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## The Gut Microbiota For Health Newsletter #39

### September 4, 2014

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### Edito

Dear Friends,

This edition of the newsletter brings you more exclusive content -- this time, an interview with Prof. Yolanda Sanz, the project coordinator of a large EU-funded project called MyNewGut.

We also have many interesting literature selections to share with you. Prof. Patrice Cani shares a selection on two microbes that affect host transcriptional response, while Prof. Paul Enck highlights a paper on a probiotic that restores mucosal barrier function in animals. We also bring you a study on a large cohort of Danish children that tracked gut microbiota establishment in early life, a popular paper on how lifestyle factors affect gut microbiota on daily timescales, and one on the gut microbiota's ability to protect against peanut allergen sensitization.

Even more selections are featured on our website, so be sure to check them out.

Also it's still time to test your knowledge on gut microbiota and to take the questionnaire brought to you by the ESNM!

The GMFH publishing team

## Gut microbiota e-learning 2014: take the questionnaire!

The Gut Microbiota and Health Section of the European Society of Neurogastroenterology and Motility (ESNM) is pleased to provide a first set of e-learning slides on gut microbiota dedicated to gastroenterologists. It contains a selection of scientific information about the human gut microbiota. This e-learning has been developed in cooperation with the World Gastroenterology Organisation (WGO), and it is put online for the World Digestive Health Day because WGO is emphasizing the role of gut microbiota in digestive health for the 2014 year.



This course is split into 4 parts : Introduction - Diarrhea - Colonic diseases - Questions from patients.

You can now take the questionnaire at the bottom of the article to test your knowledge.

Comments are welcome.

[Read more](#)

Written by PY. ARNOUX



## Interview with Prof. Yolanda Sanz, project coordinator of My New Gut

Thirty organizations from fifteen countries are coming together to conduct gut microbiome research in a new project called MyNewGut.

Professor Yolanda Sanz has been appointed MyNewGut's project coordinator and leads the project's human intervention trials on the gut microbiome's ability to metabolise nutrients and influence energy balance. She is a Professor of Research at the Institute of Agrochemistry and Food Technology (IATA) of the Spanish National Research Council (CSIC), and is head of the research group on microbial ecology, nutrition, and health.



As a follow-up to our article highlighting this EU-funded multidisciplinary research project, the publishing team spoke with Prof. Sanz about the endeavour.

[Read more](#)

Written by K. CAMPBELL



## *Akkermansia muciniphila* and *Faecalibacterium prausnitzii* differentially affect host transcriptional response: focus on a powerful tool to study host-microbe interactions

Numerous commensal bacteria present in the gut microbiota produce short chain fatty acids (SCFA's) particularly acetate, butyrate and propionate.

These SCFA's have been associated with several biological effects upon host. Growing evidence suggests that specific microbes such as *Faecalibacterium prausnitzii* and *Akkermansia muciniphila* have favorable effects on intestinal inflammation and obesity, respectively (Sokol et al. PNAS 2008, Everard et al. PNAS 2013).

However, the direct implication of these microbes on intestinal transcriptional response is unknown.



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Written by P. CANI



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## A probiotic restores mucosal barrier function after stress in animals

Seen on The American Journal of Physiology  
Da Silva S, *et al.* - 2014

Using a stress model in animals, Da Silva and colleagues induced gut hyperpermeability and visceral hypersensitivity as well as a shift in O-glycosylation of mucins, associated with flattening and loss of the mucus layer cohesive properties.

The probiotic *L. farciminis* bound to intestinal Muc2 prevented stress-induced functional alterations and changes in mucin O-glycosylation and mucus physical properties and restored epithelial and mucus barrier strengthening.



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Written by P. ENCK



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## Establishment of intestinal microbiota during early life

Seen on Applied and Environmental Microbiology  
Bergström *et al.* - 2014

Bergström and colleagues monitored 330 healthy Danish infants at 9, 18, and 36 months after birth targeting 31 selected bacterial species using quantitative PCR assays. As expected they found significant changes between 9 and 18 month which correspond to the cessation of breastfeeding and introduction of a complementary feeding. They showed that enterotype establishment occurs between 9 and 36 months but 30% of the individuals still shifted enterotype between 18 and 36 months.

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Written by J. TAP



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## Host lifestyle affects human microbiota on daily timescales

Seen on Genome Biology  
Lawrence DA *et al.* - 2014

Lawrence and colleagues tracked two subjects' microbiota over a year, collecting 800 fecal and saliva samples associated with 10,000 longitudinal measurements. They first highlighted the evidence for long-term, overall community stability, as differences between individuals were much larger than variation within individuals. They found a small subset of highly abundant core taxa can be found within each stable period.

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Written by J. TAP



## Gut microbiota protect against peanut allergen sensitization

Seen on PNAS  
Stefka AT *et al.* - 2014

Stefka and colleagues studied whether food allergy could be affected by gut microbiota. Germ-free, antibiotic treated and conventional mice have been exposed to a peanut allergen. They found that sensitization to the allergen increased in germ free and antibiotic treated mice. Using a mix of Clostridia strains, they reversed the sensitization process and demonstrate that this mix could minimize reaction to the allergen.

[Read more](#)

Written by J. TAP



The Gut Microbiota For Health Experts Exchange is a medium to share news, innovation and information between experts on the topics of Gut Microbiota for Health.

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