

**ISAPP sponsors EUROPEAN CONFERENCE ON PROBIOTICS AND THEIR
APPLICATIONS
Krakow 6 - 8 October 2005**

Report filed by Mary Ellen Sanders, ISAPP President:

ISAPP was honored to be a sponsor of EUPROBIO meeting on probiotics held October 5-9, 2005 and organized by Dr. Piotr Heczko. Set in the beautiful city of Krakow in a brand new lecture hall on the Jagiellonian University, the meeting covered the topics of immunology, technological issues related to probiotic production, gastrointestinal diseases, *H. pylori*, global health applications, allergy, and vaginal applications. The speakers were from countries worldwide including South Africa, Canada, USA across Europe. ISAPP sponsored travel for Mary Ellen Sanders (USA), Gregor Reid (Canada), Francisco Guarner (Spain), Bruno Pot (Belgium) and James Versalovic (USA), each of whom chaired sessions and gave talks on their specific areas of expertise. In addition, Gregor Reid played a major role in the development of the scientific program. The meeting was attended by about 300 people.

Some observations from the meeting include:

- Many definitions of probiotics have been advanced and older versions continue to be quoted by a number of scientists. It is ISAPP's view that the FAO/WHO 2001 definition be adopted. If one accepts the FAO definition (www.fao.org/es/ESN/Probio/probio.htm), then it follows that (1) probiotics must be live microbes; (2) probiotics must have data which document efficacy in the target host (not restricted to human use); (3) probiotics must be delivered at an effective dose. Implied is that probiotics must be safe and truthfully labeled with information on composition and viability through the end of labeled shelf life. The definition does not require that probiotics function through a specific mechanism (e.g, alteration of the intestinal flora), at a specific physiological site (for example, colon vs. stomach), be delivered through a specific route (oral vs. intravaginal) or through any specific product type (food vs. pharmaceutical).
- Validation of in vitro assays – it must be realized that often there is a presumption that certain assays (e.g., adhesion in tissue culture, production of antimicrobial compounds, resistance to bile and acid, survival through the intestinal tract) are required to demonstrate probiotic effects. For the most part, the scientific validation of the importance of these properties is not established.
- The results from a recently completed EU funded project (SYNCAN) were reported. This study showed that a synbiotic supplement (probiotics + prebiotic) significantly decreased some biomarkers for colon cancer in polyp and cancer patients, giving important support to the wealth of data from animal models. However, while dietary intervention studies of this type are very important to address anticancer effects of probiotics, they are still limited (with regard to making 'disease prevention' claims) as the biomarkers presently available are not validated.
- Both the in vitro and in vivo animal studies will support the human dietary intervention study. Various Biomarkers are analysed by the Biomarker Network.
- Vast evidence obtained by in vitro studies and animal models suggest a role for certain probiotics and also for prebiotics in the regulation of innate and acquired immunity. A series of human studies on the usefulness of probiotics in chronic inflammatory conditions were reviewed during the conference. Controlled trials

indicate that some probiotics are beneficial for the prevention and treatment of atopic dermatitis. Data on the prevention of necrotizing enterocolitis in newborns with low weight also suggest an important role of probiotics for this indication. Concerning inflammatory bowel diseases, there is only strong evidence of the benefit of probiotics in pouchitis and for maintaining remission in ulcerative colitis.

- The best documented health effect of probiotic strains comes from alleviation of episodes of diarrhea. Yet, with up to 90% of AIDS patients suffering from diarrhea, no concerted effort has yet been made to bring probiotic remedies to the developing world. Studies conducted in Africa were presented showing that yogurt supplemented with *L. rhamnosus* GR-1 can be safely used in HIV positive individuals and potentially not only resolve diarrhea but also increase a falling CD4 count. The enhanced eradication of bacterial vaginosis (a condition that increases the risk of HIV infection in women) using antibiotic plus probiotics and the development of a lactobacilli-based vaccine further illustrated potential benefits of probiotics for people around the world. With over 38,000 new cases of sexually transmitted infections reported in North America each day, no longer can developed countries ignore the massive societal destruction of HIV or think that it will not come to their shores. The globalization of probiotics to include people at the front line of poverty, malnutrition and diseases such as HIV/AIDS, has been raised by ISAPP in the past and continues to be strongly supported by the organization.
- The tools of functional genomics are beginning to be applied to probiotic organisms on a large scale. With multiple *Lactobacillus* and *Bifidobacterium* genomes sequenced in the past several years, we are gaining key insights into metabolic pathways and genetics of probiotic functions including immunomodulatory capacities. Several talks at the meeting described approaches for screening probiotic strains with respect to anti-inflammatory or immunomodulatory functions. The ability to perform comparative genomics, gene expression profiling, and proteomics will result in an enhanced ability to characterize established probiotic strains in detail and identify novel strains with specific probiotic functions.
- Growth, processing and stabilization conditions can influence probiotic function. This is a largely overlooked aspect of evaluating probiotics for efficacy. Clearly, the phase of growth of the cells, the method of cell recovery from the fermentation, the method of recovery and preservation likely all impact the physiological state of the probiotic when consumed or applied to the host. It is likely, therefore, that these factors may also impact the ability of the probiotic to influence certain physiological traits in the target host. One concern about overlooking these issues is that publications on probiotics likely do not adequately describe these factors and will lack important information for interpreting studies.
- Yogurt can be a probiotic containing food, but it is not a probiotic.

ISAPP was also involved in a meeting sponsored by Danone regarding the start up of a Polish Probiotic Society. Held at the stately Grand Hotel in Krakow those interested in this society discussed how to approach development of such an organization. ISAPP does not sponsor chapters at this time, but we shared our philosophy that it is essential to promote, above all, the science of the area, and to define an appropriate and constructive role for industry involvement that does not interfere with this overarching goal. The vast contributions of industry scientists to advance the science in this field should be valued and encouraged in this proposed society, but in ISAPP's opinion, marketing and promotion of products is better left to other venues.

Those of us fortunate enough to participate in this Polish meeting thank the organizers and all the sponsors for this most enjoyable and rewarding conference.



Mary Ellen Sanders, James Versalovic, Bruno Pot, Annick Mercenier, Francisco Guarner and Gregor Reid (l-r) enjoy dinner at a restaurant in the Krakow Main Square after working on the 2006 ISAPP scientific program.



Gregor Reid and Mary Ellen Sanders in Krakow Main Square walking back from Jagiellonian University in Krakow after a day of talks.