems an attractive way to prevent atopic diseases. Also later in life, children and adults suffering from allergies can benefit from probiotic use. Though research has shown potential for probiotics many questions still remain, one of which is what can be done to optimize success rate? In this presentation, we want to demonstrate different important factors which may increase the chance of success for probiotic interventions in allergy.

WINCLOVE PROBIOTICS

14:15-14:45

PANEL DISCUSSION:

The Good, The Bad, and the Ugly: Skin Microbiome

- Developing products/treatments based on skin microbiome research
- The role of probiotics in skin health
- Characterising skin bacteria and their role in health and disease
- Challenges and future developments of skin microbiome research

BERNHARD PAETZOLD

CEO, S-Biomedic

MARIE DRAGO

Founder, Gallinée

MARK WILSON

CEO, MatriSys Bioscience Inc., USA

LARRY WEISS

Chief Medical Officer, AOBiome

14:15-14:45

SOLUTION PROVIDER PRESENTATION:

NICOLAS MADIT

Business Development Manager, Capsugel

Innovative Oral Dosage Form Technology Platforms for Delivery into the Digestive Tract

Through the blend of polymer science and capsule engineering, Capsugel has developed a portfolio of functional capsules for delivery into the digestive tract that achieve enteric protection and delayed release without functional (enteric) coating. Dr. Nicolas Madit will discuss the proven functionality of the capsule portfolio and how they meet the specific requirements for food supplements and pharmaceutical applications

Capsugel

14:45-15:10

KRISTIN WANNERBERGER

Director R&D Alliance Management, Ferring Pharmaceuticals, Switzerland

Bacteriophages Therapy - Advantages for Patients Today

Bacteriophages are viruses that kill bacteria. Bacteriophages therapy is an old therapy that disappeared in the western world in the end of the first half of the 20th century. The emerging need of alternatives to antibiotics is now contributing to the increased interest in bacteriophages therapy. Bacteriophages therapy is widely used in Georgia, Russia and some other countries of the former Soviet Union, as well as in some eastern European countries however in the western world no approved drug products exists based on the bacteriophages therapy. Alliances between academy and industry could be a way of reintroducing the bacteriophages therapy in the western world.

14:45-15:10

MARK WILSON

CEO, MatriSys Bioscience Inc., USA

Functional Screening for Rational Microbiome Therapeutics

MatriSys Bioscience was formed to translate the seminal discoveries of Professor Richard L. Gallo MD PhD of UCSD into full commercial development. We will present "Functional Screening for Rational Microbiome Therapeutics" which is a strain-based approach to the discovery of novel microbes. Also presented will be a company and clinical update.

14:45-15:10

JEAN-POL WARZÉE

President, European Scientific League for Probiotics, Belgium

Quality Control of Probiotics, the ESLP Initiative

Numerous proprietary medicinal products and food supplements, containing probiotics such as Lactobacilli, Bifidobacteria have been introduced in Europe over the last 10 years. Today all parties involved agree on the need for a "Quality Label" to differentiate quality products from "non-controlled "products. The "ESLP label" is a "Quality Label" created by the non-profit association "European Scientific League for Probiotics" founded in 2011. The ESLP quality label is granted after qualitative and quantitative microbiological analysis have been carried out by an independent laboratory and this based on the specifications defined by the ESLP Scientific Committee. I'll get the opportunity to present to you 5 years of experience in Belgium with the ESLP Quality label. www.probioleague.org

15:10-15:35

LUC STERKMAN

CEO, Caelus Health

Intestinal Microbiota in the Prevention and Treatment of Cardio-metabolic Disorders

- FMT studies as source of new targets for intervention in cardio-metabolic disorders.
- Food or Pharma – strategic considerations
- Pre-clinical and clinical development of E. hallii a17.05nd related butyrate producing microbes
- From strains to strengths – challenges in formulation development

15:10-15:35

EGIJA ZAURA

University Research Chair Professor, VU University Amsterdam, The Netherlands

Resilience of Oral Microbiome

The human microbiome has evolved in symbiosis with its host for thousands of years. This has resulted in highly efficient host-bacterial mutualism. Oral microbiome withstands daily perturbations such as mechanical removal by mastication and tooth brushing, and exposure to antimicrobial substances present oral hygiene products and foods. Our recent research has shown that oral microbiome is far more resistant to a single dose of antibiotics than microbiome of the gut. In this talk the current knowledge on the mechanisms behind this stability of the oral ecosystem will be discussed.

15:10-15:35

KAROLINE SIDELMANN BRINCH

PhD, Science Manager, Animal Health & Nutrition, Novozymes, Denmark

Screening and Characterization of New Probiotics

- Novozymes has a strain collection that contains thousands of bacterial strains
- Bacterial strains are screened for safety, robustness and performance to identify ones fit for probiotic use.
- Presentation will be focused on our in vitro and in silico approaches to aid in screening and characterization of novel bacterial strains that have probiotic potential.

15:35-15:50

COMPANY SHOWCASE: MICHAEL VAN DER HORST

Process Engineer Technical Operations Manufacturing, SynCo Bio Partners

Human Microbiota: Proof of Concept to Production

- General overview of live microbial production processes
- Step by step process description with emphasis on process development
- Considerations prior/during tech transfer focusing on specific requirements for pharma (GMP) production

SynCo Bio Partners

15:35-15:50

COMPANY SHOWCASE: THOMAS KURI

Scientific Director, Zymo Research Europe GmbH

Standardizing Microbiomics – Removing Bias in Collection, Purification and Analyses

The rapid growth of microbiomics has increased the demand for standard methods to improve the reproducibility and quality of the generated data. Therefore, there is a need for standard reference materials for the development, evaluation, calibration, and validation of complex microbiomics workflows encompassing sample collection, sample preparation, and analyses. Standardization of the following methods would greatly improve the quality of data generated: (1) sample collection tools that can reliably provide a molecular snapshot at the time of collection by stabilizing the nucleic acids at ambient temperature and rendering the sample non-infectious for safe transport; (2) purification methodologies that consider the biases associated with differential lysis efficiency of the organism being processed; (3) analytical pipelines that reduce bias due to library preparation methods, PCR, and bioinformatics.

ZYMO RESEARCH
The Beauty of Science is to Make Things Simple

15:35-15:50

NO PRESENTATION

15:50-16:40 Afternoon Refreshments / Poster Presentations / Scheduled One-to-One Meetings

TRACK CHAIR: ALEX WHITE
Senior Conference Producer, Global Engage, UK

TRACK CHAIR: NAOMI FLAGG
Conference Producer, Global Engage, UK

16:40-17:05

JANNEKE VAN DE WIJGERT

Professor of Infection and Global Health, University of Liverpool

The role of the urogenital microbiota in sexual and reproductive health

Research based on microscopy of cervicovaginal samples showed that the vaginal microbiota of healthy women are dominated by lactobacilli. It also showed that bacterial vaginosis, which is a polybacterial anaerobic dysbiosis, is a risk factor for HIV acquisition in women, HIV transmission to male partners, pelvic inflammatory disease, pregnancy complications including preterm birth, and maternal and neonatal sepsis. With the increased availability of high throughput sequencing, we have now learned that not all lactobacilli are equal (Lactobacillus crispatus is consistently associated with 'health,' whereas L. iners often co-occurs with Candida species or other pathobionts that are associated with adverse outcomes), and that cervicovaginal dysbiosis also comes in different varieties with or without biofilms. These new findings have implications for prevention and treatment interventions.

17:05-17:30

DAVID MACINTYRE

MRC-CDA Fellow & Lecturer in Reproductive Systems Medicine, Imperial College London, UK

Vaginal Microbiota-maternal Host Interactions and their Influence on Pregnancy Outcomes

Vaginal bacterial communities dominated by Lactobacillus spp. are generally thought to promote healthy reproductive outcomes during pregnancy. Disturbance of these communities is associated with increased risk of poor outcomes, including preterm birth. In this talk I will describe our recent efforts to characterise vaginal microbiota composition in women at high risk of preterm birth and explore how treatment interventions (e.g. progesterone, cervical cerclage) may impact upon the vaginal bacterial community structure. I will also present a novel ambient MS-based method we have developed for rapidly assessing vaginal mucosa metabolic profiles which are reflective of microbial-host interactions.

16:40-17:30

ROUNDTABLE DISCUSSIONS:

TABLE 1:

ERIC DE LA FORTELLE

Venture Partner, Seventure Partners

From World-Class Research to Successful Start-Up: Stories and Success Factors

- Aligning all the actors in the start-up formation
- Generating the data, building the business plan, refining the pitch
- Finding a lead investor and a syndicate which is adapted to the company's needs and objectives

TABLE 2:

SAHAR EL AIDY

Assistant Professor, University of Groningen, The Netherlands

The Old - New Story of the Microbiota-Gut-Brain Axis; Where are we?

- What do we know on how it works?
- What happens when stress undermines our natural defences?
- Psychobiotics: The medicine of tomorrow?

TABLE 3:

ISOLDE BESSELING – VAN DER VAART

Manager Research Partnerships, Winclove Probiotics

GER RIJKERS

Professor in the Biomedical and Life Sciences, University College Roosevelt, The Netherlands

Prevention of allergy (eczema) by probiotics

- Many studies showed beneficial effects of perinatal probiotic use to prevent eczema. The World Allergy Organisation (WAO) recommended this use as well in their most recent guidelines. What is needed now to get this evidence really implemented in practice?
- What is the best timing for probiotic intervention in early life; when to start and how long to continue? What are the benefits and downsides there?
- Would it be for future of interest to study not only effects in high-risk populations, but also in lower-risk populations (background of this idea is that in high-risk populations the effects of genetics might be more compared to lower-risk where
- Management of allergy by probiotics
- What outcome measures are most of importance when looking at probiotics for management of allergy: PROMs like quality of life (QoL), clinical outcome measures (like SCORAD), mechanistic markers (like IgE)
- How should we position probiotic interventions with respect to management of the disease: as complementary to current medication, stand-alone or after medicinal treatment to prevent recurrence / extend remission time

17:30	End of Day One
17:30-18:30	Drinks Reception

If you would like to sponsor the drink's reception please contact Gavin Hambrook at gavin@globalengage.co.uk

08:00-08:55 Networking Meetings & Refreshments

08:55-09:00 **Morning Chair's Opening Remarks**

TRACK CHAIR: FABIO PICCINI

Co-Founder and Director, Italian Microbiome Project

09:00-09:40

KEYNOTE ADDRESS: PAUL WILMES

Associate Professor, Luxembourg Centre for Systems Biomedicine, University of Luxembourg

From Integrated Multi-omics to Causality: How to Distil Data, How to Design Experiments and How to Conduct Them

- Integrated multi-omics
- Causality
- Experiments

09:40-10:05

GREGORY LAMBERT

CEO – Vice President R&D, TargEDys SA

Control of the Appetite through the Microbiome

- How does microbiome control appetite?
- How does TargEDys intent to control appetite and body weight through a probiotic approach?
- Current preclinical results on TargEDys approach

TRACK CHAIR: MASSIMO MARZORATI

Business Development Director, ProDigest

09:00-09:40

KEYNOTE ADDRESS: CATHERINE DANIEL

Group Leader in the Laboratory of Lactic Acid Bacteria and Mucosal Immunity, Center of Infection and Immunity, Institut Pasteur Lille, France

One Step Ahead: Genetically Modified Probiotics as Biotherapeutics

There is a strong interest in unravelling the molecular mechanisms involved in industrial robustness, cognate stress resistance and health-promoting phenotypes of food bacteria. This strategy, which involves the construction of genetically modified probiotics, can be divided into three distinct approaches: (i) delivery: engineering technological robustness; (ii) survival: improved competitiveness in the gut, and (iii) efficacy: improved therapeutic qualities. During the past two decades, major health benefits of genetically modified probiotics have been demonstrated using animal models. The field has recently moved into the era of human clinical trials which showed biological containment, safety, and tolerability with preliminary data demonstrating positive efficacy in human subjects. The potential of genetically modified probiotics as therapeutic tools for their safe and efficient use in human health will be outlined.

09:40-10:05

GER RIJKERS

Professor in the Biomedical and Life Sciences, University College Roosevelt, The Netherlands

Health Claims and Health Effects of Probiotics: 2 Sides of the Same Coin?

- probiotics are defined as live micro-organisms with a health promoting effect on the host
- a health promoting effect includes treatment of an existing disease or prevention
- for a health claim to be approved, the effect should be demonstrable in a healthy population
- Current legislature limits communication of health effects of probiotics, and indirectly also limits research into these health effects.

10:05-11:15 Morning Refreshments / All Poster Presentations / Scheduled One-to-One Meetings

GUT MICROBIOTA IN HEALTH & DISEASE

TRACK CHAIR: FABIO PICCINI

Co-Founder and Director, Italian Microbiome Project

GUT-BRAIN AXIS

TRACK CHAIR: LAURA STEENBERGEN

Researcher, Leiden University, the Netherlands

PROBIOTICS CONGRESS

TRACK CHAIR: MASSIMO MARZORATI

Business Development Director, ProDigest

11:15-12:05

PANEL DISCUSSION:
THE MICROBIOME AND THE PHARMA INDUSTRY

- Review of where pharma is at with the microbiome
- How have things moved on in the last year?
- Partnering with pharma in the microbiome space
- How far are we from science to products?

CHAIR: ADAM HACKER
Vice President & Head of Vaccines and Microbiome, Global Regulatory Affairs, Janssen

KARIN CONDE-KNAPE
VP Cardiovascular and Metabolism Scientific Innovation, Johnson and Johnson Innovation, UK

KRISTIN WANNERBERGER
Director R&D Alliance Management, Ferring Pharmaceuticals, Switzerland

OLIVER CHAO
Head, Emerging Biomedical Sciences, Sanofi

JAMES BROWN
Director in Computational Biology & GSK Senior Fellow, GSK, USA

12:05-12:20

COMPANY SHOWCASE:
BENJAMIN LELOUVIER

Group Leader, Molecular and Cell Biology, Vaiomer, France

Identifying Blood Microbiota: A Convenient Surrogate Biomarker of Gut Microbiota Dysbiosis

Recent studies have revealed that the blood of healthy humans is not as sterile as previously supposed. In the course of our investigations into the role of tissue microbiota in cardiometabolic diseases we developed specific optimized pipelines of qPCR and 16S targeted metagenomic sequencing to analyse blood bacterial DNA, despite the technical difficulties associated with this sample type. We recently demonstrated that a diversified microbiome exists in blood of healthy donors. This microbiome has most likely an important physiological role and could be implicated in many disorders. We have shown in an extensively phenotyped cohort, for the first time, a relationship between liver fibrosis in patients with severe obesity and both blood bacterial burden and blood microbiota profile. Blood microbiota could provide biomarkers for the early detection of liver fibrosis in patients with severe obesity, which is a major clinical need.

vaiomer

11:15-11:40

NIALL HYLAND

Lecturer In Pharmacology & Faculty, APC Microbiome Institute, University College Cork, Ireland

Mast Cells, Microbes and the Gut-brain Axis

- Host-microbe interactions have gained considerable attention in recent times with regards to their role in various organic disorders and diseases many of which are characterised by alterations in host gastrointestinal physiology and function.
- The mechanisms of action of nonpathogenic bacteria or probiotics on host physiology are less clearly understood.
- In the context of defining the mechanisms of action of probiotics in vitro and ex vivo, the Ussing chamber has proven to be a particularly useful tool used to define molecular targets for microbes and putative probiotics and their interactions with the host.
- Germ-free (GF) animals have also proven an equally valuable tool in interrogating the communication between microbiota and host.

11:40-12:05

VASSILIA THEODOROU

Professor & Team Leader, Neuro-Gastroenterology & Nutrition, INRA, France

Microbiota/Probiotics and the Brain-Gut Axis

The regulation of the brain-gut axis contributes to gut and central nervous system homeostasis. The microbiota has been integrated in the brain-gut axis as a new player. Descending information from the brain modifies gut motility and intestinal barrier function, leading to changes of the commensals habitat, profile and metabolic activity. Conversely, the microbiota can directly or indirectly influence visceral pain and brain neurochemistry. Probiotics also interact with the gut brain-axis. For instance, probiotic prevention of the gut "leakiness" attenuates the hypothalamic pituitary axis (HPA) response to stress and visceral pain. Consequently, the brain-gut axis concept has been extended to the microbiota-gut-brain one. On this basis modulation of the gut microbiota may lead to promising therapeutic strategies in digestive and extra-digestive diseases.

12:05-12:35

ENRIQUE VAZQUEZ

Senior Scientist, Abbott Nutrition

Human Milk Oligosaccharides: Much More than Food for Gut Microbes. Modulators of the Gut-Brain Highway

Human milk is unique regarding the diversity, quantity and complexity of human milk oligosaccharides (HMOs). HMOs exert several benefits in the infant, being probably their prebiotic/bifidogenic activity the most known and referenced. In addition of this potential for shaping the intestinal microbiota, HMOs are also able to modulate the intestinal development, the immune system and even the central nervous system (CNS) function. Our group has published several articles demonstrating that HMOs modulate several neuronal outcomes, enhancing several cognitive skills in rodents. But these benefits of HMOs on CNS are dependent on an adequate gut-brain connection through vagus nerve. Thus, it seems that HMOs are nutrients with proven activity on the gut-brain axis.

11:15-11:40

KIERAN TUOHY

Professor, Fondazione Edmund Mach, Italy

Probiotic reverse engineering – choose your mechanism first then your strain

- Failure to effectively prove cause and effect between taking probiotics and improvements in recognised markers of disease has greatly hindered the acceptability of probiotic health claims.
- One reason for this may be poor probiotic selection. Probiotic strains have not always been selected on the basis of specific health related mechanisms.
- Examples of probiotics first selected for bile salt hydrolase activities or gamma-aminobutyric acid (GABA) production are proving exceptions however, and are showing that rational design of probiotic strains capable of modulating host physiological function is possible.
- This presentation will discuss the merits of probiotic reverse engineering, selecting probiotic strains with very specific phenotypes capable altering target mammalian physiological processes.

11:40-12:05

RIC VAN TOL

Director of Global R&D, Mead Johnson Nutrition, The Netherlands

Gastrointestinal Microbiome Composition and Metabolism Supporting Health and Allergic Disease Risk Reduction

- Gastrointestinal microbiome composition and metabolism is key for adequate health and reduces the risk for (food) allergy development
- Intestinal bacteria can modulate gut immune physiology either directly or through releasing specific metabolites
- Oral probiotics or their mediators can reduce risk of food allergy development

12:05-12:35

MARKUS LEHTINEN

R&D Manager, DuPont Nutrition and Health

Bifidobacterium animalis ssp. lactis B420 and polydextrose in weight management

- The composition of gut microbiota is interlinked with energy balance, but causal evidence between its modulation and body fat mass is still very scarce.
- Probiotics and dietary fibers may offer nutritional means to help in weight management.
- We have conducted a clinical trial on the effects of probiotic Bifidobacterium animalis ssp. lactis 420 (B420) and a dietary fiber, Litesse®Ultra polydextrose, on body fat mass and other parameters related to obesity.

12:20-12:35

COMPANY SHOWCASE:
LISA GAMWELL
Microbiome Product Manager, DNA Genotek

Applying quality engineering principles to enhance reproducibility of longitudinal metagenomics studies

Study designs for longitudinal clinical trials and for validating biospecimen collection/stabilization devices share a surprisingly common architecture.

In this talk we'll discuss the QC practises and metrics we find most helpful to identifying sources of bias in a metagenomics workflow. In particular:

- Practical considerations for establishing 'ground truth', and strategies for measuring small changes over time
- Disentangling cause and effect when comparing longitudinal relative abundance measurements (with 16S or shotgun NGS)
- In silico methods for standardized phenotyping and managing confounding variables

DNA genotek

12:05-12:35

CONTINUED

12:05-12:35

CONTINUED

12:35-12:50

COMPANY SHOWCASE:
MORTEN L. ISAKSEN
CEO, Bio-Me AS

The Future of Gut Microbiome Analysis

In order to meet the demand for the anticipated large volume of gut microbiome analysis in the future, rapid, low-cost and high throughput solutions must be made available. This talk will highlight some of the challenges with existing approaches to gut microbiome analysis, and point towards possible solutions. In addition, some preliminary data from a new test developed by Bio-Me will be presented. The technology will make it possible for the first time to process hundreds of samples in less than a day (from faecal sample to ready report), with high accuracy and resolution (down to species level), and at low cost. Possible applications for this test and how it will influence personalized and precision medicine will be presented.

Bio-Me AS
Personal Microbiome Analysis

12:35-12:50

COMPANY SHOWCASE:
ROBERT P. MOHNEY
Senior Director Metabolon, Inc.

Decoding the (Functional) Microbiome: Metabolomics Illuminates the Apothecaries within Us

Studies highlighting key contributions of our commensal microbiota to health and disease continue to mount; however, how this association can be leveraged to promote human health has only recently begun to be assessed. One fundamental problem is our lack of mechanistic understanding of how microbiota cooperate with their host (and each other) to orchestrate changes in health status. One source of mechanistic data derives from known modes of bacterial function and communication (e.g., metabolites), which may have pharmacological-like effects on the host. Mature technologies offer effective profiling of common biological sample types, making the systematic application of metabolomics to microbiome research remarkably feasible and information rich. Recent examples of how metabolomics have informed analyses of the functional consequences of changing microbiome in health and disease will be discussed.

METABOLON
Where knowing comes to life

12:35-12:50

NO PRESENTATION

12:50-13:50

Lunch / Networking Meetings

SPONSORED BY: Yakult

TRACK CHAIR: ALEX WHITE

Senior Conference Producer, Global Engage, UK

13:50-14:15

JAKOB STOKHOLM

Postdoc, Herlev and Gentofte Hospital, University of Copenhagen, Denmark

The Maturation of the Gut Microbiome and Risk of Childhood Asthma

- Longitudinal description of the development of the gut microbiome in the first year of life in 700 children.
- Maturation of the microbiome
- Associations between microbiome and disease

14:15-14:30

COMPANY SHOWCASE: PATRICK SMITH

Ph.D., Scientist R&D, QIAGEN

Semi-automated low-throughput workflow for microbial analyses of human stool from young and old individuals

The gut microbiota composition changes dramatically throughout ageing and disease. A healthy gut microbiota is typically characterized by large bacterial taxonomic diversity and functional capacity, whereas frailty and ageing are associated with loss of diversity and expansion of more pathogenic bacterial species. However, in order to accurately profile changes in microbial communities, the reproducible isolation of high quality DNA is an important step. We will discuss the development of a semi-automated workflow to profile the gut microbiota of young and old individuals and identify changes in bacterial composition and function that occur with age. This workflow will help to simplify and streamline the DNA extraction process for samples with high inhibitor content and subsequent microbial community analyses.

TRACK CHAIR: JOHAN VAN HYLCKAMA VLIEG

Vice President, Microbiome & Human Health Innovation, Chr. Hanson A/S, Denmark

13:50-14:15

GAËLLE BOUDRY

Team Leader, INRA, France

Programmation of the microbiota-gut-adipose tissue axis by maternal dietary n-6 polyunsaturated fatty acid

- Neonatal gut colonization is influenced by the mother microbiota and by early-life nutrition and can have long-term consequences on health. N-6 polyunsaturated fatty acid (PUFA) consumption has dramatically increased over the last decades, including for pregnant and lactating women.
- Using rats, we have shown that excessive n-6 PUFA maternal consumption during gestation and lactation programs the offspring microbiota later in life.
- Irrespective of their adult diet, adult rats born to n-6 fed dams exhibited dysbiosis, altered gut homeostasis, low grade inflammation and altered lipid metabolism.

14:15-14:30

COMPANY SHOWCASE: ERIC DE LA FORTELLE

Venture Partner, Seventure Partners

Seventure Partners: Assembling a Broad and Diversified Portfolio of Innovative Microbiome Companies

- Seventure is investing 160M€ Health for Life Capital fund and other investment vehicles to build a portfolio of companies in the microbiome field
- The presentation will describe the companies and the circumstances of our investment
- We will also point to areas of future interest

TRACK CHAIR: WILLIAM BAIRD

Director, Global Engage, UK

13:50-14:15

THEOFILOS POUTAHIDIS

Associate Professor, Veterinary Pathology, Aristotle University of Thessaloniki, Greece

Gut bacteria and modern lifestyle disease: lessons from mice

- The immune system status, the metabolic profile and the psychological condition of the host are important determinants of modern lifestyle-associated health risk. Gut bacteria could modulate these determinants towards shaping a systemic chronic disease-resistant status.
- The effects of gut bacteria expand beyond the gastrointestinal tract to include distant tissues and overall health. Using mice we have shown that the probiotic bacterium L. reuteri imparts positive effects on the immune and hormonal profile of the host.
- Mice consuming L. reuteri live longer and resist to obesity and age-associated changes of skeletal muscle, testis and thyroid and thymus glands. They also have luxurius fur coats and heal their skin wounds faster. Importantly, they are resistant not only to intestinal but mammary, liver and lung cancers as well.

14:15-14:45

MARIA SAARELA

Principal Investigator, VTT Technical Research Centre of Finland

Recent developments in the probiotic research and market

Gut microbiota has been associated with almost all aspects of human health and disease. Concomitant with this, the potential application fields of probiotics have also become broader. For example, necrotising enterocolitis, infantile colic, asthma, atopic disease, diabetes, malnutrition, mood/anxiety disorders, and autism spectrum disorders have become associated with microbiome alterations and thus potential targets for probiotic interventions. Active research on interactions between probiotics and the host has provided better understanding of the potential mechanism(s) of probiotic action. It has been suggested that changes in the metabolic activity of the microbiota are more important for probiotic efficacy that changes in microbiota composition. To date, mainly certain robust lactobacilli and bifidobacterial strains have been used as probiotics, however, there is increasing interest in using other bacteria recently recognised to be important for human health. These include for example Faecalibacterium prausnitzii and other members of Ruminococcaceae, Clostridium XIVa cluster bacteria, and Akkermansia spp. The EU health claim regulation has had a major impact on the probiotic food market in the EU. Although the market has continued to grow there has been a noticeable decrease in the variety of probiotic strains used in dairy products. Companies seem to have instead started to use same, technologically robust probiotic strains and discarded their "own" strains.

14:30-14:45

COMPANY SHOWCASE: CHRISTIAN KLEIN

Business Development Associate, Capsugel

enTRinsic™ Drug Delivery Technology: Enabling Oral Delivery of Live biotherapeutic products

enTRinsic™ drug delivery technology was developed to provide enteric delivery of active pharmaceutical ingredients to the upper gastrointestinal tract while guaranteeing 100% gastro-protection, all without the need for functional coatings. The intrinsically enteric properties, which are core to the technology and represent a major breakthrough in drug delivery, are achieved thanks to the enteric polymer composition of the hard capsule shell produced using advanced – yet scalable – manufacturing processes. By eliminating the need for enteric coating, enTRinsic drug delivery enables the oral delivery of a variety of acid and heat sensitive actives including live bio-therapeutics such as microbiomes. An overview of enTRinsic technology, in vitro and human PK results will be evidenced through a case study.

Capsugel

14:30-14:45

SACHA MANN

CEO, Biosys UK Ltd

Oral polyclonal antibodies as targeted gut microbiome modulators

Biosys is harnessing the power of oral polyclonal IgA therapies to modulate gut microbiome and restore host–microbial symbiosis to treat C.difficile infection. These antibodies have specificity for multiple epitopes and can be delivered directly to the site of dysbiosys in the GI tract. They target both the spores and bacteria that cause relapse and recurrence of infection, as well as the toxins that cause clinical symptoms and disease pathologies, eliminating specific pathogens and reducing recolonization across multiple strains. Clinical data in over 100 patients has been published and shows evidence of both efficacy and safety in reducing relapse of CDI. A second mucosal healing program is directed at chitin microparticle products that modulate the immune response and enhance gut health for IBD patients.

14:15-14:45

CONTINUED

14:45-15:15

ALWINE KARDINAAL

Expertise Group Leader Nutrition & Health, NIZO Food Research BV

Integrated Approach for Screening and Substantiation of Ingredients with a Gut Health Benefit

- Relevance of in vitro screening assays for in vivo benefits
- Use of human challenge models to evaluate effects in healthy populations
- Clinically relevant outcomes and mechanistic insights
- How to investigate the role of the small intestinal microbiome: use of a minimally invasive sampling tool
- Integrating information from in vitro and in vivo studies for better predictions in the future

NIZO FOR BETTER FOOD & HEALTH

14:45-15:00

START-UP SHOWCASE/ INVESTOR PITCH: MARIE DRAGO

Founder, Gallinée

Gallinée Skincare – Beauty for the Skin Microbiome

- History of the brand: creation, development
- How to launch a beauty brand talking about bacteria? Crowdfunding, talking to press, buyers and consumers
- Insights, Challenges and how the future looks like

Gallinée is one of the first beauty brand to focus on the skin microbiome. Winner of the 2016 Penrose Innovation Awards and deemed "a paradigm shift in skincare", the brand launch in April 2016 in the UK after a successful crowdfunding campaign. In this presentation, founder Marie Drago will share the journey and the insights in creating the range, and how to talk about bacteria in the conservative world of the beauty industry

15:00-15:15

START-UP SHOWCASE/ INVESTOR PITCH: NAOMI B. ZAK

CEO, MBCure

MBcure. Targeted Modulation of the Human Microbiome

MBcure is aiming to develop bacteriophage-based therapies

14:45-15:15

SANDRINE CLAUS

Associate Professor in Integrative Metabolism, University of Reading, UK

Nutrimetabonomics To Understand Host-Pathogen Response To Antibiotic Treatment

The gut microbiota is now recognized as a fundamental partner for maintaining the host's health status. Normally, the host-microbiota symbiosis results in a healthy metabolic phenotype. However, as the environment changes, our metabolism adapts to maintain homeostasis within an optimal metabolic space, and so do our microbiota. So how does this interplay result in an optimal metabolic state? And how can this be measured? Nutrimetabonomics is a useful tool to assess the metabolic state of the host in response to environmental perturbations. The studies presented here will illustrate how nutrimetabonomics can be used to gain an understanding of the metabolic disruptions triggered by Brachyspira pilosicoli-infection in poultry. We will discuss how a better knowledge of the host metabolic response to a pathogen and antibiotic treatment can aid in the design of new therapeutic alternatives to antibiotics

14:45-15:15

CONTINUED

15:00-15:15

for the treatment and prevention of diseases stemming from dysbiosis of the microbiome. The company's mission is to establish a platform for the rapid identification, validation, preclinical and clinical development of bacteria-specific phage cocktails for targeted microbiome modulation. The phage drug will carry out specific suppression of disease-associated microbiome bacteria demonstrated to cause or exacerbate disease. MBcure benefits from the expertise of its scientific founders, Prof. Rotem Sorek and Dr. Eran Elinav of the nearby Weizmann Institute, and from the advanced infrastructural capabilities in their laboratories, which include high-throughput phage discovery, sequencing, analysis and synthetic biology capabilities as well as a 'germ-free' mouse facility for generation of controlled microbiome-dependent disease models. In addition, MBcure has its own fully equipped bacteriology laboratory and its scientists have developed extensive anaerobic culture, screening, phage characterization and genetic engineering capabilities. The company is financed by a syndicate of Johnson & Johnson Innovation, Takeda Ventures, OrbiMed Israel Partners

14:45-15:15

CONTINUED

15:15-15:45

FRANÇOIS-PIERRE MARTIN

Senior Scientist and Senior Project Leader,
Nestlé Institute of Health Sciences, Switzerland

Deciphering host-gut microbial metabolic interactions in longitudinal studies: a path to explore the role of gut microbiota for personalized nutrition

Over the last few decades, systems biology approaches have been increasingly employed in clinical studies as a research driver to enhance our understanding of the role of genetics, environmental factors and gut microbiota on individual health. From a nutritional perspective we are genuinely interested in the human gut microbiome. A particular focus of our research lies on how dietary macro- and micronutrients are co-metabolized by the human host and its gut microbial population. Yet, due to the higher complexity of metabonomes, and their variability in space and time, plus their subtle response to environmental stimuli such as diet, it is very challenging to generate holistic insights into a gut microbiome at protein and/or metabolite level. Here we will discuss how we study host-microbe co-metabolism in a targeted metabolic profiling approach, with emphasis on bile acids and amino acid metabolism. Through quantifying these molecular species over time, across conditions, before and after interventions, and between individuals, we generate a dynamic and mechanistic insight into human and microbial co-metabolism. In the context of pre-clinical and clinical research, we will be discussing the influence of diet - gut microbiota interactions on host energy metabolism, and the opportunities and challenges in terms of data modelling and integration in longitudinal studies.

15:15-15:30

START-UP SHOWCASE/ INVESTOR PITCH: JISOO PAE

CEO, Genome and Company

The Development of Microbiome based Probiotics in Prevention and Treatment of Obesity

- Genome and Company is developing novel therapeutics for obesity and cancer
- Overview of Microbiome G&C development in obesity
- Brief overview of cancer and Microbiome G&C pipeline and current status, more focus on immunity

15:30-15:45

START-UP SHOWCASE / INVESTOR PITCH: STEPHEN BARRIE

CEO, Biome Pharma

How do we get from "Data" to "Clinically Useful Data"

- What is the most efficient way to understand the relationships between the bacteria, viruses, fungi and protozoa of the human intestinal tract that will lead to clinically relevant and useful interactions?
- Biome Pharma is developing a diagnostic pipeline that will lead to swift therapeutic discovery.
- Will efficient and extremely cost effective RNA sequencing pipeline leapfrog DNA data as the most useful tool?

15:15-15:45

MICK BAILEY

Professor, School of Veterinary Science,
University of Bristol, UK

Probiotics in pigs: their agricultural relevance, and their value as a preclinical model for humans

Pressures from consumers and from legislation have reduced the ability of the agricultural industry to rely on prophylactic or even metaphylactic antibiotics to control infectious and opportunist pathogens, and have resulted in increasing interest in manipulation of the microbiome to reduce susceptibility or economic losses. Increasingly, probiotics, prebiotics and dietary supplements are added to animal diets with the expectation of improved performance and economic return. Experimental studies, including ours, clearly demonstrate the ability of such interventions to affect the pig immune and metabolic systems, and economic performance in specific husbandry systems. However, the value of such additions have often been determined empirically, with relatively limited mechanistic information, such that the benefit may not be generalisable to other husbandry or rearing environments, or provide any useful information in developing the next generation of dietary interventions. Mechanistic studies are, therefore, critically important in understanding the interaction between microbiome, immune and metabolic systems and the impact on animal 'performance' In comparative terms, the pig provides a useful extra data point in extrapolating from mouse to human, particularly given its size and genetic similarity to humans. In addition, pigs are normally kept in a wide range of husbandry environments: from intensive, indoor housing all the way to organic, outdoor systems, and such systems can provide valuable translational information about the impact of environment on microbiome, metabolism and growth.

15:45 Conference Close

Beurs van Berlage,
Conference Centre, Damrak 243,
1012 ZJ, Amsterdam, The Netherlands

Located in the heart of Amsterdam, the historic Beurs van Berlage is a nationally listed building and former stock exchange offering a one-of-a-kind conference experience. A range of accommodation to suit all budgets can be sourced locally. For more information, please contact Scott Taylor at **scott@globalengage.co.uk**

MAKING A POSTER PRESENTATION

Poster presentation sessions will take place in breaks and alongside the other breakout sessions of the conference. Your presentation will be displayed in a dedicated area, with the other accepted posters from industry and academic presenters.

We also issue a poster eBook to all attendees with your full abstract in and can share your poster as a PDF after the meeting if you desire (optional).

Whether looking for funding, employment opportunities or simply wanting to share your work with a like-minded and focused group, these are an excellent way to join the heart of this congress.

In order to present a poster at the forum you need to be registered as a delegate. Please note that there is limited space available and poster space is assigned on a first come first served basis (subject to checks and successful registration).

We charge an admin fee of €100 to industry delegates to present, that goes towards the shared cost of providing the poster presentation area and display boards, guides etc. This fee is waived for those representing academic institutions and not for profit organisations.

Win an iPad Mini

How?

To be entered into the draw, take a picture of yourself by the Global Engage microbiome banner at the registration desk and share on **twitter** or **LinkedIn** using **BOTH** hashtags **#microbiome AND #GEMB17**

The Winner

The winner will be drawn during lunch on Day 2, and announced during the afternoon sessions.

DON'T DELAY, BOOK YOUR PLACE TODAY!

Places are limited and are based on a first come, first served basis so to avoid disappointment contact us today to reserve your place at Global Engage's Microbiome R&D and Business Collaboration Congress Europe 2017 on the 3rd-4th April.

PHONE BOOKING

+44 (0) 1865 849841

Our conference team will make all the necessary arrangements.

ONLINE BOOKING

Visit the website to book your place with credit card payment or an invoice request.

www.global-engage.com/event/microbiota/

THE CONGRESS PACKAGE INCLUDES:

All Conference Sessions
Lunches and Refreshments
Access to Exhibition Room
Networking Drinks Reception
Conference Workbook
E-Document Pack

HOTEL ACCOMMODATION

Hotel accommodation will be available at a group rate.

FREE NEWSLETTER

For updates on the Microbiome R&D and Business Collaboration Congress Europe 2017, plus free resources and reports, as and when our speakers authorise their release dates, check for updates at:

www.global-engage.com/event/microbiota/

UNABLE TO MAKE THE DATES?

Why not sign up for either our Asia or US meeting

Asia: 1-2 March 2017 – Hong Kong **www.global-engage.com/event/microbiome-asia/**

USA: 2-3 November 2017 – San Diego **www.global-engage.com/event/microbiome/**

SPONSORSHIP AND EXHIBITION OPPORTUNITIES AVAILABLE

For more details contact Gavin Hambrook:

sponsorship@globalengage.co.uk

Tel **+44 (0) 1865 849841**

T: +44 (0) 1865 849841
E: info@globalengage.co.uk
www.global-engage.com

Global Engage Ltd., The Kidlington Centre, Kidlington, Oxford, OX5 2DL, United Kingdom

Follow Us