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Welcome

On behalf of the International Probiotics Association and William Reed, publishers of NutraIngredients-USA and event organizer of Probiota Americas, we are delighted to welcome you to Chicago for the 2016 IPA World Congress + Probiota Americas. Our agenda over the next three days aims to spark scientific and business innovation amongst our combined audience of academics, business and regulatory leaders.

This event marks the first time that the IPA has partnered with William Reed and its Probiota event series, and has led to the biggest congress and Probiota event to date. This is a reflection of the strength of the IPA, the reputation of Probiota Americas and NutraIngredients-USA, and the intense interest in the probiotic sector, which is experiencing phenomenal growth across the globe.

With insights from the cutting edge of science, from the health benefits to next generation analytical tools, we hope to accelerate your ability to translate new scientific discoveries into innovative products that will bring commercial success to your organizations and better health to your customers. This event is also the first time we are starting with two workshops: Prebiotics – Quantifying impact on host health, and Women and their microbes – Healthy aging from the start – and we encourage you to attend one of those, depending on your interest.

We also have an exceptional panel with representatives from key regulatory agencies around the world, from the US FDA and Health Canada to ANVISA, EFSA, and Food Standards Australia New Zealand, and we look forward to a lively and constructive conversation with these guests. The program also features presentations by leading healthcare practitioners who are applying the scientific data to clinical practice, and it is vital that the industry engages with the wider medical community.

During your time with us we hope you’ll take every opportunity to share your challenges and experiences in open discussion and debate with your peers. We’ve designed the program to allow for plenty of networking and interaction, including roundtables and speed networking sessions.

At this point we’d like to offer particular thanks to our Scientific Committee who, as well as guiding our program development, have had a leading role this year in shaping the Scientific Frontiers poster session. By helping us to promote the session among their research communities, they have ensured an impressive level of high quality entries – generating some cutting-edge and previously unseen science for you to examine.

We’d also like to thank the international events team at William Reed, who have orchestrated and organized every element of this event and your experience with us.

And finally, we look forward to meeting you at the IPA World Congress + Probiota Americas.

Welcome!

George Paraskevakos
Executive Director, International Probiotics Association

Stephen Daniells, PhD
Senior Editor, NutraIngredients-USA
General Information

Download this program here: www.probiotaamericas.com/onsiteprogram

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To continue networking join the IPA World Congress + Probiota Americas LinkedIn group. This group is for participants only. Check your LinkedIn inbox for your invitation. A list of participating organizations can be found online at www.probiotaamericas.com/participants

Presentations: Most speakers will make their slides available to our participants. You will receive a link to download the slides with the post event survey.

Organizers Desk
A member of the team will be available at the organizers desk at all times. If you are away from the event and in need of assistance please call one of the contacts given below.

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Agenda at-a-glance

Venue: River Level Two
The Westin Chicago River North

Tuesday May 31

Workshop arrivals
1.00 pm  Registration
1.15 pm  First Focus workshops
6.30 pm  Regulatory Insights debate
8.00 pm  Welcome reception and Scientific Frontiers poster viewing

Wednesday June 1

9.00 am  Plenary conference
12.00 pm  Speed networking
12.45 pm  Lunch with roundtable discussions
2.15 pm  Plenary conference
7.30 pm  IPA World Congress + Probiota Americas drinks reception and dinner
Venue: House of Blues

Thursday June 2

9.00 am  Plenary conference
1.00 pm  Networking lunch
2.30 pm  Departures
Prebiotics: Quantifying impact on host health

Chaired by: Dr Stephen Daniells, Senior Editor, NutraIngredients-USA

Prebiotics have been linked to a range of health benefits, from bone health to metabolic health, anti-inflammatory effects and a positive role in development. This workshop will explore the established and emerging health benefits of prebiotics and consider next generation prebiotic ingredients.

1.15 pm Welcome from the Chair
1.20 pm Prebiotic manipulation of the gut microbiome and metabolome: is this a health benefit?
   Prof Bob Rastall, Professor of Food Biotechnology, University of Reading
1.50 pm Prebiotics from milk: discovery and characterization
   Dr Daniela Barile, Associate Professor, Department of Food Science and Technology, University of California Davis
2.20 pm Prebiotics in the first year of life
   Dr Rachael Buck, Associate Research Fellow, Global R&D, Abbott Nutrition
2.50 pm Prebiotics and food allergies
   Prof Cathryn Nagler, Bunning Food Allergy Professor, Professor of Pathology, Medicine, Pediatrics and The College The University of Chicago
3.20 pm Refreshments
3.50 pm A chronic lack of dietary fiber increases gut bacterial mucus foraging and susceptibility to enteric pathogens
   Dr Eric Martens, Assistant Professor of Microbiology and Immunology at the University of Michigan Medical School
4.20 pm Panel discussion
   The next wave in prebiotics – from cutting edge analytics to next generation foods and supplements
   Panelists:
   • Dr Christopher Elkins, Director of the Division of Molecular Biology, CFSAN, FDA
   • Dr Brad Saville, CTO, Prenexus Health
   • Prof Bob Rastall, Professor of Food Biotechnology, University of Reading

Women and their microbes: Healthy aging from the start

Chaired by: Dr Jessica Younes, Medical Science Liaison, Women’s Health Portfolio, Winclue Probiotics

From birth until death female microbiomes are complex and dynamic. Many links are emerging between the maternal microbiome and its subsequent health impacts on their children. The workshop will explore these connections further with a special focus on the latest developments in the understanding of the female microbiome and its importance in reproduction, health, and well-being throughout the life of a woman and her children.

1.15 pm Welcome from the Chair
1.20 pm Effects and impact of taking the woman out of reproduction
   Toni Harman, filmmaker and author
1.50 pm Breast milk and the newborn microbiome
   Dr Eduardo López-Huertas, Research Scientist, CSIC
2.20 pm Stressed pregnant mothers make sick babies: Neurodevelopmental reprogramming through the microbiome
   Dr Eldin Jasarevic, Center for Host-Microbial Interactions, University of Pennsylvania
2.50 pm Microbes and a healthy pregnancy: beyond the vagina
   Derrick Chu, Baylor College of Medicine
3.20 pm Refreshments
3.50 pm IGNITE TALKS - 4 short presentations showcasing local scientific research and talent.
   • A new and improved method demonstrates that the bladder is not sterile
     Professor Alan Wolfe, Professor in Microbiology & Immunology, Loyola University Chicago
   • The female urinary microbiota relates to incontinence medication efficacy
     Krystal Thomas-White, Loyola University Chicago
   • Overactive bladder phenotype observed in urothelial cells treated with bacterial supernatant
     Evann Hilt, Loyola University Chicago
   • Urinary Lactobacillus crispatus produces a molecule that kills uropathogenic E. coli
     Katie Diebel, Loyola University Chicago
4.20 pm Panel discussion
   What can and should we expect of probiotics now and in the future for women’s health?
   Panelists:
   • Dr Eldin Jasarevic
   • Derrick Chu
   • Prof Alan Wolfe
Day 1: Tuesday May 31

6.00 pm Registration for all other attendees

6.30 pm Regulatory insights: How to navigate your way in the shifting seas of international regulation.

Experts from leading pre- and probiotic markets will discuss current and emerging regulatory issues, areas of agreement and conflict across regions, how the agencies are working together or not, and what this all means for industry.

Chaired by:
Dr Stephen Daniells, Senior Editor, NutraIngredients-USA

Panelists:
Dr Cara Welch, Senior Advisor, Office of Dietary Supplement Programs, Food and Drug Administration (FDA)

Dr Valeriu Curtui, Head of Nutrition Unit, European Food Safety Authority (EFSA)

Dr Thalita Antony De Souza Lima, Head of Food Office, Brazilian Health Surveillance Agency (ANVISA)

Dr Leigh Henderson, Section Manager, Product Safety Standards, Food Standards, Australia New Zealand

Bruce Randall, Director, Bureau of Product Review and Assessment, Natural and Non-prescription Health Products Directorate, Health Canada

8.00 pm Scientific Frontiers session and welcome reception

Poster viewing, drinks and antipasti

The Scientific Frontiers poster session presents the latest state-of-the-art developments related to all aspects of prebiotic, probiotic and microbiome science relevant to health, wellbeing, consumers and industry. Posters have been selected based on abstracts submitted and reviewed by the Scientific Committee.

Please find the list of posters and more information about the Scientific Committee on the next page.
Scientific Frontiers poster session

Our Scientific Committee reviews abstracts submitted for the Scientific Frontiers sessions. This year oral presentations and posters have been selected from submitted abstracts. Posters will be on display during the networking session immediately after the Regulatory session.

Posters confirmed at time of print:

1. **Probiotic standards from the United States Pharmacopeial Convention (USP)**
   Maria Monagas, United States Pharmacopeia

2. **The human milk strain *Bifidobacterium breve* CECT7263 is safe in infants from 1 to 12 months and might improve symptoms of infant colic**
   Antonio Martinez Descalzo, Biosearch Life

3. **The effect of a bioactive polyphenol supplement on duration of acute diarrhea in adults in two double-blind, randomized controlled trials**
   Dr Thomas Lawson, Lawson & Associates

4. **Effect of probiotic *Bifidobacterium lactis* Bi-04™ on innate and adaptive host responses to experimental rhinovirus infection in healthy adults**
   Dr Arthur Ouwehand, DuPont Nutrition & Health

5. **The multiple benefits of *Lactobacillus fermentum* ME-3: A glutathione-producing probiotic**
   Dr Ross Pelton, Essential Formulas

6. **How processing stress and application can affect the stability of the probiotic strain *Bifidobacterium animalis* subsp. *lactis* HN019 in juice**
   Sarah Hansen, DuPont Nutrition & Health

7. **Preservation of probiotic bacteria in various food products**
   Moti Harel, Advanced BioNutrition Corporation

8. **Comparative study of *Bifidobacterium lactis* stability in Capsugel® Vcaps® versus DRcaps™**
   Frank Haack, DuPont Nutrition & Health

9. **Zeodration for prebiotics concentration and preservation**
   Carla Palencia, GiCaP

10. **In vitro batch fermentation analysis of prebiotic effects of five common consumer fibers**
    Dr Justin Carlson, University of Minnesota

11. **Polyunsaturated fatty acid saturation metabolism in probiotic lactic acid bacteria affecting host health by generating bio-active fatty acids**
    Dr Shigenobu Kishino, Kyoto University

12. **Novel dietary fatty acid metabolites with health promoting activity produced by probiotic lactic acid bacteria**
    Prof Jun Ogawa, Kyoto University

13. **Industrial production of hydroxy fatty acids with health promoting activity using probiotic lactic acid bacteria**
    Kazuhisa Muneishi, Nitto Pharmaceuticals

14. **Xylooligosaccharide supplementation alters gut bacteria in both healthy and prediabetic adults**
    Dr Jennifer Gu, AIDP
Day 2: Wednesday June 1

9.00 am  Welcome from the IPA
  **George Paraskevakos**, Executive Director, International Probiotics Association

Welcome from the Chair and scene setting
  **Dr Stephen Daniells**, Senior Editor, NutraIngredients-USA

As Senior Editor of the market leading NutraIngredients-USA.com and FoodNavigator-USA.com, Stephen is focused on food and nutrition science reporting at the highest level. He has been with William Reed Business Media for nine years as a senior journalist and editor and is also Editorial Consultant for WRBM’s Vision Events series.

9.05 am  The state of the probiotic industry
  **Kora Lazarski**, Strategic Alliance Manager, SPINS

Once little known micro-organisms largely overlooked by shoppers, probiotics have exploded onto the US retail scene with remarkable year-on-year growth. In 2016 sales of supplements alone approached $125 million. Kora’s presentation will provide an insight to this rapid growth trajectory, tracking over $624 billion in sales data, and will explore the innovative product trends at the forefront of probiotic delivery.

- Cross-channel sales trends in natural, speciality and conventional retail channels
- Growth patterns – from high affinity markets to regions showing promising potential
- More than a supplement – probiotic trends across food, beverage, beauty and haircare

9.30 am  Probiotic economics: An alternative strategy for cutting the costs of respiratory tract infections
  **Irene Lenoir-Wijnkoop**, Department of Pharmaceutical Sciences, University of Utrecht

Common respiratory tract infections (RTIs) have a high incidence around the world. Though typically mild and self-limiting, they place a considerable burden on primary healthcare and create costly productivity losses due to missed work days. Traditional preventative strategies have had limited success, but new studies in France and Canada shows that probiotics can reduce the incidence and duration of common RTIs, saving healthcare budgets and improving national productivity. Irene’s presentation will show how – based on the results of these studies – probiotics can out-perform traditional preventative measures.

- Why traditional preventative models fail – from education and handwashing to influenza vaccination
- The evidence – meta-analysis that shows probiotics can reduce the incidence and duration of RTIs
- The economic model for France and Canada – how probiotics reduces healthcare costs and boost productivity

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**Kora Lazarski**

At SPINS Kora’s work leverages her sales and business development background to forge strategic partnerships and programs that communicate and grow the value of data for retailers, consumer brands and the media that report on them. She previously worked in sales, business development and marketing. She has also worked with NGO’s in South America, turning entrepreneurial ideas into practical programs. She returned to the US to hone her craft, working with SPINS to grow a vibrant consumer products industry.

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**Irene Lenoir-Wijnkoop**

As well as having an affiliation with the University of Utrecht’s Department of Pharmaceutical Sciences, Irene works for Danone as Public Health and Scientific Relations Director. She previously held a similar role with Upjohn, liaising on the company’s behalf with Europe’s scientific community in the field of innovative medicine. She is a member of the French Scientific Dairy Board, the International Dairy Federation and the International Life Sciences Institute. She is considered a pioneer in the emerging field of nutrition economics and is chairman of the nutrition technology working group established by Health Technology Assessment International. She began her career in clinical healthcare after graduating as a nutritionist.
Ger Rijkers

Ger is a medical immunologist and, in addition to his post at Roosevelt, is Professor of Biomedical and Life Sciences at the University of Utrecht. He also works as a senior scientist at the Laboratory of Medical Microbiology and Immunology at the St Antonius Hospital in Nieuwegein, where he supervises the work of several PhD students. His research interests include mucosal immunology, immunoregulation, vaccination and the interaction between gut microbiota and the immune system. He has published extensively on these subjects.

10.00 am  What constitutes a health benefit?  
A global perspective on probiotics

Professor Ger Rijkers, Head of Science Department, University College Roosevelt

The debate continues between regulatory authorities and industry stakeholders about which effects of probiotics can be said to be beneficial to human health. In his presentation Ger will cast light on the current situation by analyzing the regulators’ decisions in order to understand the grounds on which some health benefits have been approved and not others. His previous analysis of the dossiers of the European Food Standards Agency (EFSA) has been updated and extended to the rest of the world.

- When is a biological effect considered beneficial to human health?
- Why a change in the composition of gut microbiota is not enough
- Trends in regulatory approvals over the last three years
- Global comparisons – from Europe to the Americas, Australia and Asia

10.30 am  Refreshments

Robert Martindale

Robert received his MD from George Washington University and completed a PhD in Nutrition at UCLA. His primary career focus has been on surgical education, gastrointestinal surgery, abdominal wall reconstruction and the treatment of patients with complex nutritional issues. He has won several teaching awards and continues to mentor young physicians. After completing his army commitment at Eisenhower Medical Center in 1993, he spent ten years at the Medical College of Georgia before moving to his current role in Oregon in 2005.

11.00 am  Clinical use of probiotics: Where the rubber meets the road

Dr Robert Martindale, Professor of Surgery and Chief of the Division of General and Gastrointestinal Surgery, Oregon Health & Science University

The clinical use of probiotics in the USA has risen exponentially in the past five years but widespread support is hampered by the lack of randomized prospective studies. A lack of strain-specific data sets or dose response, poor understanding of the clear links to mechanism and general misinformation about probiotic products and their therapeutic uses have limited their routine adoption by clinicians. This presentation will review the current clinical perspective and possible strategies to optimize the use of probiotics.

- An evolving environment - from general gut health to targeted health claims
- Effective doses – guidance for key diseases and routine clinical challenges
- Protection from gut barrier disruption, alterations in intestinal permeability and immunologic compromise

PANEL DISCUSSION

11.30 am  For the fast track: What innovations could accelerate your product development lifecycle?

Chaired by: Hank Schultz, Senior Correspondent, NutraIngredients-USA

From generating new possibilities to powering formulation, delivery, licensing and marketing, we’ll look at the innovatory technologies and approaches that could accelerate new product development across the pre and probiotic industry.

Panelists:

Dr Nathan Matusheski, Scientific Leader, DSM Nutritional Products

Tony Blanch, Director of Quality and Corporate Services, Nutraceutix

Dr Gregory Leyer, Chief Scientific Officer, UAS Labs

Missy Lowery, Senior Marketing Manager, Capsugel, Americas Region
Day 2: Wednesday June 1

Please take your belongings with you as the conference room will be reset for roundtable discussions and lunch. Speed networking will take place in the networking area.

12.00 pm  **Speed networking and poster viewing**

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

Or... take a second opportunity to view the Scientific Frontiers posters.

12.45 pm  **Roundtable discussions with lunch**

Each table will be hosted by an expert from industry or academia who will lead a discussion on a particular topic. Join the table that suits you best. Topics are listed on pages 16 - 18.

**Keith Barrington**

Keith completed his medical training at the University of Liverpool in the UK before moving to Canada to take up a neonatal fellowship in Edmonton Alberta in 2008. Since then he has held several university posts and has served as Chair of the Fetus and Newborn Committee of the Canadian Pediatric Society and of the Society of Neonatologists of Quebec. His research interests include apnea and respiratory control, cardiovascular adaptations and circulatory support, and ethical decision making. He has recently been investigating the development of the neonatal microbiome and the role of probiotics in preventing serious intestinal diseases. He has published extensively, is an active member of the Neonatal review group of the Cochrane collaboration and a busy blogger at neonatalresearch.org.

2.15 pm  **Manipulating the microbiome in micro-premature babies**

*Dr Keith Barrington*, Neonatologist and clinical researcher, Sainte Justine University Health Center, and Professor of Pediatrics, University of Montreal

When babies are born prematurely the normal colonization of their intestines is deranged. This leads to series complications including infections and necrotizing enterocolitis. Routine supplementation with probiotics has been proven to reduce these serious and life-threatening complications. Based on clinical experience and recent research, Keith will explain:

- **Cause and effect** – how premature babies are affected by their abnormal intestinal microbiomes and how they can be treated with probiotics
- **Lessons learned** – experiences with the routine use of probiotics in a Canadian Hospital’s neonatal intensive care unit
- **Regulatory hurdles** – what stands in the way of the use of probiotics in America’s high-risk hospital population
Day 2: Wednesday June 1

Bart Keijser

Bart’s work is focused on the health beneficial functions of the oral and respiratory microbiota and the creation of insight to feel industrial applications. He is an extraordinary professor of Oral Systems Biology at the Academic Center for Dentistry in Amsterdam. Since 2005 he has also worked with the Microbiology and Systems Biology group of the Netherlands organization for Applied Scientific Research (TNO). He studied molecular sciences at the University of Wageningen in the Netherlands and has a PhD from Leiden University, also in the Netherlands.

2.45 pm Beneficial microbes and the maintenance of oral health
Professor Bart Keijser, TNO Microbiology and Systems Biology and the Academic Center for Dentistry, Amsterdam

Current strategies to maintain oral health are based on the inactivation and eradication of pathogenic bacteria and processes of pathogenesis. Metagenomic studies have revealed that the mouth is a complex microbial environment, characterized by different microbial niches. While the oral microbiota is exposed to daily physical and chemical perturbations from eating and personal hygiene measures, it has a surprising temporal stability. Biological properties that confer stability in the microbiome are important for the prevention of dysbiosis – a microbial shift towards a disease. Although processes that underlie oral diseases have been studied extensively, processes involved in maintaining a normal, healthy microbiome are poorly understood. Bart’s presentation shines a light on this little understood area of medical science.

- What constitutes a healthy oral microbiome – what species and functions are likely to be involved
- The role of bacteria in maintaining oral health
- How a healthy oral ecosystem is maintained and how it can recover from challenges
- How we can support homeostatic control over the composition and function of the oral microbiota

John Hale

John has worked for BLIS Technologies since 2011 after studying with its founder, Professor John Tagg, in the Department of Microbiology at the University of Otago in New Zealand. He also carried out post-doctoral research at the University of British Columbia, Canada, and the Monash University School of Pharmacy in Melbourne, Australia.

3.15 pm Developing a probiotic for a niche environment – challenges and opportunities for probiotics in the human mouth
Dr John Hale, Research and Development Manager, Blis Technologies

Streptococcus salivarius is a commensal bacterium of the human mouth that has been found to play a beneficial role in supporting natural oral health. Its origins as a potential probiotic stemmed from a longitudinal study showing that the presence in children’s mouths of certain S salivarius strains appeared to provide some protection against ‘strep sore throat’. One of these strains (BLIS K12) has been evaluated in clinical trials and is now widely distributed commercially. The idea of encouraging oral microbial homeostasis could also be beneficially applied to other diseases and further studies have shown how this probiotic strain can help control diseases such as halitosis and otitis media. John’s presentation will summarize the science and discuss the challenges of developing probiotics for niche environments.

- Stopping strep – how the first health benefit was identified and proven
- Extending opportunities – the implications for other oral diseases
- Commercializing the idea – creating a market for oral probiotics
- Challenges for niche applications

3.45 pm Refreshments
Day 2: Wednesday June 1

**4.15 pm  Lactobacillus helveticus Lafti® L10: a promising candidate to support immune health in athletes**

Dr Stéphanie-Anne Girard, Clinical Program Manager, Lallemand Health Solutions

Numerous health benefits, such as reduction of cardiovascular disease risk, are associated with physical activity (PA). Although the exact mechanisms are still under investigation, it is thought that many cellular and molecular pathways of PA involve immune modulation. However, depending on the intensity and volume, negative effects can also be reported following PA. Long-term intensive training has been shown to impact the chronic stress response leading to impaired immune function and an increase in the occurrence of upper respiratory tract infections (URTIs). This is observed in elite athletes where respiratory illness accounts for a significant percentage of the non-injury related illnesses reported especially in the post-exercise recovery period.

- Probiotics could be a safe alternative to prevent the onset and/or reduce the severity of URTIs in athletes as well as people with active lifestyles.
- *Lactobacillus helveticus* Lafti® L10 has been shown to survive the intestinal transit whilst modulating the immune response.
- Results obtained following *in vitro*, animal models and human intervention trials demonstrate the efficacy of *helveticus* Lafti® L10 for immune support and mitigation of URTIs in active people.

**4.45 pm  Quantification of lactic acid bacteria by flow cytometry in starter cultures, probiotics and fermented milk products - a new ISO/IDF standardized method**

Dr Andrea Budde-Niekiel, Curator DuPont Global Culture Collection (DGCC), DuPont Nutrition & Health

Quantification of active cells is a key feature in the quality assessment of starter cultures, probiotics and fermented milk products as well as in the optimization of fermentation processes. The ISO 19344 1 IDF 232:2015 provides an analytical protocol, validated and standardized for the quantification of Lactic acid bacteria (LAB) in starter cultures and their applications. The ISO 1 IDF standard includes three individual and independent but equivalent protocols differing on the target of fluorescent cell staining. The method has been validated via a collaborative study including relevant matrices and sample types that were tested by fifteen laboratories. The outcome of the collaborative study, advantages and challenges associated with this method will be outlined in this presentation.

- Flow cytometry is a rapid method for the quantification of cells.
- The method has been standardized for its use in starter cultures, probiotics and fermented milk products by IDF/ISO enabling worldwide comparison of results.
- Flow cytometry allows assessing the fitness of a population by differentiation between active and total cells.
- Further advantages of flow cytometry compared to traditional plate counting include low variability of the method and possibility of high analysis throughput.
- In case of stressed cells the validity of flow cytometry might be limited.
Day 2: Wednesday June 1

Christopher Elkins

Christopher has a BA in biology and history from Case Western Reserve University and a PhD in microbiology from the University of Tennessee. He was subsequently appointed as postdoctoral fellow in the Department of Molecular and Cell Biology at the University of California at Berkeley. During his 12 year tenure with FDA and previous to his appointment at CFSAN, he served as staff microbiologist and principal investigator in the Division of Microbiology at the FDA’s National Center for Toxicological Research (NCTR). His primary research interests involve enteric microbiology and antimicrobial resistance mechanisms as they relate to regulatory-based scientific needs. He is currently researching genomic-scale analysis of probiotics and enteric foodborne pathogens, and metagenomic analysis of the gut microbiome to advance food safety research in molecular toxicology and nutrition. He is a member of the American Society for Microbiology and editor of Applied and Environmental Microbiology.

5.15 pm  A next-generation toolbox for identification, subtyping, and surveillance of live microbial ingredients in dietary supplements and foods

Dr Christopher Elkins, Director of the Division of Molecular Biology, Center for Food Safety and Applied Nutrition (CFSAN), Food and Drug Administration (FDA)

Beneficial microbes are added to many food products and dietary supplements resulting in an expanding manufacturing industry to meet the demand for new health-related products. Strain identification and subtyping are important for assessing safety as well as proper labeling and post-market product surveillance. However, much of FDA’s microbiological research and development is focused on foodborne enteric pathogens. Thus, we have leveraged our expertise with pathogen subtyping to develop tools that are built on a genomic-scale for analyzing live microbial products. The presentation will serve to highlight these research developments including construction and utility of a custom high-density DNA microarray, direct-from-product metagenomic sequencing and analysis, as well as whole genome database development. Potential applications for quality control and routine monitoring of batch variation as part of a ‘Good Manufacturing Practices’ process will be highlighted.

• An appreciation for cutting-edge science involving genomics and metagenomics in product analysis
• A perspective on how government research and development can be leveraged for industry use
• A science-based approach for improved regulatory oversight and safety of marketed products containing live microbials

5.45 pm  Chairman’s closing remarks

7.30 pm  IPA World Congress + Probiota Americas drinks reception and dinner

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

Join us for dinner and entertainment in The House of Blues - Rockin’ Cuisine in the Marina District!

The House of Blues is just across the road from the conference venue. Dress code: smart casual.
Day 3: **Thursday June 2**

**9.00 am**  
**Chairman’s re-cap of Day 2 and welcome back**

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**Elsbeth Pekelharing**

Elsbeth specializes in the influence of gut-microbiota and probiotics on brain function. She has worked as Science Liaison for Winclove Probiotics since 2015 and collaborates with universities, research institutes and academic hospitals to study the capacities of individual bacterial strains and the efficacy of final formulations. She studied Health Sciences at Maastricht University, specializing in bioregulation and kinesiology. Her research master at the VU University in Amsterdam is focused on transdisciplinary methodology in health and life sciences.

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**9.05 am**  
**Multispecies probiotics: A missing piece of the puzzle in the treatment of depression?**

**Elsbeth Pekelharing, Science Liaison, Winclove Probiotics**

Mental disorders in general and depression in particular are reaching epidemic proportions around the globe. In recent years it’s become clear that the intestinal microbiota plays an important role in the bidirectional communication that takes place between the intestine and the brain. Can probiotics improve this communication and either prevent or alleviate depression? Elsbeth will share the promising results of recent studies that suggest they can.

- A spotlight on the gut-brain axis and the role of probiotics in moderating its performance
- How in animal and human trials the multispecies probiotic Ecologic® Barrier has reduced depressive symptoms
- Next steps – new studies that will reveal more about the how addressing the gut-brain axis can alleviate mental disorders

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**Marco Pane**

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

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**9.35 am**  
**Case report: Probiotic treatment delivers beneficial outcomes for a child suffering from short bowel syndrome**

**Dr Marco Pane, Product Development Specialist, Probiotical Healthcare**

Short bowel syndrome (SBS) is the most common cause of intestinal failure in children. It reduces the absorption capacity of the intestine, leads to an inability to maintain fluid, electrolyte, nutrient and micronutrient balances and, potentially, to D-lactic acidosis. Current therapies, which aim to suppress intestinal bacterial overgrowth with the use of antibiotics is not always successful.

Marco will report on the case of a six year old child with SBS suffering from recurring D-lactic acidosis and its associated neurotoxic affects, including ataxia, speech disorder, weakness and confusion. He will demonstrate how treatment with a probiotic formulation (*Bifidobacterium breve* BR03, *Lactobacillus casei* LC03 and Fructo-oligosaccharides) has helped improve the child’s health.

- Significant reduction in episodes of acidosis leading to a 70% reduction in hospitalization
- A return to a balanced diet with no special restrictions
- Improved mood and the ability to return to an active school life
- Increase in pH values, decrease of lactic acid and regularization of base excess in arterial blood gas

On the basis of these results Marco will suggest that specific probiotics have a major role to play in treating D-lactic acidosis in patients with SBS.
Day 3: Thursday June 2

10.05 am **Scientific Frontiers session**
Oral presentations awarded to the best abstracts submitted to the Scientific Frontiers session

**Effect of probiotic *Bifidobacterium lactis* BI-04™ on innate and adaptive host responses to experimental rhinovirus infection in healthy adults**
*Dr Arthur Ouwehand*, Research Manager, Active Nutrition, DuPont Nutrition & Health

A Prebiotic, Resistant Maltodextrin (RMD), as source of dietary fiber and a primary energy source for *Bifidobacteria* and the microbiota
*Dr Dennis Gordon*, Professor Emeritus, North Dakota State University

10.35 am **Refreshments**

11.15 am **Probiotics and the vaginal biofilm: Microbial real estate opportunities**
*Dr Jessica Younes*, Science Liaison, Women’s Health Portfolio, Winclow Probiotics

The vaginal microbiome plays an integral role in the health and reproductive ability of women. Many interventions and therapeutic modalities, including probiotics, are designed to restore microbial balance and function. However, the prevalence of infection recurrence and treatment failure rates suggest there are additional factors that must be taken into account to optimize treatment efficacy. One such factor is the vaginal biofilm – the natural physical microbial environment where the eubiotic and dysbiotic microbiota live and thrive. Biofilms represent challenging targets because of their intrinsic protective and unique characteristics. This presentation will discuss opportunities to target biofilms, and will identify key probiotic properties and selected weaknesses in these microbial fortresses.

- The identity of the vaginal biofilm – and how it is an essential part of the microbiome
- The complicating role of this microbial fortress
- Weaknesses and susceptibilities of the vaginal biofilm – and how they are overcome

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**Jessica Younes**
Jessica is a Science Liaison at Winclow Probiotics within the women’s health portfolio. She combines expertise in infectious vaginal biofilms with a keen interest in vulnerable patient populations. Her scientific conference initiative, Women & their Microbes aims to facilitate communication of research between scientific and medical stakeholders to expedite and integrate microbial management solutions in women’s health. Her PhD research was focused on biophysical interactions between vaginal micro-organisms and cells. She has a PhD in medical sciences from the University of Groningen and a Masters in Nutrition and Nutraceutical Sciences from the University of Guelph.
Day 3: Thursday June 2

11.45 am **Bacillus coagulans Unique IS2: Immunomodulatory, anti-inflammatory and anti-proliferative effects**

*Dr Arunasree Kalle, Assistant Professor, University of Hyderabad*

In this study the immunomodulatory, anti-inflammatory and anti-proliferative efficacy of *Bacillus coagulans* Unique IS2 (BC UIS2) in *vitro* and *in vivo* have been evaluated. *In vitro* anti-inflammatory studies in LPS-induced inflammation in RAW 264.7 cells clearly demonstrated that BC UIS2 inhibited the pro-inflammatory markers such as COX-2 and NF-kB. Immunomodulatory effects of BC UIS2 were studied in LPS-treated PBMCs which showed that BC UIS2 induced cell-mediated Th1 immune response. Further anti-proliferative effects of BC UIS2 indicated that BC UIS2 induced apoptosis of colon cancer COLO-205 cells suggesting its protective role in colon. Metabolomics analysis of BC UIS2 indicated that metabolites of fatty acid metabolism might be playing role in the biological effects of BC UIS2.

- Bacillus coagulans Unique IS2 (BC UIS2) is a pH-resistant and Temperature-resistant probiotic
- The filtered supernatant of heat-killed bacteria (HSUP) possess immunomodulatory, anti-inflammatory and anti-proliferative effects
- BC UIS2 (HSUP) inhibits pro-inflammatory pathways such as COX-2 and NF-kB in LPS-induced inflammatory macrophages and elicits Th1 cytokine production in LPS-treated PBMCs leading to cell-mediated immune response
- BC UIS2 (HSUP) induces apoptosis of colon cancer cells
- The metabolites of fatty acid metabolism of BC UIS2 might be responsible for its biological effects

12.15 pm **Role of the gut microbiome in autoimmune disease**

*Dr Jayne Danska, Senior Scientist, Hospital for Sick Children Research Institute and Professor, Faculty of Medicine, University of Toronto*

Autoimmune and inflammatory diseases including type 1 diabetes (T1D), multiple sclerosis and inflammatory bowel disease, result from the combined effects of multiple inherited genetic variants interacting with poorly understood environmental factors. The frequency of T1D has increased by >500% in developed countries over the last 50 years. Such diseases also display sex bias in incidence and severity, the mechanics of which are equally poorly understood. Danska’s research uses mouse models and human cohort studies to examine the impact of host-microbe interactions on autoimmune responses and seeks to identify interventions that can protect from disease and associated biomarkers of disease progression.

- Manipulations of the gut microbiome, including treatment with probiotic strains, that alter host immunity, metabolism and islet-directed autoimmunity in mouse models.
- A high-content flow cytometry platform to define the magnitude and specificity of anti-commensal immune responses in healthy pediatric subjects compared to those with autoimmune disease.
- Longitudinal studies of children at high-risk, pre-diabetic children display distinct alterations in immune responses to commensal bacteria.

12.45 pm **Closing remarks and look to the future**

*Dr Stephen Daniells, NutraIngredients-USA*

*George Paraskevakos, International Probiotics Association*

1.00 pm **Networking lunch**

2.30 pm **Departures**
Roundtable lunch discussions

On June 1 at 12.45 pm you’re invited to join our roundtable lunch discussions. Choose the topic and table that interests you most.

Our roundtables will be hosted by an expert who will lead an informal discussion on an industry hot topic. Make your selection and join the table of your choice. But, be quick – once a table is full, it’s full! Having secured your place, sit back and enjoy the conversation while our staff wait upon you.

**Table 1 - What would constitute the ideal regulatory framework for probiotics?**
*Host: Celia Martin, Regulatory Affairs Director, Lallemand Health Solutions*

Most regional jurisdictions recognize the safe use of probiotics, but their views and requirements differ on key aspects including registration, manufacturing and health claim substantiation. While countries allow generic claims for probiotics as a category and even approve specific claims in areas such as stress, anxiety, mood, active people. Some won’t even allow the word ‘probiotic’ to be mentioned or have not yet concluded a regulatory framework. Join this roundtable to explore the different frameworks currently in use and reflect on what would be an ideal regulatory framework for probiotics.

**Table 2 - How to communicate the difference between scientifically characterised probiotic products and those generically labelled ‘containing probiotics’ to consumers and retailers**
*Host: Anthony Thomas, Technical Support, Scientific Affairs, Jarrow Formulas*

A vast number of products labeled ‘containing probiotics’ are now entering the market, targeting specific populations and health conditions, as the category expands. Do these truly qualify as a probiotic according to the current consensus scientific definition? Although the scientific community agrees that effects of probiotics are strain, dose, and condition specific, many products don’t specify this. With naive consumers susceptible to misinformation, how can we use accurate labelling and communication to build their trust and ensure long term growth?

**Table 3 - The state of flow cytometry for probiotic enumeration in the US**
*Host: Alexis Collins, Director of Scientific Affairs, Pharmachem*

Flow cytometry, a cell-counting method that can determine the proportions of live, injured, and dead cells in a sample, has an ISO standard (19344, IDF 232) for the quantification of lactic acid bacteria in fermented products, starter cultures, and probiotics used in dairy products. We are now seeing companies pioneer this enumeration method for probiotic supplements in the United States. Join to discuss the advantages and disadvantages of flow cytometry versus conventional plating for probiotic enumeration, as well as any regulatory or consumer obstacles a company may encounter if choosing to switch their Supplement Facts from “CFUs” to “live cells”.

**Table 4 - The rising field of microbiota-gut-brain, should we go right or left?**
*Hosts: Elsbeth Pekelharing and Dr Jessica Younes, Science Liaison, Winclove Probiotics*

The gut and the brain are in constant bi-directional communication. Many brain-related indications (e.g. depression, migraine, ADHD and Alzheimer’s) have been linked to functions of the gut microbiota. The complex underlying mechanisms of the gut microbiota seem to be strongly inter-related. The gut-brain axis shows great potential for current and future microbial management interventions. But now we come to a fork in the road: should we go left and unravel the specific mechanisms per indication, knowing that this potentially valuable investment will take longer? Or should we go right and embrace the known inter-connectedness, providing options without fully unravelling the specifics of the gut-brain axis mechanisms? Join us – and engage your gut and your brain – to debate the best approach.
| Table 5 - | Probiotics in developing countries  
Host: Luis Echeverria, Co-founder and Partner, Unique Biotech  
Probiotic products are widely known and used in Europe, the US, and Japan – all highly developed economies that can afford them. But what about Latin America, Africa, and Asian countries where such products, which could provide solutions to many common sanitary and digestive problems, are much less affordable? Join us to discuss what the industry can do to open up these markets with affordable, effective probiotic solutions. |
| Table 6 - | Delivery innovations for probiotic supplementation  
Host: Glenn Guadi, Senior Manager, Product Management, Dosage Form Solutions, Capsugel  
What are the latest designs to deliver probiotics that provide both shelf stability and target delivery? Can probiotics be combined with other ingredients effectively? What liquids provide safe passage and shelf stability? Join us to talk about innovation and more in the expanding field of probiotic delivery. |
| Table 7 - | Probiotic qualification and acceptance  
Host: Dr Richard Herman, Senior Manager, Quality and Technical Services, Nutraceutix  
As components of dietary supplements, contract manufacturers must set criteria for the qualification and acceptance of incoming probiotic cultures. This includes establishing specifications for identity, purity, strength and composition, as well as procedures for receiving and testing these incoming materials. Join us for an interactive discussion of some of these requirements and of the testing methods used in the industry. |
| Table 8 - | What are important criteria when selecting a prebiotic?  
Host: Dr Brad Saville, Chief Science Officer, PreNexus Health  
There is increasing recognition of the role of prebiotics in human health. Currently, there is a very small group of compounds that are classified as prebiotics. How do they differ? Do they all deliver the same impacts or benefits? Is dose important? What about their potential interaction with probiotics and function as symbiotics? Join Dr Saville to discuss emerging science on the structure and function of prebiotics, and their impact on gut microbiota. |
| Table 9 - | Emerging role of probiotics in heart health  
Hosts: Kevin Mehring, CEO and Dr Christofer Martoni, Principal Scientist, UAS Laboratories  
For many years the connection between the gut and the heart seemed remote. Probiotics, long used to promote gut health, have recently shown impressive data for supporting heart health. Let’s get together to review the evidence, the commercial opportunity and what might lie ahead. |
| Table 10 - | Technology push versus consumer pull – implications for the innovation pipeline  
Host: Dr Nathan Matusheski, DSM Nutritional Products  
In industry we face a constant dilemma in discerning what’s scientifically possible from what’s relevant to the consumer. Join us to discuss how we best integrate technology push and consumer pull to find the ‘magic formula’ that leads to market-transforming innovation. |
| Table 11 - | Microbes regulate body metabolism? Learn how to change gut microbiota for metabolic control  
Host: Dr Jennifer Gu, VP of R&D, AIDP  
Increasing evidence indicates that changes in gut microbiota composition might contribute to the development of metabolic disorders such as obesity and T2DM. Studies suggest that gut bacteria influence whole-body metabolism through regulation of the host’s immune response, energy extraction and utilization, intestinal glucose absorption, and lipid metabolism. Join us to discuss ways to modulate the microbial dynamics of our gut for better metabolic control. |
| Table 12 - | Concentration and preservation of natural prebiotic components without chemicals: myth or reality?  
Host: Carla Palencia, CEO, GiCaP  
More than eight years of research has been performed to prove the advantages of the vacuum-clay dehydration system. This green technology makes it possible to increase vitamin and inulin contents from 3 to 14 times more than the natural products and preserving them over two years (packaging dependent) without adding chemicals. Join our roundtable to share lab results and sample testing. |
Table 13 - Challenges in clinical trial design for prebiotic and probiotic research
Host: Josh Baisley, Director, Clinical Trials, Nutrasource

The focus on the gut microbiome in clinical research presents numerous challenges in clinical study design. A strategic clinical development plan and clinical trial design are key factors in successfully conducting a clinical trial. This roundtable will focus on challenges of designing prebiotic and probiotic trials and confounding factors that are important to address in order to minimize risk of study failure.

Table 14 - Use of probiotics to deliver actives in the GI tract
Host: Dr Massimo Marzorati, Business Development Director, ProDigest

Carotenoids can be used as food additives as well as colorants, but have stability issues when it comes to shelf-life and digestion. A previous FP7-project (Colorspore) discovered gastric-stable carotenoid preparations from bacterial origin. Upon isolation and characterization of carotenoid-producing Bacillus strains, it was shown that such bacterial carotenoids have a higher stability, bioavailability and anti-oxidant activity in the gastrointestinal tract. Join us to discuss the implications and our ongoing research in to an oral delivery system for highly active carotenoids and evaluate potential direct health-benefits of the Bacillus delivery vehicle, with the ultimate aim to improve biomarkers associated with (the prevention of) cardiovascular disease (CVD).

Table 15 - Supplemeting your skin health with probiotics
Host: Dr Anurag Pande, VP Scientific Affairs, Sabinsa

Skin is the body’s largest organ and an ecosystem colonized by a versatile and diverse array of microorganisms that can be either pathogenic or beneficial. Skin health, just like gut health, often depends on a balance of these bacteria. Join us to discuss the new and exciting field of skin probiotics. We’ll look at the role of probiotics in maintaining the skin’s barrier function, the challenges in formulating probiotic skin care products, regulations and future prospects for this new growth opportunity.

Table 16 - How the media works and what it means for probiotics science
Host: Hank Schultz, Senior Correspondent, NutraIngredients-USA

Recent headlines show the shallow understanding of mainstream journalists regarding nutrition science, none more so than in the complex field of probiotics, prebiotics and the microbiome. Join Hank Schultz, Senior Correspondent at NutraIngredients-USA, for an illuminating discussion about the state of the modern newsroom, the 24 hour news cycle, and how to better engage and educate journalists in the mainstream media.

Table 17 - Bayer in Mind: The implications of the Bayer decision on probiotic research and regulations
Host: Dr Daniel Fabricant, Executive Director & CEO, NPA

Last year we saw the decision of the Bayer case take center stage. But where do we go from here? What did the decision on this case mean to the regulatory landscape and clinical trials? As we continue to see probiotic claims challenged by regulatory boards, researchers need to ask why? When conducting research on probiotics, it’s paramount that researchers are accounting for relevant outcomes. Why did this claim get challenged by regulators? Learning from past research allows researchers to better design a clinical study for success. Join our roundtable to learn about the implications of the Bayer case on probiotic claims, clinical trials and regulation.

Table 18 - The undiscovered country: new condition specific probiotics
Host: Dr Ralf Jäger, Co-founder and Partner,Increnovo

Probiotics are historically used to improve gut health and to support immunity. Emerging science links probiotics to heart health, brain health (gut-brain-axis) and sports nutrition (gut-muscle-axis). But probiotics can do far more, resulting in exciting scientific and business opportunities. Join Ralf and bring your crystal ball to discuss and brainstorm what the bright future holds.

Table 19 - The health-economics of probiotics
Host: Irene Lenoir-Wijnkoop, Department of Pharmaceutical Sciences, University of Utrecht

As healthcare costs rise inexorably, placing a burden on governments and economies as well as individuals, it’s time to seriously consider the potential contribution of probiotics. We’ll consider when and where probiotics can offer an alternative approach in preventative strategies to lower the occurrence and cost of common illnesses and disease. Join Irene to evaluate the latest evidence and to discuss possible next steps.
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Jarrow Formulas, Inc. (JFI) is a nutritional supplement manufacturer that markets its products in the United States and internationally to more than 20 countries throughout Europe, Asia, Latin America and the Middle East. The company’s goal is to promote optimal health with high quality, effective, affordable and “cutting edge” formulations, which are based on sound scientific research data. JFI offers a complete line of nutritional products that includes vitamins, minerals, standardized herbal concentrates, enzymes and amino acids as well as patented and clinically proven specialty antioxidant, probiotic and functional food formulations. JFI’s products are manufactured by Jarrow Industries Incorporated (GMP certified), a pharmaceutical quality facility located in Santa Fe Springs, California.

The company is active in monitoring governmental regulatory affairs, which affect the nutritional industry. It also vigorously promotes the rights of Americans to free access to dietary supplements.


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

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

www.lallemand-health-solutions.com

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

www.probiotical.com

Pharmachem Laboratories, Inc. is a premier international innovator, manufacturer and supplier of the finest quality ingredients. We deliver optimal solutions tailored to meet your needs across a complex matrix of industries including nutritional, food and beverages, flavors and fragrances. From manufacturing standardized extracts and custom ingredients to developing original solutions for process problems, Pharmachem’s sophisticated technologies offer unique options for our customers. Extraordinary ingredients. Original solutions. Impeccable service … always at Pharmachem.

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Winclove Probiotics is a Dutch company specialized in research, development and production of effective and evidence-based multispecies probiotic food supplements. We are an expert in the field of probiotics for over 20 years now. Winclove’s expertise is to develop highly effective probiotic formulations for specific health indications that reach from the traditional gut area to innovative areas such as women’s health and upper respiratory tract infections. Wherever an imbalance in the microbiota causes problems, we seek for an optimal way to restore the microbial balance with probiotics.

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

To guarantee the efficacy of our probiotics we optimize our formulations with the PROBIOACT® Technology. These ingredients improve the bacterial viability, resulting in a premium product for our clients.

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*DSM delivers innovative solutions that nourish, protect and improve performance in global markets such as food and dietary supplements, personal care, feed, medical devices, automotive, paints, electrical and electronics, life protection, alternative energy and bio-based materials. DSM’s 24,500 employees deliver annual net sales of around €10 billion. The company is listed on NYSE Euronext.*

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

**Prenexus Health**
*Prenexus Health is a natural prebiotic ingredient company in the US focused on individual health and wellness through the research, development, and production of branded natural prebiotic ingredients for nutrition.*

*As a science-based company that focuses on digestive health as a foundation for overall health and wellness, enhancing the “gut/brain” axis, Prenexus Health will be an innovative global leader in prebiotics supported by scientific and clinical research that demonstrates their health benefits. We believe in understanding digestive health and in helping establish, enrich and protect a healthy gut microbiota is the single largest opportunity to influence the overall foundation for life long health and wellness.*

*We have a mission to improve health & wellness of individuals, with a high quality, high purity natural prebiotic ingredient grown and processed in the US following sustainable environmental practices.*

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

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

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

Our YourBrand portfolio offers ready to market products in four health areas and is available in North America through Bifodan Inc., Boston, MA.

www.bifodan.com

KGK Clinical Trial Centers is a leading contract research organization specializing in human clinical trials for the health nutrition industry. For nearly two decades, KGK has applied the highest quality standards and state-of-the-art scientific technique and technologies to study and support the claims substantiation of dietary supplements and a variety of natural OTC products, functional foods and beverages, natural ingredient cosmetics, and other natural health products.

KGK has garnered a distinguished reputation internationally for working with companies large and small to design cost-effective clinical studies that meet FDA/FTC, Health Canada and EFSA regulations. All studies are approved by an independent ethics review board (IRB) and follow Good Clinical Practices (GCP).

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GICop Products Ltda is a company located in Colombia-South America in operations since 1993. It produces more than 1000 products from natural and organic certified food such as prebiotics, fruits, vegetables, eggs, yogurt, medicinal herbs, quinoa, to thermal clays, cosmetics, and precooked food, all of which are ZEODRATED.

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www.gicappproducts.com

Nutrasource is a full service contract research organization and consulting firm specializing in navigating complex regulations on behalf of dietary supplement, food, cosmetic and pharmaceutical companies. With locations across North America, our experienced team partners with sponsors to bring products to market through strategic product development, regulatory and clinical trial consulting and analytical and bioanalytical testing.

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Our expertise in the field of gastrointestinal transit, bioavailability and metabolism of food/feed compounds and pharmaceuticals, in relation to their fate and function in the body, makes ProDigest an essential partner for innovative product development.

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