

## *Curriculum vitae*

### **Mariapina D'Onofrio**

#### **Personal details**

*Date of birth:* 3/11/1975

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#### **Education**

2000-2003: PhD in Chemistry, University of Modena and Reggio Emilia. Dissertation title: "Spectroscopic studies of the structure and properties of antioxidant metallo-enzymes", Supervisor: Prof. Marco Sola.

1993-1999: Degree in Chemistry, University of Modena and Reggio Emilia. Thesis title: "Redox Thermodynamics of Low-Potential Iron-Sulfur Proteins" Supervisor: Prof. Marco Sola. Final grade 110/110.

#### **Present activity**

Jun 2011 **University of Verona, Department of Biotechnology** assistant professor of organic chemistry

#### **Position and Employment**

Jan 2007-May 2011 Permanent position at the **University of Verona, Department of Biotechnology** as expert technician responsible for the maintenance of the NMR instrument 600 MHz with Cryoprobe.

Mar 2006- Dec 2006 Employed at ProtEra s.r.l., a spin-off company of the University of Florence. The duties were the coordination of the biotechnology department, focused on selection, expression, and purification of recombinant proteins.

Sept 2004- Feb 2006 **University of Frankfurt a. M. and ProtEra s.r.l.**

EU Marie Curie Host Fellowship for the Transfer of Knowledge (TOK). The fellowship was intended to transfer the knowledge of production purification, and NMR characterization of recombinant proteins to be used for drug discovery research from the University to the small enterprise ProtEra.

Jul 2004- Aug 2004 Employed at ProtEra s.r.l., a **spin-off company** of the University of Florence. The duties were the coordination of the biotechnology department, focused on selection, expression, and purification of recombinant proteins for research and commercial use.

Jun 2003-Jul 2004 **Department of Biochemistry, University of Maryland, College Park** postdoctoral fellow, advisor Prof. Fushman. Project: NMR structural and dynamic investigation of poly-ubiquitin chains in complex with exogenous ligands and physiological partners.

Feb 2000- Feb 2003 **PhD student at the Department of Chemistry, University of Modena and Reggio Emilia and at CERM (Centro di Risonanze Magnetiche), University of Florence** fellowship in the group of Prof. Bertini and Prof. Banci. Project: expression and NMR structural studies of the copper binding proteins: SOD, CopA, Menkes protein.

### **Current Research Interests**

- Chemistry and structure of proteins
- NMR spectroscopy
- Protein-ligand and protein-protein interaction
- Nanoparticles
- Chemical modification of proteins

### **Summary of the research activity of the last ten years**

- Synthesis of polyubiquitin chains and their interaction with organic nanoparticles. Optimization of a semi-synthetic method to ubiquitinate different substrates.
- In collaboration with a research group in Novartis Vaccine in Siena, I have characterized by NMR the structure of the wild type and mutants enzymes and substrates involved in the molecular assembly of bacterial pili.
- NMR studies on liver Fatty Acid Binding Proteins and liver and ileal Bile Acid Binding Proteins. Characterization of the binding properties with physiological ligands (fatty acids and bile acids) and synthetic molecule (potential contrast agents) both in diluted solution and in crowded environment.
- Characterization of protein-nanoparticle interactions using an integrated approach (NMR, fluorescence spectroscopy, dynamic light scattering, and calorimetry)

### **Oral Communications**

- 6<sup>th</sup> EuCheMS Chemistry Congress, Seville, 11-15 September 2016 Title: “Biomolecular recognition by nanoparticles probed by NMR”
- XLIV National Congress on Magnetic Resonance, Rome, 28-30 September 2015 Title: “Ubiquitin-nanoparticle interactions probed by NMR”
- XXXVI National Congress of Organic Chemistry 2015, Bologna, 13-17 September 2015 Title: “Biomolecular recognition by fullereneol”
- XLI National Congress on Magnetic Resonance, Pisa, 17-19 September 2012 Title: “Exploring the ligand binding capability of human liver fatty acid binding protein”
- National Congress 2010 of Chemistry of Biological Systems, San Vito di Cadore (BL), 9-11 September 2010 Title: “An NMR study on human Liver FABP as carrier for MRI contrast agents”
- XXXVIII National Congress on Magnetic Resonance, Bressanone (BZ), 10-13 September 2008 Title: “Lipid Trafficking: Unfolding and Binding features of Liver Intracellular Bile Acid Binding Proteins”

## **Funding**

- Alzheimer's Association Research Grant granted by Alzheimer's Association (from 15/01/18 to 14/01/21) Project title: “Role of polyubiquitination in Alzheimer’s disease”. Role: PI
- Progetto Ricerca di Base 2015 granted by University of Verona (from 1/10/16 to 30/09/18) Project title: “Semi-synthesis and structural studies of ubiquitinated Tau”. Role: PI
- Joint Project 2010 granted by University of Verona, in collaboration with Novartis Vaccines and Diagnostics srl (Siena) (from 1/09/11 to 31/12/14). Project title: “NMR structural studies on the mechanisms of pilus assembly in Gram-positive Streptococcus agalactiae (Group B streptococcus)” Role: PI starting from 1/12/12.