

# 5<sup>TH</sup> MICROBIOME R&D & BUSINESS COLLABORATION CONGRESS 4<sup>TH</sup> PROBIOTICS CONGRESS: ASIA

# **REGENT TAIPEI, TAIWAN** - 6-7 March 2019-



**Co-Hosts** 











Global Engage is pleased to announce, as part of their worldwide microbiome series, the 5<sup>th</sup> **Microbiome R&D and Business Collaboration Congress** and co-located 4<sup>th</sup> **Probiotics Congress** which will be held on March 6-7, 2019 at the Regent Taipei, Taiwan. Co-hosted with the National Central University and National Chiao Tung University (GLORIA) of Taiwan, the congresses will bring together industry and academic delegates to discuss the latest microbiome research, the development of partnerships and commercial collaborations in this area and the expected growth of product pipelines.

Recent microbiome research has demonstrated the important role that communities of microorganisms play on human body. This area of research, associated with immunity and behavioural traits, is paramount in maintaining our health and keeping us away from disease. With numerous pre-clinical and clinical studies being conducted, microbiome is transitioning from a descriptive to a more mechanistic science. It is inevitable that microbiome is a promising prospect to improve human health, as it enables us to step forward and manipulate microbiota in a variety of ways. With the growing interest in the area, research experts and industry players are working together towards bringing microbiome discoveries to the market, making it an unprecedented investment opportunity alongside large-scale collaborations underway and sequencing data placed in the public domain. Due to this reason, microbiome is now set to make waves in the science and medical world as an essential prerequisite for future rational interventions.

Attracting over 300 delegates, the co-located meetings will promote comprehensive understanding and reciprocal benefits of the latest scientific and business developments in microbiome and probiotics. The 2-day interactive meeting will highlight cutting edge research and business case studies through expert presentations, and panel discussions exploring key issues in the subject area, an exhibition filled with solution providers showcasing their products and solutions, as well as networking breaks to promote interactions and business reach with fellow peers.

Having a diverged group of professionals interested in microbiome and probiotics, both scientific and industry talks will take place at this event. Topic areas to be addressed include microbiome in health and disease, skin microbiome, probiotics and brain health amongst others as well as the regulatory issues associated with these areas of research. It is hoped that the meetings will further develop the microbiome and probiotics research, as well as foster more collaborations and commercialisation of the areas in Asia.



JACK GILBERT Faculty Director, The Microbiome Center and Professor, Department of Surgery, University of Chicago, USA | Founder, The Earth Microbiome Project and Co-Founder, American Gut Project



JOHAN VAN HYLCKAMA VLIEG Vice President Microbiome & Human Health Innovation, Chr. Hanssen A/S, Germany



NICOLE ROY Principal Scientist and Science Team Leader, AgResearch, New Zealand



MING-JU CHEN Professor, Department of Animal Science and Technology, National Taiwan University, Taiwan and President, Taiwan Association of Lactic Acid Bacteria



JACQUES RAVEL Professor, Microbiology and Immunology and Associate Director for Genomics, Institute for Genome Sciences, University of Maryland School of Medicine, USA



YASUHIRO KOGA President, Japanese Society for Probiotic Science



MARGARET MORRIS Professor and Head of Pharmacology, University of New South Wales, Australia



HANNA SIDJABAT Honorary Fellow and Chief Investigator, University of Queensland Centre for Clinical Research, Australia

# **MICROBIOME DISCOVERIES**

- Latest updates on the microbiome movement in Asia and across the globe
- Tools and techniques for studying microbiome
  - Metagenomics
  - Sequencing method / bioinformatics

# **MICROBIOME IN HEALTH AND DISEASE**

- Relationship between obesity and metabolic disease
- Inflammation
- Gut-brain axis
- Enteric infection/microbiome pathogen interactions
- Case studies such as IBD, diabetes, obesity, colitis
- Antibiotics resistance
- · Infant gut microbiome

# **MICROBIOME-BASED THERAPIES**

- Drug delivery
- Faecal microbiome transplant
- Biomarker / Clinical Development

# **OUTSIDE THE GUT**

- Skin microbiome
  - · Strategies and tools for studying skin microbiome
  - Case studies on acne, eczema, atopic dermatitis,
  - wound health & cosmetic applications
- Women's health
  - Host-interactions, vaginal microbiome, preterm birth
    and pregnancy progression
- Gut-brain axis
- Oral and respiratory microbiome research

# COMMERCIALISATION OF MICROBIOME AND PROBIOTICS

- Developing business relationships between academia & pharma
- Collaborations/partnerships the global scope of microbiome research/structuring successful collaborations
- Bringing live microbial products to market IP, regulation, GMP
- Pharmaceutical involvement and therapeutic development
- · Probiotic strain identification, designation and safety

# **PROBIOTICS R&D**

- Strain discovery
- Gut-pathogen interactions
- Role of probiotics in IBS management
- Antibiotic exposure & multidrug resistance
- Role of probiotics as anti-diarrhoeal agents
- Efficacy and effectiveness of different strains
- Biocontrol of gut pathogens with probiotics
- Probiotics and the gut-brain axis
- Probiotics and skin
- Probiotics and allergy / disease
- Food and fermentation

# PAEDIATRICS

- Milk-oriented microbiota
- Atopic eczema
- · Probiotic and trial safety in infant populations
- · A role for probiotics in malnutrition and the developing world

# WOMEN'S HEALTH

- · Reducing the recurrence of urogenital infections in women
- Probiotics in bacterial vaginosis
- Vaginal microbiome

# **REGULATION AND PRODUCT DEVELOPMENT**

- · Examining the probiotic market in the Asia-Pacific region
- Safety and QC
- · Strain identification, designation and safety
- IP, regulation and GMP perspective
- Clinical trials and health claim substantiation









# JACK GILBERT

Faculty Director, The Microbiome Center and Professor, Department of Surgery, University of Chicago, USA | Founder, The Earth Microbiome Project and Co-Founder, American Gut Project



# MARK MORRISON Chair and Professor, Microbial Biology and Metagonics,

University of Queensland Diamantina Institute, Australia



**NICOLE ROY** Principal Scientist and Science Team Leader, AgResearch, New Zealand



## **BAOLI ZHU** Principal investigator and Director of Microbial Genome Research Center, The Institute

of Microbiology and Chinese

Academy of Sciences, China



CÉCILE CLAVAUD Project Leader, Research and Innovation Skin Microbiome Unit, L'Oreal, France



YUNN HWEN GAN Associate Professor, National University of Singapore, Singapore



**JQ LIU** Principal Scientist, Procter & Gamble, Singapore



TZEHAU LAM Senior Scientist, Procter & Gamble, Singapore







MARGARET MORRIS Professor and Head of Pharmacology, University of New South Wales, Australia



LARRY WEISS CEO and Founder, Persona Biome



**YI-BING LIN** Vice Chancellor, University System of Taiwan, National Chiao-Tung University, Taiwan



















Dental Science, Japan



# **JACQUES RAVEL**

Professor, Microbiology and Immunology and Associate Director for Genomics, Institute for Genome Sciences, University of Maryland School of Medicine, USA

# HAZEL MITCHELL

Professor, University of New South Wales, Australia

# SHAHRUL RAZID SARBINI

Dean, Faculty of Agricultural and Food Sciences, Universiti Putra Malaysia

# NIRANJAN NAGARAJAN Senior Group Leader, Genome Institute of Singapore, Singapore





WAYNE YOUNG Senior Scientist, AgResearch,

Dermatology, Erasmus University

**JAMES CHU** CEO of GLORIA, National Central University, Taiwan

# JOHN COMMON Principal Investigator, Skin Research Institute of Singapore (SRIS), Singapore

### YOSHIHISA YAMASHITA

Professor and Chairperson, Section of Preventive and Public Health Dentistry, Division of Oral Health, Growth and Development, Kyushu University Faculty of





# **CHUN-MING ERIC** HUANG

Chair Professor, Department of Biomedical Sciences and Engineering, National Central University, Taiwan

# **ELIANA MARINO MORENO** Principal Research Fellow and



# WEI-LI WU (Chair)

Assistant Professor, Department of Physiology, College of Medicine, National Cheng Kung University, Taiwan



**UMA DEVI A/P** PALANISAMY (Chair) Associate Professor, Monash University, Malaysia







SENIOR REPRESENTATIVE DuPont



# SENIOR REPRESENTATIVE Health GeneTech

SENIOR REPRESENTATIVE DNAgenotek DNA Genotek

> **MORTEN ISAKSEN** Founder and CEO, Bio-Me, Norway



Deputy Minister, Ministry of Science and Technology Distinguished Professor, Institute of Oral Medicine, National Cheng Kung University College of Medicine National Cheng Kung University, Taiwan









# New Zealand

Head Residency program & Vice Chair, Department of Medical Center, Netherlands





**ARTHUR OUWEHAND** Technical Fellow and Research Manager, Global Health & Nutrition Sciences, DuPont Nutrition & Health, Finland



**NAGENDRA SHAH** Professor, Functional Food, Hong Kong University, Hong Kong



JOHAN VAN HYLCKAMA VLIEG Vice President Microbiome & Human Health Innovation, Chr. Hanssen A/S, Germany



**MING-JU CHEN** Professor, Department of Animal Science and Technology, National Taiwan University, Taiwan



**YING-CHIEH TSAI** Professor, Institute of Biochemistry and Molecular Biology, National Yang-Ming University, Taiwan



HANNA SIDJABAT Honorary Fellow and Chief











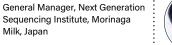




**YASUHIRO KOGA** President, Japanese Society for

**Probiotic Science** 

# **JIN-ZHONG XIAO**



Milk, Japan

**CHERI CHU** Senior Research Manager, Unilever Discover Shanghai

# **PATRICIA CONWAY** Visiting Professor, Nanyang



# REBECCA **SLYKERMAN**

Singapore

Clinical Neuropsychologist and Senior Research Fellow, University of Auckland, New Zealand

# **TOH MINGZHAN**

Research Fellow, Food Science & Technology Programme, Department of Chemistry, National



# LEE YEONG YEH

Professor of Medicine & Consultant of Gastroenterology, Hepatology & Internal Medicine, Universiti Sains Malaysia

# **JIN-SENG LIN**

Director, Culture Collection and Research Institute Synbio Tech Inc., Taiwan

**HUE TRAN HORNIG-DO** 

Scientific Communication &

Biotech, Germany

Marketing Manager Jennewein



# WILLIAM WEI-LIAN HUNG

Associate Director and Head of Probiotics Research Center, Innovation Center, Inner Mongolia Yili Industrial Group Co. Ltd., China





08:55-09:00

09:00-09:35

Registration & Refreshme

# MICROBIOME

Global Engage Welcome Address and Morning Chair's Opening Remarks:



# KEYNOTE PRESENTATION: JACK GILBERT

Faculty Director, The Microbiome Center and Professor, Department of Surgery, University of Chicago, USA/ Founder, The Earth Microbiome Project and Co-Founder, American Gut Project

Invisible Influence: The Microbiome and Human Health The human microbiome is quickly being recognized as a dynamic part of the human ecosystem, and research is starting to demonstrate that using ecology to understand this ecosystem has profound benefits for patient wellness. The immune system controls our interaction with the microbial world, and yet the microbial communities in our bodies are central to modulating the immune response. Changes in the human microbiome have substantial influence on atopy, neurological disorders, metabolic disorders, and a range of complex conditions and disease states. We will discuss evidence of these mechanisms of interaction and how we have started to disturb the delicate balance of the immune-microbe equilibrium, impacting the development and function of our immune systems. Central to this disturbance is the distance we have placed between our children and the microbial world, which has been demonstrated to have a substantial influence on their physiological, immunological, neurological and even endocrinological development. Applying new strategies to identify how the microbial ecosystem correlates with diseases states and treatment efficacy through Microbiome-Wide Association Studies (MWAS) is altering the trajectory of precision medicine, and providing a new framework for facilitating patient care.



# KEYNOTE PRESENTATION: DAR-BIN SHIEH

Deputy Minister, Ministry of Science and Technology Distinguished Professor, Institute of Oral Medicine, National Cheng Kung University College of Medicine National Cheng Kung University, Taiwan

Nano innovations in the emerging microbiomics



10:35-10:45

SOLUTION PROVIDER PRESENTATION: SENIOR REPRESENTATIVE Winclove Title TBC

10 MINUTE OPENING FROM THE TAIWANESE MINISTRY:

Morning Refreshments / Odd-Numbered Poster Presentations / One-to-One Meetings

# PROBIOTICS

Global Engage Welcome Address and Morning Chair's Opening Remarks: Rebecca Slykerman, Clinical Neuropsychologist and Senior Research Fellow, University of Auckland, New Zealand



08:55-09:00

09:00-09:35

09:35-10:05

10:05-10:35

# KEYNOTE PRESENTATION: CHUN-MING ERIC HUANG

Chair Professor, Department of Biomedical Sciences and Engineering, National Central University, Taiwan **Title TBC** 



# JOHAN VAN HYLCKAMA VLIEG

Vice President, Microbiome & Human Health Innovation, Chr. Hanssen A/S, Germany Microbes matter more than ever – Innovation in probiotics in the microbiome era

# SPONSORED PRESENTATION

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# DAY 1 WEDNESDAY 6TH MARCH 2019

# MICROBIOME IN HEALTH & DISEASES

**Chair: Wei-Li Wu**, Assistant Professor, Department of Physiology, College of Medicine, National Cheng Kung University, Taiwan



# MARK MORRISON

Chair and Professor, Microbial Biology and Metagonics, University of Queensland

Diamantina Institute, Australia Title TBC



# YI-BING LIN

Vice Chancellor, University System of Taiwan, National Chiao Tung University, Taiwan Application of Artificial

Intelligence to Earth Microbiome

12:15-

-12:15

# MICROBIOME R&D

Chair: Hok Bing Thio, Head Residency program & Vice Chair, Department of Dermatology, Erasmus University Medical Center, Netherlands



# NICOLE ROY Principal Scientist and Science Team Leader,

AgResearch, New Zealand The COMFORT cohort:

# Identifying biomarkers for gut-brain axis relevant to functional gut disorders

The links between food, gut function and comfort, and brain function are at the forefront of nutritional research. Irritable Bowel Syndrome (IBS) is a functional gut disorder characterised by chronic or recurrent abdominal discomfort mostly associated with changes in gut habit in the absence of a detectable organic cause. Several central and peripheral mechanisms initiate perturbations in gut motor and sensory functions and lead to IBS symptoms. Peripheral molecules, and associated pathway dysfunctions and altered tissue metabolism, are important to better define functional gut disorders. In a case-control study, individuals with functional gut symptoms (cases) or asymptomatic (controls) undergoing colonoscopy were recruited. Demographics, symptoms score, psychological score and dietary records were recorded. Metabolomics of biological samples, shotgun metagenomics sequencing of faecal samples and quantification of plasma neurotransmitters and bacterial metabolites were carried out to identify microbial and host factors and gain mechanistic insights into functional gut disorders.



HAZEL MITCHELL Professor, University of New South Wales, Australia Title TBC

# R&D - FOOD

# Chair: Rebecca Slykerman,

Clinical Neuropsychologist and Senior Research Fellow, University of Auckland, New Zealand

# **YING-CHIEH TSAI**



Professor, Institute of Biochemistry and Molecular Biology, National Yang-Ming University, Taiwan

Microbiota-Gut-Brain Axis, Psychobiotics and Neuropsychiatric Disorders

Psychobiotics, a class of probiotics with psychotropic activities via the gut-brain axis. Lactobacillus plantarum PS128 is a novel psychobiotic, which normalized depression-like behaviors in early life-stressed mice and improved locomotion in Parkinson's diseaselike mice. In a 4-week, randomized, double-blind, placebo-controlled study investigated the effects of PS128 with autism spectrum disorder (n = 72), PS128 appeared to reduce scores for hyperactivity/impulsivity, opposition/ defiance, anxiety, problems related to thoughts, and rule-breaking behaviors etc., whereas the placebo exerted insignificant effects. These results showed that PS128 is a feasible and natural intervention for alleviating symptoms of neuropsychiatric disorders.

11:50-12:15



12:15-12:40

# ARTHUR OUWEHAND

Technical Fellow and Research Manager, Global Health & Nutrition Sciences,

DuPont Nutrition & Health, Finland **Dietary tools for shaping the gut microbiome** 

There is a substantial pool of data demonstrating effects of a range of dietary components on composition of the gut microbiome. This presentation will elaborate on:

 The effects of different dietary proteins on the composition of gut microbiota, as well as reported health benefits of the such proteins.

- The role of human milk oligosaccharides in establishing an optimal microbiota early on in life, and
- Probiotics, which may deliver significant benefits even in the presence of a wellestablished gut microbiome.

11:50-12:15

# DAY 1 WEDNESDAY 6<sup>TH</sup> MARCH 2019

SOLUTION

PROVIDER

**HUE TRAN** 

Scientific

Communication & Marketing Manager

(HMOs) Novel food ingredients as

Human milk oligosaccharides (HMOs) constitute the third largest component

of breast milk and are unique to humans

in concentration and structural diversity.

HMOs possess several physiological

effects; they confer protection against

prebiotics for the development of the

infant microbiome. Today, it is widely

recognized that the establishment of

a healthy microbiome is key for the

development of an infant. Failure to

support a natural or healthy microbiome

development. HMOs are now available as

R&D - FOOD & DISEASES

Fennewein

may potentially lead to obesity, autism

or allergy development besides other current issues in infant health and

infectious diseases and act as

Jennewein Biotech, Germany Human Milk Oligosaccharides

old as mankind

12:40-13:10

**HORNIG-DO** 

**PRESENTATION:** 



PROVIDER **PRESENTATION:** NIKI AS LARSSON Research Director,

SOLUTION

Probi AB, Sweden Probi Osteo® protects against bone

loss at lumbar spine in healthy early postmenopausal women In a recently conducted clinical study, Probi Osteo®, a combination of

12:40-13:10

three probiotic bacteria from Probi, was shown to reduce the bone loss at lumbar spine in a population of early post-menopausal women. Bone health was measured as bone mineral density at lumbar spine by dual energy X-ray absorptiometry. It was shown that intake of the probiotic product for 12 months resulted in significantly less bone loss as compared to placebo (p<0.05). The difference between the groups was even more prominent in women with osteopenia and those with less than 6 years from the start of menopause.



12:40-13:10

4:10-14:35

15:00

13:10-14:10 Luncheon / Poster Presentations / One-to-One Meetings

# MICROBIOME IN HEALTH & DISEASES



**BAOLI ZHU** Principal investigator and Director of Microbial Genome

Research Center, The Institute of Microbiology and Chinese Academy of Sciences, China **Title TBC** 

# YUNN HWEN GAN

Associate Professor, National University of Singapore, Singapore Factors affecting

gut colonization and pathogenesis of hypervirulent Klebsiella pneumoniae, the causative agent of liver abscess disease Hypervirulent Klebsiella pneumoniae is an emerging cause of community-

acquired pyogenic liver abscess in

parts of Asia such as South Korea, Singapore, Taiwan and Hong Kong. Hypervirulent isolates are generally hypermucoviscous with the possession of a large virulent plasmid encoding rmpA and iron siderophores such as aerobactin. In Singapore and many parts of the world, K1 and K2 capsular types are the predominant hypervirulent isolates. In Klebsiella induced liver abscess (KLA), colonization by the bacteria is believed to precede translocation from the intestines to the liver. However, factors which predispose and facilitate the colonisation in the gut are not clearly defined. In our

# SKIN MICROBIOME

SPONSORED PRESENTATION

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Email: reuben@global-engage.com

Tel: +603 2117 5193

# NIRANJAN NAGARAJAN

Genome Institute of

Singapore, A\*STAR,

Project Leader, Research

and Innovation Skin

Microbiome Unit.

L'Oreal, France

Title TBC

Skin microbiome has positive impact on

as innate immune response modulation

keratinocytes and innate immune system,

stimulating the secretion of antimicrobial

several aspects of human health, such

and protection against pathogens.

Microorganisms interact with host

peptides, free fatty acids, cytokines

and chemokines, which might lead to

adaptive immune responses. The skin

microbiota contribute also to reinforce

the skin barrier function (tight junctions,

elicitation of antimicrobial peptides) and

repair. Thus it is essential to understand

how its disequilibrium contributes to skin

conditions as for example scalp condition.

scalp conditions, affecting approximately

half of adult population worldwide. This

inflammatory chronic disorder is related

to skin barrier disruption, epidermal

Dandruff is one of the most common

Singapore

CÉCILE

CLAVAUD

**Skin Microbiome and Eczema** 

Senior Group Leader

# and Associate Director,

14:35-15:00



ingredients for infant

and general nutrition.

CONWAY Visitina Professor, Nanyang Technology University (NTU), Singapore



# NAGENDRA SHAH

Professor, Functional Food, Hong Kong University, Hong Kong **Challenges of** 

synthesizing gamma-aminobutyric acid (GABA) in milk by a novel strain of Lactobacillus brevis NPS-QW-145 isolated from Korean kimchi

In this study, several GABA-producing LAB isolates have been isolated from naturally fermented foods such as Korean kimchi. Previous screening methods are time-consuming and inefficient. In the present study, we have developed a novel screening and identification method for GABAproducing LAB from Korean kimchi. Acid treatment was applied to screening procedure to obtain acidtolerant LAB isolates, and then a simple identification of GABA-producing LAB based on release of gas by these bacteria has been developed. The amount of GABA produced by LAB isolates at various monosodium glutamate (MSG) concentrations

oral infection mouse model with a K1 capsular type, hypervirulent K. pneumoniae, we examine the role of probiotics administration after antibiotics treatment, as well as the role of capsule and fucose usage for efficient gut colonization. I shall discuss our results on each of these aspects as well as other factors that could contribute to the ability of the bacteria to establish an intestinal niche.

14:35-15:00

15:00-15:25



# CHRISTOPHE LAY

Senior Scientist, Gut Microbiota, Danone Nutricia Research, Singapore

# Early life nutrition and its relevance in the first 1,000 days: A lifelong microbial journey perspective

The human gut microbiome is transmitted from one generation to the next. This transgenerational microbial inheritance occurs during pregnancy, during birth and during breastfeeding. Such vertical transmission contributes to educate our immature immune, metabolic and neurocognitive systems during foetal and early life, highlighting therefore the role of the microbiome in health and diseases. The first 1000 days of life is recognized as an important window to nurture child health and development, and increasing body of evidence indicate that a compromised microbiome is a risk factor for the development of non-communicable diseases. Nutritional intervention could be harnessed as a mean to reduce the disease risk associated with a compromised microbiome

# 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 nonlesional 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 disorder, establishing steps toward a broader view of scalp health and the role of the microbiome in the symptom development.

-15:00

# JQ LIU

Principal Scientist, Procter & Gamble, Singapore

# TZEHAU LAM



Scientist, Procter & Gamble, Singapore **Metagenomics** as a key tool for understanding the microbial basis of body odor in teenagers and kids

Even though human sweat is odorless, bacterial growth and decomposition of specific odor precursors in it is believed to give rise to body odor in humans. While mechanisms of odor generation have been widely studied in adults, little is known for teenagers and kids who have distinct sweat composition from immature apocrine and sebaceous glands, but are arguably more susceptible to the social and psychological impact of malodor. We integrated information from whole-microbiome analysis of multiple skin and multiple time points to perform the largest metagenomewide association study to date on malodor. Correlations between odor intensity and the relative abundance of specific bacteria and the associated metabolic pathway will be presented. The results showcase the power of skin metagenomics to study hostmicrobial co-metabolic interactions, identifying distinct pathways for odor generation from sweat in kids and teenagers, and highlighting key enzymatic targets for intervention.

# DAY 1 WEDNESDAY 6<sup>TH</sup> MARCH 2019

and incubation time in MRS medium was quantified by HPLC. Genetic identification of high GABA-producing LAB was carried out by both 16S rRNA gene and glutamate decarboxylase gene. Nine potential GABA-producing LAB isolates were selected by observing gas release during fermentation. The conversion ability of MSG into GABA for all nine LAB isolates was 100% (supplementation level 10 g/L MSG, incubation time 24 h), over 80% (supplementation level 30 g/L MSG, incubation 48 h), over 60% (supplementation level 50 g/L MSG, incubation time 72 h) and over 50% (supplementation level 70 g/L MSG, incubation time 72 h). These nine LAB isolates were genetically identified as Lactobacillus brevis by 16S rRNA gene and confirmed by glutamate decarboxylase gene.

# **TOH MINGZHAN**



14:35-15:00

15:00-15:25

Research Fellow, Food Science & Technology Programme, Department of Chemistry, National University of Singapore

# Interactions between probiotic bacteria and yeasts: Potential applications in probiotic foods The health-promoting properties

conferred by probiotics are contingent on the number of live microorganisms present in their delivery system at the point of consumption. As such, it is crucial that probiotic food products contain high levels of viable probiotic cells after manufacturing, and that adequate amounts are maintained throughout the distribution chain until it reaches the consumers. Various intrinsic and extrinsic factors can negatively influence the survival of probiotics in foods during production and storage, thereby diminishing the efficacy of the beneficial microorganisms. Recent studies have demonstrated that the co-existence of veast and probiotic bacteria could enhance the viability of the latter under elevated temperature and acidic conditions. Therefore, the use of yeasts as an adjunct culture in probiotic foods could potentially improve the functional properties of these products. In this presentation, the effect of yeasts on the growth of probiotic bacteria in different food matrices, and their survival at low pH conditions will be discussed. In addition, the implications of mixed yeast-bacteria fermentation on the organoleptic qualities of foods will also be covered.

# DAY 1 WEDNESDAY 6<sup>TH</sup> MARCH 2019



PROVIDER PRESENTATION: SENIOR REPRESENTATIVE

SOLUTION

Health GeneTech Title TBC	15:25-15:40	H an attaosotri v Filluori
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		r ł



PROVIDER **PRESENTATION:** MORTEN ISAKSEN Founder and CEO

SOLUTION

# Bio-Me, Norway Rapid and detailed analysis of the microbiome

Bio-Me have developed - in collaboration with Thermo Fisher Scientific - a new platform for rapid, high throughput, low cost and detailed analysis of the microbiome. Precision Microbiome Profiling (PMP) allows analysis of hundreds of samples down to species and strain level in less than a day. Bio-Me has recently conducted a demonstration study, which shows that species-level detection is necessary in order to detect lifestyle changes, and that daily variations at species level requires several timepoints for shaping in order to get an accurate picture of what is happening in the microbiome. PMP opens up for easy access to larger studies with multiple timepoints, leading to better documentation and understanding of the variations and contribution of the microbiome on **Bio-Me** health and disease.

15:40-16:40 Afternoon Refreshments / Even-Numbered Poster Presentations / One-to-One Meetings

7:05

# **ROUNDTABLE DISCUSSIONS:**



# Table 2: Metagenomic data analysis NIRANJAN NAGARAJAN

Senior Group Leader and Associate Director, Genome Institute of Singapore, A\*STAR, Singapore

# Table 3: Therapeutics 16:40-17:05

Table 4: Investment & VC



Table 5: Academicindustry collaboration JAMES CHU CEO of GLORIA, National Central University, Taiwan

WAYNE YOUNG

Senior Scientist.

Zealand

AgResearch, New

KARL FRASER

Senior Scientist,

AaResearch,

New Zealand

Title TBC



Singapore Skin microbiome signatures in health and disease correlate with host

# immunity and microbial virulence The skin is a challenging ecosystem to study meta-omics due to the low amount of biomass that can be recovered, which limits downstream techniques that are currently feasible on human subjects. We have recently been using metagenomics to investigate microbial communities present on the skin of atopic dermatitis patients to better understand shifts in community diversity and microbial functional characteristics. We can identify skin microbiome dermotypes that stratify groups of AD patients and observed that these groups correlate with host immunity and microbial virulence.



**HOK BING THIO** Head Residency

# program & Vice Chair, Department of Dermatology, Erasmus University Medical Center, Netherlands

Microbiome, Immune System and **Psoriasis** 

Psoriasis is a chronic immunemediated inflammatory skin disease that affects about 2% of the world's population. It arises in genetically



# **ROUNDTABLE DISCUSSIONS:**





16:40-17:05

17:05-17:35

# diseases REBECCA **SLYKERMAN**

Clinical Neuropsychologist and Senior Research Fellow, University of Auckland, New Zealand

Table 2:	Strain identification			
Table 3:	Business development &			
	regulatory approach			
Table 4:	Product formulation and delivery			

Table 5: Academic-industry collaboration



# JIN-SENG LIN

Director, Culture Collection and Research Institute, SYNBIO TECH INC., Taiwan Microbiome,

**Probiotics and Exercise Performance** The human gut harbors a vast array of microorganisms that significantly affect host nutrition, metabolic function, gut development, and maturation of the immune system and epithelial cells. Recent studies also shown that

# DAY 1 WEDNESDAY 6<sup>TH</sup> MARCH 2019

17:05-17:35

predisposed individuals. Both the skin and the gut microbiome influence the development and function of immune system. Studies on the cutaneous microbiome show a trend toward an increased relative abundance of Streptococcus and a decreased level of Propionibacterium in patients with psoriasis compared to healthy controls. In the gut microbiome, the ratio of Faecalibacterium prausnitzii and Escherichia Coli (F:E index) was perturbed in psoriatic individuals compared to healthy controls. Modulating the gut and skin microbiota can be beneficial in psoriasis.

gut microbiota may have a key role in controlling the oxidative stress and inflammatory responses as well as improving metabolism and energy expenditure during intense exercise. Then modifying the microbiota through the use of probiotics could be a promising tool to improve exercise performance and energy availability. In this study we examined the effects of L. plantarum TWK10 (LP10) supplementation on exercise performance, physical fatigue, and gut microbial profile, and the data showed that LP10 significantly decreased final body weight and increased relative muscle weight (%). LP10 supplementation dose-dependently increased grip strength and endurance swimming time and decreased levels of serum lactate ammonia, creatine kinase and glucose after acute exercise challenge. Long-term supplementation with LP10 may increase muscle mass, enhance energy harvesting, and have health-promotion, performance improvement and anti-fatigue effects.

17:05-17:35

17:35

End of Day 1 / Networking Drinks Reception

17:05-

### 08:30-08:55 MICROBIOME PROBIOTICS Morning Chair's Opening Remarks: Wei-Li Wu, Morning Chair's Opening Remarks: Lee Yeong Assistant Professor, Department of Physiology, Yeh, Professor of Medicine & Consultant of 08:55-09:00 08:55-09:00 College of Medicine, National Cheng Kung Gastroenterology, Hepatology & Internal Medicine, University, Taiwan Universiti Sains Malaysia **KEYNOTE PRESENTATION: KEYNOTE PRESENTATION:** JUN WANG (Reserved) **YASUHIRO KOGA** CEO, iCarbonX, China President, Japanese Society for Probiotic Science **Title TBC** Prevention of periodontal diseases by an oral probiotic strain, Lactobacillus salivarius TI2711 (LS1) 09:00-The susceptibility of the host, the presence of pathogenic bacteria 09:00-09:30 and the absence of "beneficial bacteria" are the main etiological -09:30 factors of periodontal diseases. We have isolated Lactobacillus salivarius TI2711 (LS1) as an oral probiotic strain. Porphyromonas gingivalis is considered a major pathogenic bacterium causing periodontal diseases. LS1 completely killed P. gingivalis in a coculture system at an input ratio of one to one-million. In a clinical study where subjects were daily administered 2x109 CFU LS1 for 4 weeks, the number of P. gingivalis in the subgingival plaque decreased to about one-tenth after 4-week-treatment. Invitation Out JIN-ZHONG XIAO Title TBC Director, Next Generation Sequencing Institute, Morinaga Milk, Japan Insight into the reason of being of Bifidobacterium in human gut Bifidobacterium is one of the major members 09:30-09:30-10:00 of the human intestinal microbiota which comprises thousands of bacterial species. The genus Bifidobacterium has been known -10:00 to contain > 60 species/subspecies. Some of these bifidobacteria species are typical inhabitants of the human gut (designated as human-residential bifidobacteria, HRB) whereas others naturally colonise the guts of other animals (designated as non-HRB). This presentation will make some insight into the reason of being (how and why) of Bifidobacterium inhabiting the human gut, based on our new findings from genotypic and physiological studies. SPONSORED PRESENTATION SOLUTION PROVIDER 10:00-10:30 10:00-10:30 **PRESENTATION:** SENIOR REPRESENTATIVE For sponsorship opportunities contact QUPOND Email: reuben@global-engage.com DuPont Tel: +603 2117 5193 **Title TBC** 10:30-11:30 Morning Refreshments / Poster Presentations / One-to-One Meetings PANEL DISCUSSIONS: PANEL DISCUSSIONS: A Step to Commercialisation: Building a Microbiome Towards Preventive Measures: Exploring the Current Market Network between Academics and Industry for Microbiome Trends and Regulatory Approach on Probiotics Use in Asia 11:30-12:05 **Discovery Efforts** 11:30-12:05 JACK GILBERT Faculty Director, The Microbiome Center and Professor, Department of Surgery, University of Chicago, USA / Founder, The Earth Microbiome Project and Co-Founder, American Gut Project MICROBIOME AND DIET MICROBIOME OUTSIDE THE GUT PROBIOTICS - HEALTH & DISEASES Track Chair: Lee Yeong Yeh, Track Chair: Uma Devi a/p Professor of Medicine & Consultant of Palanisamy, Associate Professor, Track Chair: Gastroenterology, Hepatology & Internal Monash University, Malaysia Medicine, Universiti Sains Malaysia

# DAY 2 THURSDAY 7<sup>TH</sup> MARCH 2019



# MARGARET MORRIS

Professor and Head of Pharmacology, University of New South Wales, Australia

# Dietary modulation of the gut microbiome and behaviour – can we intervene?

Our work has demonstrated that rats fed an obesogenic, cafeteria style diet consistently show deficits in hippocampal dependent memory tasks, and reduced diversity of their gut microbiome compared to control rats. Such behavioural deficits were independent of weight differences, as rats consuming diets high in saturated fat or high in sugar, for just two weeks, had impaired spatial memory even while consuming similar amounts of energy as control rats on a regular diet. We found that the memory deficits were associated with changes in the gut microbiota composition and genes related to inflammation in the hippocampus, which is a key brain region for memory and learning. More recently we have investigated whether the bacteriostatic antibiotic, minocycline, which is reported to exert anti-inflammatory effects, can modulate spatial memory. Again, the cafeteria diet produced persistent deficits in spatial memory (novel place recognition) that were prevented by minocycline cotreatment. Of interest, chow rats treated with minocycline performed worse than those treated with vehicle. Faecal microbiota alpha diversity was reduced by both cafeteria diet and minocycline, but these reductions were not associated with performance on the novel place task. However, abundances of specific OTUs within Bacteroides and Lactobacillus were associated with place task performance. Together, studies such as these suggest the gut microbiota could play a causal role in regulating behaviour. Current experiments are exploring the impact of faecal transfer on memory performance in



# ELIANA MARINO MORENO

Principal Research Fellow and Immunology and Diabetes Laboratory

Head, School of Biomedical Sciences, Monash University, Australia Fighting Fire with Fiber: The role of Diet and Gut Microbiota in Diabetes The globally rising incidence of T1D and

rats consuming the obesogenic diet.

The globally rising incidence of TID and T2D and many inflammatory diseases are associated with altered gut microbiota or dysbiosis. In turn, there is a considerably alteration in the production of microbial short-chain fatty acids (SCFAs). SCFAs are produced in the large bowel through bacterial fermentation of dietary fiber and play an important role in maintaining gut mucosal immunity and a balanced gut microbiota ecology. SCFAs, particularly acetate and butyrate, show beneficial



# JACQUES RAVEL

Professor, Microbiology and Immunology and Associate Director for Genomics, Institute

# for Genome Sciences, University of Maryland School of Medicine, USA **The vaginal microbiota: Translating microbiome science to novel therapies, a path forward**

The vaginal microbiota forms the first line of defence against sexually transmitted infection (STIs). Population based surveys of the bacteria inhabiting the vagina have shown that several kinds of vaginal microbiota exist, that differs in bacterial composition and abundance. Further, in some women, these communities are dynamic and can change over short period of time, while in other, they are highly stable and do not change. The impact of both composition and dynamic of the vaginal microbiota on women's health and the susceptibility to diseases is becoming clearer through the application of modern genomic technologies, ecological principles and in vitro modelling. Our understanding of the interactions between the vaginal microbiota, the host and diseases has grown and now affords the rationale selection of consortium of bacteria, mimicking beneficial vaginal microbiota that could form the basis of novel and personalised strategies to maximize a woman's first line of defence, and women's health in general. Translational research and well-powered clinical trials are desperately needed to validate these approaches. Manipulation of the vaginal microbiota has the potential to change the way clinicians approach women's health and preventive care, as well as empower women to protect themselves.



# YOSHIHISA YAMASHITA

Professor and Chairperson, Section of Preventive and Public Health Dentistry,

12:30-12:55

Division of Oral Health, Growth and Development, Kyushu University Faculty of Dental Science, Japan

# Oral dysbiosis related to acetaldehyde production

Oral flora is the most expected candidate for acetaldehyde (ALD) causing oral or oropharyngeal cancer. Although Neisseria species are well know to be high amount-producers of ALD in vitro, no information is available regarding oral microbiota profiles related to ALD prodcution. The salivary microbiota from 100 healthy males were classified into two types of communities (A and B) using 16S rRNA gene sequencing. ALD production



# CHERI CHU Senior Research Manager, Unilever Discover Shanghai Title TBC

12:05-12:30



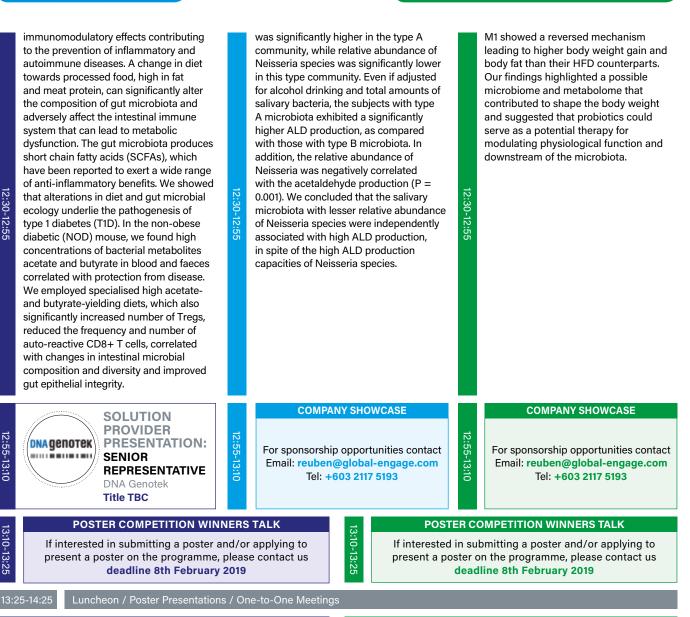
Professor, Department of Animal Science and Technology, National Taiwan University, Taiwan

# Shaping body weight through manipulating gut microbiome with probiotics

Surprisingly, two kefir probiotics, Lactobacillus mali APS1 (APS1) and L. kefiranofaciens M1 (M1), exhibited completely opposite results in antiobesity. APS1 manipulated the gut microbiome's obesity-associated metabolites, followed by regulation of lipid metabolism, enhancement of energy expenditure and inhibition of appetite. The specific hepatic metabolites induced by the APS1-manipulated gut microbiome also contributed to the amelioration of hepatic steatosis. While,

12:05-12:30

# DAY 2 THURSDAY 7<sup>TH</sup> MARCH 2019



# PREBIOTICS

# SHAHRUL RAZID SARBINI

Dean, Faculty of Agricultural and Food Sciences, Universiti Putra Malaysia

Prebiotics: An Asian Perspective The Asian region being the largest and most populous continent on earth, signifies

most diverse biological resource provides plentiful source of indigenous plants as prebiotic. This study will look at prebiotic plants that are available in Asia. An interesting source is sago starch, which is derived from palm (Metroxylon sagu) indigenous to South-East Asia, containing about 60 % resistant starch. Some in vitro and in vivo studies have demonstrated the ability of sago starch to increase numbers of Lactobacillus and Bifidobacterium. Studies on the effects of resistant starch on the glycemia index, insulin responses, and satiety have been continuously progressing, proving its role as a functional food. The Asian region also offers plentiful herbs and spices that are used as traditional medicines since ancient times. Most are due to their bioactive compounds i.e. polyphenols or flavonoids. Most polyphenols are of low bioavailability, where their influence on health may be either through intestinal absorption or interaction with colonic microbiota. Root of turmeric (Curcuma longa) is widely used as condiment in Asian food as well as a traditional remedy in Chinese and Indian Ayurvedic medicine. The curcuminoid are metabolised by colonic microbiota, modulating the bacterial population and their metabolic activity.

# R&D - HEALTH & DISEASES

# **REBECCA SLYKERMAN**

Clinical Neuropsychologist and Senior Research Fellow, University of Auckland, New Zealand

Probiotic Supplementation of Pregnant Women and Infants: Relationships to Psychological and Neurocognitive Outcomes

Postnatal depression and anxiety affect a woman's risk of ongoing psychological problems and relationship with her baby. We conducted a randomised, double-blind, placebocontrolled trial of the effect of Lactobacillus rhamnosus HN001 in 423 New Zealand women. Results showed a significant reduction in postnatal depression and anxiety symptoms. There is pre-clinical evidence suggesting the gut microbiome is involved in developmental outcomes in childhood. Longitudinal cohort studies of children followed from birth through childhood suggest early antibiotic exposure is associated with poorer neurocognitive outcomes. The area of probiotic supplementation for improved neurocognitive outcomes is emerging. Early trials have not consistently found beneficial effects of probiotics and research is continuing to answer question about the role that antibiotics and probiotics play in childhood neurodevelopment.

14:25-14:50

# DAY 2 THURSDAY 7<sup>TH</sup> MARCH 2019



14:50-15:15

# LARRY WEISS

CEO and Founder, Persona Biome How can we talk about health care when we don't understand health and we don't care?

The emerging science of the microbiome is still in its infancy yet it is the driving force behind a transformative scientific revolution. What lies ahead

will have broad implications for us as scientists, our companies and academic institutions, our health, and perhaps for our survival. It is worth reflecting on where we are today, how we got here, what we have learned so far, and the limitations of our methods and of our vision. I will discuss what we are learning about our biological past by studying the microbiota of minimally impacted hunter-gatherers in the Amazon and how it is challenging our deeply held ideas about human health that may inform our path forward.



# **DEV MITTAR**

Lead Scientist and Head of R&D ATCC, USA Development and evaluation of site-specific standards for gut, skin, oral, and vaginal microbiome studies

The human microbiome is a rapidly growing field of research with the potential to become one of the most important tools for personalized health and precision medicine. To date, a significant body of work has been performed on the human gut microbiome to evaluate its species composition and influence on physiology; this research has led to additional studies on microbiomes localized at other sites on the human body (e.g., skin, oral, vaginal). However, a predominant limitation in these site-specific microbiome studies is the lack of appropriate and relevant standards to control the technical biases introduced throughout the metagenomics workflow. To address this, ATCC has developed a set of genomic and whole cell mock microbial communities from fully sequenced and characterized ATCC strains that represent species found in the oral, skin, gut, or vaginal microbiome. To further enhance the use of these standards and eliminate the bias associated with data analysis, we have also collaborated with One Codex to develop data analysis modules that provide simple output in the form of true-positive, relative abundance, and falsenegative scores for 16S rRNA community profiling and shotgun metagenomics sequencing.

Invitation Out

14:50-15:15

15:15-15:40

# LEE YEONG YEH

Professor of Medicine & Consultant of Gastroenterology, Hepatology & Internal Medicine, Universiti Sains Malaysia Effects of environment insults on gut-brain axis and using probiotics for its restoration

The use of probiotics can relieve gut symptoms and psychological disturbance through restoration of microbial balance and the out-brain axis. Recent research has shown an intricate relationship between host gut wall and luminal microbiota environment which is critical in maintaining gut health and psychological well-being. Some factors have been shown to affect gut microbiota, but environment is probably most important, for example, diet rather than genes has been shown to be the primary determinant of gut enterotype and obesity in Asian populations. Disruption of a stable microbiota composition (dysbiosis) due to an environmental insult from e.g. major flood, typhoon and air pollution; common disasters in the Asian region, can lead to gut-brain axis disturbance in the form of irritable bowel syndrome and anxiety. Thus, this presentation aims to discover the effects of environment insults on gut-brain axis and how probiotics can possibly be used in such conditions.



# HANNA SIDJABAT

Honorary Fellow and Chief Investigator, University of Queensland Centre for Clinical Research, Australia

Probiotics for newborn babies: potential benefit to reduce the burden of neonatal sepsis

Probiotics types such as Lactobacilli and Bifidobacteria have been used for infants who have sepsis can be treated without any side effect. However, if the infants are in late stage of sepsis. probiotics can not be helpful outcome. The motility and maturity of gastric tract in neonatal can be improved by using probiotics. In this presentation, I will focus on the clinical trial applications of probiotics for newborn. There are several benefits of using probiotics for newborn babies: 1) The intestinal barrier resistant can be increased against the bacteria that crossing barrier and spread their poison. 2) modification the host reaction according to production of microbe; 3) mucosal response for IgA can be increased. 4) Anti-inflammatory such as Cytokines production can be raised. However, the benefit of probiotic activities relies on the dose in specific period time and on the species of bacterial strains.

# WILLIAM WEI-LIAN HUNG

Associate Director and Head of Probiotics Research Center, Innovation Center, Inner Mongolia Yili Industrial Group Co. Ltd., China

Title TBC

15:40-16:05

Closing Remarks / Conference Close

15:15-15:40

# **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 congress 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 \$50 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.

# POSTER COMPETITION - CLOSING DATE 8<sup>TH</sup> FEBRUARY 2019

- 1. Submit your entry prior to the closing deadline (1 entry per person)
- 2. One winner from each Congress will be selected by the judge(s)
- 3. The winners of the poster presentation will be given a 15-minute speaking position on the conference agenda and notified in advance of the meeting
- 4. The judge(s) will make the decision based on the abstract(s) submitted
- 5. The winners will receive a certificate from the organisers
- 6. Representatives from solution provider organisations are not eligible to enter the competition but are welcome to present posters at the meeting as normal
- \*\*Poster space is limited so early submission is recommended





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