

# Probiotics Task Force

## Exploring the Interactions between Probiotics and Health

2011 Member companies:

Barilla G.&R. Fratelli, Cargill, Danisco, Danone, FrieslandCampina, Lallemand, Mead Johnson Nutrition, Merck Healthcare, Nestlé, Pfizer, Puleva Biotech, Procter & Gamble, Yakult Europe



**Diet, Health and Disease**

### Why work in the probiotic area?

**Background** Probiotics are of growing interest within the scientific community, for consumers and for the food industry as they potentially provide functional health benefits. The interaction between the gut and intestinal microbiota and between resident and transient microbes defines a new area in physiology, an understanding of which would shed light on the 'cross talk' between humans and microbes.

Health claims on specific probiotics are accepted in the USA, in Japan, and in some other countries and under review in Europe. However, there is a need for comprehensive and harmonised guidelines on the assessment of the characteristics of probiotics as foods and biotherapeutic agents.

**Objectives of the Task Force** Created in 2005, the ILSI Europe Probiotics Task Force aims at advancing the understanding of scientific issues related to gut functions and how certain functional foods or dietary supplements, in particular those containing beneficial microorganisms, can impact them.

### Past, current and future activities: bridging the gap from bench to clinic

#### Guidance for assessing the probiotics beneficial effects

Following a workshop held in Montreux, Switzerland in 2008 an extensive supplement establishing the state of the art was published in the *Journal of Nutrition* early 2010. The following areas were selected :

IBS and IBD, digestive system metabolism, infections and allergy.

For each area, the published evidence was evaluated by listing concrete examples of demonstration of benefits and gaps in methodology, in order to provide comprehensive and harmonised guidelines for best-practice studies in order to substantiate the effects of probiotics.

JN  
THE JOURNAL OF NUTRITION  
A Publication of the American Society for Nutrition • www.asn.org

#### Guidance for Assessing the Probiotics Beneficial Effects: How to Fill the GAP

Presented at a workshop "Guidance for Assessing Probiotics Beneficial Effects: How to Fill the GAP" organized by the ILSI Europe Probiotics Task Force in association with the International Dairy Federation, Montreux, Switzerland, May 22-24, 2008

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#### Looking at the immuno-modulation triggered by a dietary intervention (Level 3)

In the context of health claims, different functional foods, such as probiotics, are claiming to modulate the immune system, however parameters are lacking to define the well-functioning of the immune system of the general population.

Starting in 2009, an Expert Group has been commissioned to:

- Provide relevant markers in the context of immuno-modulation induced by a dietary intervention within the general population
- Provide the reference values established in laboratory medicine and daily clinical practice for these selected markers, detailing the values for different subgroups of the population (age, gender, ethnicity)
- Provide a rationale for the use of the list outlining different scenarios:
  - . The modulation observed stays within the reference values range
  - . The modulation brings the markers back into the reference values range after the dietary intervention
  - . The modulation brings the markers outside the reference values range after the dietary intervention

#### How do probiotics interact with the intestine barrier? (Level 2)

An other Expert Group will start mid-2011 focusing specifically on the impact probiotics have on the gut barrier function, as this is one of the first sites a probiotic can influence. This work will be handled by a team of European experts who will look at the intestinal barrier impairment and how different microbiota changes can contribute to changes in the gut physiology and therefore to different comorbidities.

The expected outcome are:

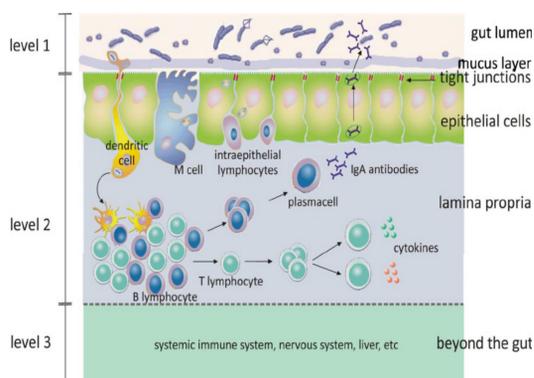
- 1- a manuscript addressing what are the mechanisms underlying the intestinal permeability modulation by probiotics, making the distinction between the direct and indirect effects of the microbiota.
- 2- a second manuscript addressing how modulating the gut barrier by probiotics can benefit human health.

For more information, do not hesitate to contact Ms. Agnès Méheust at:

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#### The 3 levels of action of a probiotic:

From: G. J Rijkers *et al.*, Guidance for substantiating the evidence for beneficial effects of probiotics: current status and recommendations for future research. *J. Nutr* 2010, 140: S671-S721



Level 3: Beyond the gut, have an effect on the systemic immune system as well as other cell and organ systems such as liver and brain.

Level 2: Probiotic bacteria can improve the mucosal barrier function and mucosal immune system

Level 1: Probiotic bacteria can interfere with growth or survival of pathogenic microorganisms in the gut lumen

### What's next...

- A Concise Monograph gathering both the specificities of probiotics and prebiotics, two concepts often mixed-up by the non-expert audience.
- Continuation of the collaboration with ISAPP and other ILSI branches working on gut microbes and health.
- Considering a future activity looking at the border between commensalism and pathogenesis?