Francois Blachier, J Nutr Food Sci 2015, 5:6
http://dx.doi.org/10.4172/2155-9600.C1.017

OMICS International
conferenceseries.com

4th International Conference and Exhibition on
Nutrition
October 26-28, 2015 Chicago, Illinois, USA

Hyperproteic diet, intestinal microbiota and colonic epithelium: The dangerous relationships

Francois Blachier
National Institute of Agronomic Research, France

The protein consumption in countries like USA and France is largely above the recommended dietary intake and can represent more than 4 times this value in slimming hyperproteic (HP) diet. This results in increased transfer of undigested protein from the small to the large intestine. We have shown in the rat model that HP diet ingestion results in marked changes of the luminal environment of the colonic epithelial cells with modifications of the microbiota composition and its metabolic capacity. HP animals had increased colonic water content and amino acid-derived bacterial metabolites like ammonia, branched-chain fatty acids, ethanol, organic acids, hydrogen sulfide etc. Several of those latter (ammonia, hydrogen sulfide and p-cresol) are inhibitor of colonocyte respiration when present in excess. In addition, p-cresol acts as a genotoxic compound on colonocytes. Our recent results show that HP diet consumption modifies the morphology of colonocytes and the distribution of mucous cells in the colonic crypts. Lastly, by using a transcriptomic approach, we noticed that the HP diet modifies in colonocytes the expression of genes related to several cellular functions including apoptosis, cellular architecture, adhesion, immunity and DNA-damage-related events. Our team as part of a European research project consortium has undertaken a study on the effects of 3 weeks-HP diet ingestion in overweight volunteers.

Biography

Francois Blachier has obtained his PhD in 1988 from the University Pierre and Marie Curie in Paris, France. He is the Research Director at the National Institute of Agronomic Research (INRA) since 2000. He has published over 100 papers which have been cited over 2300 times (Web of Science). He is also an Academic Editor for PLOS ONE and Field Editor of Amino Acids.

francois.blachier@agroparistech.fr

Notes: