

## **Curriculum vitae**

Prof. **Alfredo Micheli**, MD, aggregate professor (confirmed researcher) in the Physical-Chemistry disciplinary sector (CHIM02). Affiliated to the Department of Chemistry, Sapienza University of Roma.

### **Teaching:**

From 2003 to date: Physical Chemistry module (3 CFU, CHIM02), Cellular Biotechnologies course: bachelor degree in Biological Sciences;

from 2006 to date: course “Spectroscopic methods and models for metabolomics: theory and applications” (6 CFU, CHIM02) of the “Laurea Magistralis” in: 1) Genomics and Molecular Biology, 2) Neurobiology;

from 2015 to date: course “Spectroscopic methods and models for metabolomics: theory and applications” (6 CFU, CHIM02) of the “Laurea Magistralis” in Genomic, Industrial and Environmental Biotechnologies.

### **Advanced Teaching:**

2012 to date: member of the board of the research doctorate course in Morpho-functional Sciences (section of Biophysics).

### **Affiliations and membership:**

2014 - : Member of the board of Metabolomics Unit of Sapienza;

2013 - : Associated member of the CNR Institute of Crystallography, research field: application of <sup>1</sup>H multinuclear NMR based in the field of nutrition and food quality;

2011 - 2013: OMICA platform of the CNR Department of Chemical Sciences and Materials, acting as co-manager of the Metabolomics for Nutrition and Nutraceutic Unit;

2009 - 2012: Associated member of the CNR Institute of Chemical Methodologies;

2005 - 2007: Member of the Associazione Italiana di Metabolomica (AssiMet), elected as vice-president;

2005: Member of the “**Metabolomics Standard Initiative**” of Metabolomics Society.

### **Conference organizing committees:**

2015: Member of the Organizing Committee of the 8th European Symposium on Biopolymers (Rome)

2006, 2007: Member of the Organizing Committee, and teacher, of the 1<sup>st</sup> and 2<sup>nd</sup> International Schools on Metabolomics, organized by AssiMet (Latina and Rome, respectively).

2006: Member of the Organizing Committee of the “First Maga Circe Conference on Metabolic Systems Analysis”(Sabaudia).

### **Project managing of public and private scientific initiatives (last five years):**

2016: “Progetto di Ateneo: Attrezzature scientifiche –Grandi attrezzature.” Title: ”High resolution NMR spectroscopy: from molecular structure to foods, nutrition and human health.” Funding: 660.0000 Euros.

2015: “Fondo Europeo Agricolo per lo sviluppo rurale (FEASR)”, Reg. CE 1698/2005, “Programma di Sviluppo rurale Abruzzo 2007/2013; Misura 1.2.4. Progetto G.A.P.INNO.” “Gestione di avanzate pratiche per l’innovazione della filiera orticola del Fucino”. 102.000 Euros;

2013 - 2014: Research private funding (CD investments - Chemistry Department research agreement) for NMR-based metabolomics analysis applied to investigations of the probiotic effects in different diseases. The study was focused to evaluation of the interaction between the microbiota

and the host metabolism by metabolomic analysis on biological fluids (maternal milk, urines, faecal waters, serum and saliva) in different physiopathological states. Funds: 44.000 Euros;  
2012 - 2013: Research funding (INRAN - Chemistry Department research agreement, currently CREA-NUT/ Chemistry Department agreement) for NMR-based metabolomics analysis applied to investigations of the probiotic effects in animal obesity model. Funds: 19.000 Euros;

2011 - 2012: Research private funding (CD investments - Chemistry Department research agreement) for NMR-based metabolomics analysis applied to investigations of the probiotic effects in different diseases. Funds: 18.000 Euros.

**Participations to International Scientific projects (last five years):**

2015 - : Joint Project Initiative Health Diet –Health Life (HDHL), ENPADASY project, HORIZON 2020, together with prof. Federico Marini (co-proponent of the project). The project concerns data sharing of NMR-based metabolomics applied to nutritional interventional studies;

2011 - 2015: ECOBIOCAP FP7 2011-2015 GA 265669 project (Ecoefficient biodegradable composite Advanced packaging), expert of metabolic analysis of micro organisms by <sup>13</sup>C NMR.

**Participations to National Scientific projects (last five years):**

2018 - WE-MET Sustainable wastewater treatment coupled to energy recovery with microbial electrochemical technologies.

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2015: “Fondo Europeo Agricolo per lo sviluppo rurale (FEASR)”, Reg. CE 1698/2005, “Programma di Sviluppo rurale Abruzzo 2007/2013; Misura 1.2.4. Progetto VAL.F.O.O.D” “Gestione di avanzate pratiche per l’innovazione della filiera orticola del Fucino”. 41.000 Euros;

2011 - 2014: CNR project “FaReBio di qualità Farmaci e Reti Biotecnologiche di Qualità”, funded by the Ministero dell’Economia e Finanze.

**Editorial board membership:**

Current Metabolomics

**Reviewer of Eu projects:**

2016: reviewer of Eu-Project FP7 : MD PAEDIGREE; scientific monitoring of the 2th year.

**Reviewer of National projects:**

2014 - 2015: reviewer of SIR projects as an expert in metabolomics and systems biology

**Reviewer for International journals as an expert of metabolomics**

Nature group: Nature Communications, Int.J.Obesity,

American Chemical Society: Journal of Proteomics Research, Analytical Chemistry, Journal of Agricultural and Food Chemistry;

Journal of Nutrition, PLOS ONE; Metabolomics, Int. J Cancer, Gene and Nutrition, Proteomics, Applied Biochemistry and Biotechnology, European Journal of Nutrition, Pediatric Obesity, Nutrition Review, Aging, Food Control, New Biotechnology, Current Metabolomics.

Author of more than 85 scientific publications on international journals, over the last 15 years his scientific activity has been addressed to the development of the application of NMR spectroscopy to

metabolomic analysis in biological systems. His research activities have attained mainly the following research fields: 1) in vivo NMR imaging and spectroscopy; 2) in vitro and in vivo studies of metabolism of cells, perfused organs and living tissues by multinuclear NMR spectroscopy; 3) structure and properties of hydrogel matrices; 4) functional and metabolic evaluation of bioreactors for entrapped cells in hydrogel matrices by NMR techniques; 5) NMR-based metabolic profiling and metabolomic analysis of microorganisms, cells, tissue, plants, animals and human; 6) Microbiota and host interaction studies by NMR-based metabolomics; 7) food quality control by NMR spectroscopy.