

Curriculum Vitae of Simone Ciofi Baffoni

Date of birth: 25 October 1971

Place of birth: Florence (ITALY)

Nationality: Italian

Affiliations: Magnetic Resonance Center, University of Florence, Via L. Sacconi 6, 50019 Sesto Fiorentino, Italy

AND

Department of Chemistry "Ugo Schiff", University of Florence, Via della Lastruccia 3, 50019 Sesto Fiorentino, Italy

Present position: Associate Professor at the Department of Chemistry of the University of Florence

Higher Education

- ✓ June 1996 Bachelor's degree in Chemistry "110/110 cum laude" at the University of Florence;
- ✓ November 1996-March 2000 PhD Degree in Chemical Sciences at the University of Florence;

Positions and honours

- ✓ July 2000-June 2004: Postdoctoral researcher (Assegno di Ricerca) at the Department of Chemistry of the University of Florence; field of interest: Structural Biology and Solution NMR;
- ✓ July 2004-June 2005: Postdoctoral researcher at the "Consorzio Interuniversitario Risonanze Magnetiche di Metalloproteine Paramagnetiche - CIRMMMP", Florence; field of interest: Structural Biology and Solution NMR;
- ✓ July 2005- December 2011: Assistant Professor at the Department of Chemistry of the University of Florence; field of interest: Molecular basis of copper trafficking/homeostasis in humans and related human diseases, and oxidative protein folding in mitochondria;
- ✓ January 2012- present: Associate Professor at the Department of Chemistry of the University of Florence; field of interest: Fe/S protein biogenesis in humans and related human diseases.
- ✓ December 2012 and 2019: Simone Ciofi Baffoni has been judged to be eligible to become Full Professor in a national selection by the Italian Ministry of the Education, University and Research ("Abilitazione Scientifica Nazionale-MIUR; Settore Concorsuale: 03/B1").
- ✓ Arturo Leone Young Investigator Award - Year 2014. International award given to young researchers that fundamentally contributed with their research to the "copper in biology" field. Assigned by the Awards Committee of the biannual "International Copper meeting".

- ✓ Member of the Editorial Advisory Board of the Journal of Biological Inorganic Chemistry-JBIC.
- ✓ Member of the International History Board of the biannual International Copper Meeting, the most relevant conference in “the copper in biology” field.
- ✓ Member of the Society for Biologic Inorganic Chemistry – SBIC.
- ✓ Member of the Academic Board of the International Doctorate in Structural Biology of the University of Florence from 2008 until present.
- ✓ Faculty member of CERM, a center for research, knowledge transfer, and higher education of the University of Florence.
- ✓ Invited speaker at the EMBO course "EMBO BioXAS Practical course on metalloproteins and organism tissue" at EMBL Hamburg (GERMANY), 2005.
- ✓ Organizer of the “SPINE2 (EU-FP7 project) Workshop - NMR for characterizing protein-protein complexes” at CERM (ITALY), 2008.
- ✓ The article published on *Structure* (Balatri E, Banci L, Bertini I, Cantini F, Ciofi-Baffoni S. *Structure*, 2003, 11:1431) presenting the first structure of a protein important in the assembly of cytochrome *c* oxidase has been presented and commented in a preview by Prof. Dennis Winge (*Structure*, 2003, 11:1313).

Expertise and qualification

Simone Ciofi Baffoni has been dedicated since his PhD studies to biomolecular NMR spectroscopy, to NMR solution structure determination of proteins and protein complexes, and to exploit NMR observables to define uniquely the position of a metal ion/cofactor in a protein structure. Since 2002, he has been involved in the first Europe-wide Structural Genomics four-year project (Structural Proteomics in Europe - SPINE funded by the European Commission in the Framework 5 Research and Technological Development Programme) to implement automated processes for structural biology. He actively contributes to develop a pipeline procedure for protein structure determination by solution NMR (see for details Ab E *et al.* NMR in the SPINE Structural Proteomics project, *Acta Crystallogr D Biol Crystallogr.* 2006 Oct;62(Pt 10):1150-61), concentrating on protein structures of important human metalloproteins involved in human diseases and disorders. He was then involved in the second phase of the SPINE protein structure initiative, the four-year project SPINE2-Complexes. The project was funded through FP6 Framework Research and Technological Development Programme and was targeted to the development and application of methods for the efficient determination of atomic resolution structures of protein-protein and protein-ligand complexes relevant to human health. Thanks to this eight years’ work and training experience in contact with European top-level scientists in structural biology and participating to numerous training activities within SPINE and SPINE-Complexes EU projects, Simone Ciofi Baffoni has acquired top-level knowledge and cutting-edge skills in structural biology and protein-protein interaction by solution NMR spectroscopy. Thanks to this acquired competences, Simone Ciofi Baffoni is now actively involved in Instruct, a pan-European research infrastructure in structural biology, making high-end technologies and methods available to European users, in the EU project iNEXT, an Infrastructure for NMR, EM and X-rays for Translational Research.

Research activity

Research activities of Simone Ciofi Baffoni are mainly focused on i) the cellular mechanisms controlling the intracellular concentration and distribution of copper ions and the related human diseases, ii) the oxidative protein folding mechanisms required for the import and assembly of mitochondrial intermembrane space proteins, and iii) the cellular mechanisms responsible of the Fe/S protein biogenesis in humans and the related human diseases. These studies involved the investigation of metal(cofactor)-protein interactions, protein-protein interactions, and structural characterization of protein-protein adducts, through the application of an integrated structural biology approach which exploits a vast number of biophysical and biochemical techniques. Simone Ciofi Baffoni contributed to the discovery of protein-protein interactions that are driven by metal ions, a phenomenon that can be important in tuning various cellular processes.

Simone Ciofi Baffoni has significantly impacted at the international level to the discipline “Metals in Biology”. This emerges from:

- i) his works published on *Nature* (*Nature* 2010 Jun 3;465(7298):645-8; *Nature* 2016 Aug 11;536(7615):205-9), representing fundamental contributions on cellular copper trafficking and Fe/S protein maturation;
- ii) his interactions and joint publications with scientists renowned in the field of metal ions in biological processes, such as Prof. Dennis Winge (University of Utah, USA), Prof. Thomas O’ Halloran (Northwestern University, USA), Prof. Nigel J. Robinson (University of Duhram, UK), Prof. Kostas Tokatlidis (University of Glasgow, UK), Prof. Roland Lill (University of Marburg, Germany);
- iii) his involvement in the organization of four editions of the “International Copper Meeting: Copper in Biology” (2012, 2014 and 2016, 2018), the most important conference in “the copper in biology” field;
- iv) his participation as speaker to prestigious international meetings and conferences on metals in biology, such as International Meeting of the Institute of Metals in Biology of Grenoble, Gordon Research Conference “Cell Biology of Metals”, International Copper Meeting: Copper in Biology, European Biological Inorganic Chemistry Conference, FeSBioNet Meeting;
- v) being WG leader and Management Committee member of the EU COST project on "The Biogenesis of Iron-Sulfur Proteins: from Cellular Biology to Molecular Aspects" founded by European Community from 2016;
- vi) having received the “Arturo Leone Young Investigator Award”, which is a prestigious, international award given to young researchers that fundamentally contributed with their research to “copper in biology” field.

Simone Ciofi Baffoni has co-authored 79 publications in peer-reviewed international journals with a fundamental contribution to the majority of them (alphabetical order is used in almost all publications), and is author of a book chapter describing metal-mediated interactions. The quality of his publications is very high as can be appreciated from his research contributions published on high impact journals such as *Nature*, *Nat. Chem. Biol.*, *Nat. Struct. Mol. Biol.*, *PNAS*, *JACS*, and *Elife*.

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Conference Talks

- “First International Meeting of the Institute of Metals in Biology of Grenoble, Homeostasis of Metals” at Villard de Lans (FRANCE), **2004**; (Invited Speaker)
- “Congresso della Divisione di Chimica dei Sistemi Biologici della Società Chimica Italiana” at Belvedere di San Leucio (ITALY), **2004**; (Invited Speaker)
- “EMBO BioXAS Practical course on metalloproteins and organism tissue” at EMBL Hamburg (GERMANY), **2005**; (Invited Speaker)
- “XXXV National Congress on Magnetic Resonance” at Monte Porzio Catone (ITALY), **2005**; (Invited Speaker)
- “SPINE2- First Annual Congress” at Prague (CZECH REPUBLIC), **2007**; (Invited Speaker)
- “FASEB Summer Research Conference - Assembly of the Mitochondrial Respiratory Chain” at Tucson (USA), **2007**; (Invited Speaker)
- Gordon Research Conference “Cell Biology Of Metals - Metal Metabolism And Disease” at Newport (USA), **2009**; (Invited Speaker)
- “SGM Autumn Conference” at Nottingham (UK), **2010**; (Invited Speaker)
- “International Copper Meeting: Copper in Biology” Alghero (ITALY), **2010**; (Invited Speaker)
- “Eurasia 2012” at Corfu (GREECE), **2012**; (Plenary Speaker)
- “International Copper Meeting: Copper in Biology” Alghero (ITALY), **2012**; (Invited Speaker)
- “XLI Congresso Nazionale di Chimica Inorganica” at Parma (ITALY), **2013**; (Invited Speaker)
- “Strategic pipeline planning: from sample preparation to 3D structure determination with bio SAXS & other biophysical techniques” at Athens (GREECE), **2014**; (Invited Speaker)
- “12th European Biological Inorganic Chemistry Conference (EuroBIC 12) at Zurich (SWITZERLAND), **2014**; (Invited Speaker)
- “XLIII National Congress GIDRM” at Bari (ITALY), **2014**; (Invited Speaker)
- “9th International Copper Meeting-Copper 2014” at Vico Equense (ITALY), **2014**; (Invited Speaker)
- “FeSBioNet Meeting” at Patras (GREECE), **2016**; (Invited Speaker)
- “First All Hands Meeting of iNEXT (iNEXT AHM 2016)” at Madrid (SPAIN), **2016**; (Invited Speaker)
- “XXIII Biotechnology Summer School” at Gdansk (POLAND), **2017**; (Invited Speaker)
- “XXVI Congresso Nazionale della Società Chimica Italiana” at Paestum (ITALY), **2017**; (Plenary Speaker at the Divisione di Chimica dei Sistemi Biologici)
- “Copper 2018 - 11th International Copper Meeting” at Sorrento (ITALY), **2018**; (Invited Speaker)

“4th FESBIONET COST meeting” at Gdansk (POLAND), 2019; (Invited Speaker)

Organization of Conferences and Workshops

“SPINE2 Workshop - NMR for characterizing protein-protein complexes” (April 16-18, 2008), organizer

“Worldwide Magnetic Resonance Conference 2010” (July 4-9, 2010), member of the organizing committee

“8th International Copper Meeting, Copper in Biology” (September 30-October 5, 2012), member of the organizing committee

“9th International Copper Meeting” (October 5-10, 2014), member of the organizing committee

“10th International Copper Meeting” (September 27- 30, 2016), member of the finance and history committee

“11th International Copper Meeting” (September 23-28, 2018), member of the finance and history committee

S. Ciofi Baffoni was a Principal Investigator in the following research project:

Research project financed by Ente Cassa di Risparmio di Firenze "Molecular determinants of multiple mitochondrial dysfunctions syndromes"

Duration: 1/06/2020-1/06/2021

Grant/research team: € 65000,00

Research project financed by Ente Cassa di Risparmio di Firenze "Structural characterization of iron proteins as potential targets for the development of new vaccines"

Duration: 1/07/2014-1/1/2016

Grant/research team: € 70000,00

S. Ciofi Baffoni was a participant in the following Networking/Infrastructure projects:

Cost Action CA15133 "The Biogenesis of Iron-sulfur Proteins: from Cellular Biology to Molecular Aspects (FeSBioNet)"

Duration: 15/04/2016-14/04/2020

EU Grant: € 445000,00

iNEXT "Infrastructure for NMR, EM and X-ray crystallography for translational research"

Duration: 01/09/2015-31/08/2019

EU Grant: € 740.696,00

IMPATTO "IMPLEMENTAZIONE di procedure per un'infrastruttura A sostegno del Trasferimento tecnologico e della creazione d'impresa in aree sottoutilizzate della Toscana nell'ambito delle scienze della vita"

Duration: 13/06/2012-30/11/2014

Grant from the Ministero Sviluppo Economico: € 133.946,00

S. Ciofi Baffoni was a participant in the following research projects:

MEDINTECH "Tecnologie convergenti per aumentare la sicurezza e l'efficacia di farmaci e vaccini"

Duration: 01/01/2014-30/06/2018

MIUR Grant: € 666.175,00

Progetti Competitivi – FFO2016 "Sviluppo di metodologie NMR per le scienze sperimentali"

Duration: 14/06/2017-13/06/2018

MIUR Grant: € 228.793,00

POR Biovax "Vaccini biotecnologici da genomica strutturale"

Duration: 01/01/2011-12/09/2014

Regione Toscana Grant: € 1.000.502,40

PRIN09 "Biologia strutturale meccanicistica: avanzamenti metodologici e biologici"

Duration: 17/10/2011-17/10/2013

MIUR Grant: € 280.000,00

FIRB "Rete Nazionale per lo studio della Proteomica Umana (Italian Human ProteomeNet)"

Duration: 24/09/2008-24/06/2013

MIUR Grant: € 1.415.240,00

PRIN 2007 - "Gli ioni metallici nelle interazioni proteina-proteina"

Duration: 22/09/2008-22/09/2010

MIUR Grant: € 416.000,00

FIRB "Piattaforme NMR per lo studio dell'interazione proteine-leganti di interesse farmacologico"

Duration: 12/09/2005-12/09/2010

MIUR Grant: € 1.803.000,00

SPINE II "From Receptor to Gene: structures of complexes from signalling pathways linking immunology, neurobiology and cancer"

Duration: 01/07/2006 – 30/06/2010

EC Grant: € 600.500,80