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Editorial

Just a few lines to introduce the second issue of our Journal. Looking at the index, we see something to be considered remarkable and unusual in a newborn journal not having an impact factor, which is represented by the presence of original research communications. We consider this as a clear indication of trust in the editorial project and of confidence in the future of our journal.

In this second issue we have included contributions addressing different aspects of nutrigenomic research: first of all we initiate a discussion of model systems that are being used or appear to be promising for research in this field. Model organisms are essential in all fields of biological research, as they allow to overcome the obvious experimental as well as ethical limitations imposed by the complexity of human organisms, especially when addressing mechanistic questions. For this reason we consider extremely important to provide our readers with a critical overview of the potentiality of different model systems and we hope the first two reviews on this topic will stimulate further contributions in this direction. Of the two reviews addressing model systems in this issue of G&N, the first one by Uwe Wenzel deals with the role of *sirtuins* (silencing information regulators), a family of NAD^+-dependent deacetylases that appear to act as "molecular sensors" in mediating the effects of caloric restriction on aging in *C. elegans*. A second review by Ruden and Lu focuses on the use of *D. melanogaster* as an expedient model for molecular nutrition studies, and in particular on how quantitative trait loci (QTL) have provided essential information to identify genes affecting triglyceride levels in *Drosophila*. Microarray analyses have shown that the expression of hundreds of genes responds to variations in dietary conditions in this organism, and these results provide the basis of interesting discussion on the possibility to transfer the information obtained using this organism to human nutrition and health.

Fly lovers will find further support to their favorite model organism in the newly introduced section of literature highlights that will be present in every issue of G&N from now on. "A sideways glance", by Maria Laura Scarino, examines in this issue three recently published papers on the molecular mechanisms regulating induction of metallothionein expression by metal ions, two of which take advantage of *Drosophila* genetics.

In this issue we have also included a review paper by Bordoni and collaborators (see page 95-106) that deals with the role of polyunsaturated fatty acids (PUFAs) in the regulation of gene expression, examining different variables that can modulate their interaction with nuclear receptors. Dietary PUFAs not only have an important role in membrane and cellular metabolism as well as in signal transduction, but also regulate gene expression in various tissues, playing a major role in carbohydrate, fatty acid, triglyceride, and cholesterol metabolism.

An update on the complex mechanisms regulating communication between probiotic bacteria and their hosts is presented in the review by Saulnier and coworkers. (see page 107-116) The clinical benefits of probiotic use are mainly attributed to the production of antimicrobial substances and to their positive interaction with the enterocytes to reinforce the intestinal epithelial barrier. Increasing evidence suggests that probiotics stimulate both specific and non-specific host immune responses.

Two research communications in this issue address a key aspect of nutrigenetic research by reporting the association of genetic polymorphisms in two distinct genes (leptin and Apolipoprotein L1 with risk of disease (Vasku et al, Page 117-125 et al). Finally, we have included a contribution reporting original techniques for quantifying the effects of dietary antioxidants on transcription factor translocation and nitric oxide production in cultured cells (Ewins et al Page 125-132).

We believe that the content of this issue will be of interest for our readers.

Roma, Italy
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