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Parallel Section 4 - Capillary Electrophoresis - Mass Spectrometry - Chair: Marina Tavares

Date: 12/12/2011

11:45-12:10 Alejandro Cifuentes (CSIC – Spain) "Foodomics study of polyphenols effect on colon cancer proliferation"

FOODOMICS STUDY OF DIETARY POLYPHENOLS EFFECT ON COLON CANCER PROLIFERATION

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Currently, advanced "omics" tools and bioinformatics are being applied in food science and nutrition together with in-vitro, in-vivo and/or clinical assays to investigate topics that were unapproachable few years ago. In this context, our group has coined and defined the term "Foodomics" as a new discipline that studies the food and nutrition domains through the application of advanced omics technologies in order to improve consumers well-being, health and confidence [1-3]. Thus, Foodomics is intended to be not only an useful and straightforward concept in the mentioned new trend, but more importantly, it is intended to be a global discipline that includes all the emerging working areas in which food (including nutrition), advanced analytical techniques (mainly omics tools) and bioinformatics are put together.

In the present work, we will show the latest results from our laboratory on the study of the anticancer activity of dietary polyphenols, comparing the use of different liquid phase-mass spectrometric techniques, CE-MS vs. LC-MS, for Metabolomics. The Metabolomic information from these hyphenated techniques is put together with Transcriptomic and Proteomic results to provide a global picture on the anticancer activity of these natural ingredients at molecular level.

REFERENCES

- [1] M. Herrero, C. Simó, V. García-Cañas, E. Ibañez, A. Cifuentes, *Mass Spectrom. Rev.* DOI 10.1002/mas (2011).
- [2] M. Herrero, V. García-Cañas, C. Simo, A. Cifuentes, *Electrophoresis* **31**, 205-228 (2010).
- [3] A. Cifuentes, *J. Chromatogr. A* **1216**, 7109-7110 (2009).