

CURRICULUM VITAE

Name: Chiara Ciaccio

Date of birth: August 15, 1974

Place of birth: Rome, Italy

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EDUCATION and RESEARCH EXPERIENCE

1993: High school diploma “Maturità classica”

1999-2000: As an undergraduate student at Laboratory of the Department of Experimental Medicine and Biochemical Sciences, University “Tor Vergata”, Rome, Italy

2000: Degree in Biological Sciences at University of Rome “Roma tre” with mark 110/110 cum Laude.

October 2000- Present 2004: PhD student in Biochemistry and Molecular Biology, Department of Experimental Medicine and Biochemical Sciences, University of Rome “Tor Vergata” (Supervisor: M.D Massimo Coletta).

2001: National School for PhD students: “Modelling and Nuclear Magnetic Resonance: interaction between macromolecules and ligands”, University of Verona, Italy.

January-September 2003: Visiting scientist as a PhD student in the Metalloprotein Research Group, Institute of Biochemistry, Department of Chemistry, BOKU-University of Natural Resources and Applied Life Sciences. Vienna, Austria (Supervisor: M.D Christian Obinger).

2004: Theoretical and practical advanced course in Rapid Kinetic, University of Varese, Italy.

2004: International school: “Physics meets Biology”, Institute of Solid State Research (IFF), Jülich, Germany.

2004-2005: Held research fellow position from C.I.R.C.M.S.B. (Consorzio interuniversitario di ricerca in chimica dei metalli nei sistemi biologici) at Department of Experimental Medicine and Biochemical Sciences University of Roma Tor Vergata working on "*Functional and structural characterization of mammalian peroxidases*"

02-12/2005: Postdoctoral Fellowship from C.I.R.C.M.S.B. (Consorzio interuniversitario di ricerca in chimica dei metalli nei sistemi biologici) at Department of Experimental Medicine and Biochemical Sciences, University “Tor Vergata”, Rome, Italy

2006: Italian professional abilitation to biological public work

2005-2007: Research fellowship from C.I.R.C.M.S.B. (Consorzio interuniversitario di ricerca in chimica dei metalli nei sistemi biologici) at Department of Experimental Medicine and Biochemical Sciences, University “Tor Vergata”, Rome, Italy

2008: Scientific Technician at Department of Clinical Science and Translational Medicine, University “Tor Vergata”, Rome, Italy

2017 : National Scientific Qualification to function as associate professor in Italian Universities.

ORAL COMMUNICATIONS

4th Simposio Pharmaco-Bio-Metallics, Lecce, Italy, 2004: “*Relationships of ligand binding, redox properties and protonation in Coprinus Cinereus peroxidase*”.

5th Symposium Pharmaco-Bio-Metallics, Bertinoro, Italy, 2005: “*Kinetic studies on the peroxinitrite reaction with mammalian peroxidases*”

VII International peroxidase conference, Aveiro, Portugal, 2006: “*Recombinant human eosinophil peroxidase: stable expression and purification of fully active enzyme*”.

Convegno nazionale di Chimica dei Sistemi Biologici, Napoli, Italy, 2006: “*Caratterizzazione della degradazione di forme aggregate dell’insulina umana da parte dell’insulina*”.

SPECIAL SKILLS

Competent in rapid kinetic techniques, UV and circular dichroism spectroscopy, protein purification procedures.

Computer skills: competent user of Windows (Word, Excel, Explorer, Power Point, CorelDraw, Adobe Photoshop), Matlab, MS Dos, Spdbv.

Languages: Fluent in Italian and English.

LIST of PUBLICATIONS:

Ciaccio C, Tognaccini L, Battista T, Cervelli M, Howes BD, Santucci R, Coletta M, Mariottini P, Smulevich G, Fiorucci L., The Met80Ala and Tyr67His/Met80Ala mutants of human cytochrome c shed light on the reciprocal role of Met80 and Tyr67 in regulating ligand access into the heme pocket. *J Inorg Biochem.* 2017 Apr;169:86-96.

Ciaccio C, Di Pierro D, Sbardella D, Tundo GR, Curatolo P, Galasso C, Santarone ME, Casasco M, Cozza P, Cortelazzo A, Rossi M, De Felice C, Hayek J, Coletta M, Marini S., Oxygen exchange and energy metabolism in erythrocytes of Rett syndrome and their relationships with respiratory alterations. *Mol Cell Biochem.* 2017 Feb;426(1-2):205-213.

Tundo GR, Di Muzio E, **Ciaccio C**, Sbardella D, Di Pierro D, Polticelli F, Coletta M, Marini S., Multiple allosteric sites are involved in the modulation of insulin-degrading-enzyme activity by somatostatin. *FEBS J.* 2016 Oct;283(20):3755-3770.

Tognaccini Lorenzo, **Ciaccio C**, D'Oria Valentina, Smulevich Giulietta A., Fiorucci Laura, Cervelli Manuela, Howes Barry D., Coletta Massimo, Mariottini Paolo (2016). Structure-function relationships in human cytochrome c: The role of tyrosine 67. *J. Inorg. Biochem.*, ISSN: 0162-0134.

Santoro AM, Cunsolo A, D'Urso A, Sbardella D, Tundo G.R, **Ciaccio C**, Coletta M, Diana D, Fattorusso R, Persico M, Di Dato A, Fattorusso C, Milardi D, Purrello R (2016). Cationic porphyrins are tunable gatekeepers of the 20S proteasome. *Chemical Science*, ISSN: 2041-6520.

Tundo GR, Sbardella D, De Pascali SA, **Ciaccio C**, Coletta M, Fanizzi FP, Marini S. Novel Platinum(II) compounds modulate insulin-degrading enzyme activity and induce cell death in neuroblastoma cells. *J Biol Inorg Chem*. 2015.

Sbardella D, Tundo GR, Sciandra F, Bozzi M, Gioia M, **Ciaccio C**, Tarantino U, Brancaccio A, Coletta M, Marini S. Proteasome Activity Is Affected by Fluctuations in Insulin-Degrading Enzyme Distribution. *PLoS One*. 2015 Jul 17;10(7):e0132455

Ciaccio C, Ocaña-Calahorro, F, Droghetti E, Tundo G.R, Sanz-Luque E, Polticelli F, Visca P, Smulevich G, Ascenzi P, Coletta M. (2015). Functional and spectroscopic characterization of *Chlamydomonas reinhardtii* truncated hemoglobins. *PLOS ONE*, ISSN: 1932-6203.

Ascenzi P1, Marino M, **Ciaccio C**, Santucci R, Coletta M. Reductive nitrosylation of the cardiolipin-ferric cytochrome c complex. *IUBMB Life*. 2014.

Ascenzi P, Leboffe L, Pesce A, **Ciaccio C**, Sbardella D, Bolognesi M, Coletta M. Nitrite-reductase and peroxynitrite isomerization activities of *Methanosarcina acetivorans* protoglobin. *PLoS One*. 2014.

Ascenzi P, Coletta A, Cao Y, Trezza V, Leboffe L, Fanali G, Fasano M, Pesce A, **Ciaccio C**, Marini S, Coletta M. Isoniazid inhibits the heme-based reactivity of *Mycobacterium tuberculosis* truncated hemoglobin N. *PLoS One*. 2013 Aug 1;8(8):e69762.

Pesce A, Tilleman L, Donné J, Aste E, Ascenzi P, **Ciaccio C**, Coletta M, Moens L, Viappiani C, Dewilde S, Bolognesi M, Nardini M. Structure and haem-distal site plasticity in *Methanosarcina acetivorans* protoglobin. *PLoS One*. 2013 Jun 12;8(6):e66144.

Bocedi A, De Sanctis G, **Ciaccio C**, Tundo GR, Di Masi A, Fanali G, Nicoletti FP, Fasano M, Smulevich G, Ascenzi P, Coletta M. Reciprocal allosteric modulation of carbon monoxide and warfarin binding to ferrous human serum heme-albumin. *PLoS One*. 2013;8(3):e58842.

Ciaccio C, Pesce A, Tundo GR, Tilleman L, Bertolacci L, Dewilde S, Moens L, Ascenzi P, Bolognesi M, Nardini M, Coletta M. Functional and structural roles of the N-terminal extension in *Methanosarcina acetivorans* protoglobin. *Biochim Biophys Acta*. 2013 Sep;1834(9):1813-23

Ascenzi P, Pesce A, Nardini M, Bolognesi M, **Ciaccio C**, Coletta M, Dewilde S. Reductive nitrosylation of *Methanosarcina acetivorans* protoglobin: a comparative study. *Biochem Biophys Res Commun*. 2013 Jan 25;430(4):1301

Grasso G, Salomone F, Tundo GR, Pappalardo G, **Ciaccio C**, Spoto G, Pietropaolo A, Coletta M, Rizzarelli E. Metal ions affect insulin-degrading enzyme activity. *J Inorg Biochem*. 2012 Dec;117:351-8.

Tundo G.R., **Ciaccio C.**, Sardella D., Marini S., and Coletta M., Somatostatin modulates insulin-degrading-enzyme metabolism: implication for alzheimer's disease pathogenesis. *PLoS One*. 2012;7(4):e34376

Abbruzzetti S, Tilleman L, Bruno S, Viappiani C, Desmet F, Van Doorslaer S, Coletta M, **Ciaccio C**, Ascenzi P, Nardini M, Bolognesi M, Moens L, Dewilde S. Ligation tunes protein reactivity in an ancient haemoglobin: kinetic evidence for an allosteric mechanism in *Methanosarcina acetivorans* protoglobin. *PLoS One*. 2012;7(3):e33614

Sbardella D, Fasciglione GF, Gioia M, **Ciaccio C**, Tundo GR, Marini S, Coletta M. Human matrix metalloproteinases: an ubiquitarian class of enzymes involved in several pathological processes. *Mol Aspects Med*. 2012 Apr;33(2):119-208.

Ascenzi P, di Masi A, Gullotta F, Mattu M, **Ciaccio C**, Coletta M., Reductive nitrosylation of ferric cyanide horse heart myoglobin is limited by cyanide dissociation. *Biochem Biophys Res Commun*. 2010 Mar 5;393(2):196-200.

Ascenzi P, De Marinis E, di Masi A, **Ciaccio C**, Coletta M., Peroxynitrite scavenging by ferryl sperm whale myoglobin and human haemoglobin, *Biochem Biophys Res Commun*. 2009 Dec 4;390(1):27-31

Ascenzi P, De Marinis E, Visca P, **Ciaccio C**, Coletta M., Peroxynitrite detoxification by ferryl *Mycobacterium leprae* truncated hemoglobin O, *Biochem Biophys Res Commun*. 2009 Mar 6;380(2):392-6.

Ascenzi P, di Masi A, Coletta M, **Ciaccio C**, Fanali G, Nicoletti FP, Smulevich G, Fasano M., Ibuprofen impairs allosterically peroxynitrite isomerization by ferric human serum heme-albumin, *J Biol Chem*. 2009 Nov 6;284(45):31006-17

De Marinis E, Casella L, **Ciaccio C**, Coletta M, Visca P, Ascenzi P., Catalytic peroxidation of nitrogen monoxide and peroxynitrite by globins, *IUBMB Life*. 2009 Jan;61(1):62-73.

Ciaccio C, Tundo GR, Grasso G, Spoto G, Marasco D, Ruvo M, Gioia M, Rizzarelli E, Coletta M., Somatostatin: a novel substrate and a modulator of insulin-degrading enzyme activity, *J Mol Biol*. 2009 Feb 6;385(5):1556-67

Ciaccio C, Coletta A, De Sanctis G, Marini S, Coletta M.. Cooperativity and allostery in haemoglobin function. *IUBMB Life*. 2008 60(2):112-23.

Nicolis S, Monzani E, **Ciaccio C**, Ascenzi P, Moens L, Casella L., Reactivity and endogenous modification by nitrite and hydrogen peroxide: does human neuroglobin act only as a scavenger? *Biochem J*. 2007 Oct 1;407(1):89-99.

De Sanctis G, Petrella G., **Ciaccio C.**, Feis A., Smulevich G., Coletta M., A comparative study on axial coordination and ligand binding in ferric mini myoglobin and horse heart myoglobin. *Biophys J*. 2007; 93(6): 2135-42.

Ciaccio C, De Sanctis G, Gambacurta A, Coletta M, rhEPO Recombinant human eosinophil peroxidase): expression in *Pichia pastoris* and biochemical characterization. *Biochem J.* 2006; 395(2): 295-301.

De Sanctis G., **Ciaccio C.**, Fasciglione GF., Fiorucci L., Gioia M., Sinibaldi F., Marini S., Santucci R., Coletta M., Effect of axial coordination on the kinetics of assembly and folding of the two halves of horse heart cytochrome c., *J Biol Chem.* 2004, 279(51): 52860-8.

Ciaccio C, De Sanctis G, Marini S, Sinibaldi F, Santucci R, Arcovito A, Bellelli A, Ghibaudi E, Ferrari Rosa P, Coletta M., Proton linkage for CO binding and redox properties of bovine lactoperoxidase. *Biophys J.* 2004; 86: 448-54.

Ciaccio C, Rosati A, De Sanctis G, Sinibaldi F, Marini S, Santucci R, Ascenzi P, Welinder KG, Coletta M., Relationships of ligand binding, redox properties, and protonation in *Coprinus cinereus* peroxidase. *J Biol Chem.* 2003; 278(21):18730-7.

Sinibaldi F, Howes BD, Smulevich G, **Ciaccio C**, Coletta M, Santucci R., Anion concentration modulates the conformation and stability of the molten globule of Cytochrome c. *J Biol Inorg Chem.* 2003; 8(6): 663-70.

Feis A, Santoni E, Neri F, **Ciaccio C**, De Sanctis G, Coletta M, Welinder KG, Smulevich G., Fine-tuning of the binding and dissociation of CO by the amino acids of the heme pocket of *Coprinus Cinereus* peroxidase. *Biochemistry* 2002; 41(44): 13264-73.

Visca P, Fabozzi G, Petrucca A, **Ciaccio C**, Coletta M, De Sanctis G, Bolognesi M, Milani M, Ascenzi P., The truncated hemoglobin from *Mycobacterium leprae*. *Biochem Biophys Res Commun.* 2002; 294(5):1064-70.