



## ► Barbara Medagli

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### Higher Education

**Phd in Applied Biology**, Università degli studi Federico II Napoli, Supervisors: Prof. M. De Felice, Dr. S.Onesti (2007- 2011).

**Laurea in Biological Sciences (5 years master degree) 105/110**, Università degli studi Federico II Napoli, Supervisors: Prof. M.Rossi, Dr. F.M. Pisani, Dr. M.De Felice (Feb 2006).

► **Erasmus Exchange** program at the **Universidad de Oviedo**, Asturias, Spain (Feb – Jul 2004).

### Research experience

- **Assegno di ricerca**, Dipartimento Scienze Chimiche e Farmaceutiche - Università degli studi di Trieste; "Computational design of customised nanobodies for oncology applications" (Oct 2017-present)
- **Post-doctoral fellow**, Structural Biology Laboratory, Elettra - Sincrotrone Trieste; project: "Structural and biochemical studies of MCM proteins and the CMG complex" (Mar 2011-Jul 2017).
- **PhD thesis** "Structural and biochemical studies of MCM proteins" Supervisor: Dr. S. Onesti. Department of Life Science, **Imperial College London** (May 2007 - Apr 2008) and Structural Biology Laboratory; **Elettra - Sincrotrone Trieste** (May 2008 - Jan 2011)
- **Scientific collaboration**, Stazione Zoologica Anton Dohrn Napoli (Gen - Apr 2007), with Dr. L. Santella.
- **Diploma thesis**, (Ott 2004 – Feb 2006), IBP - Istituto di Biochimica delle Proteine – CNR, Napoli, Supervisors: Dr. F.M. Pisani, Dr. M. De Felice, "Biochemical evidence of a physical interaction between Sulfolobus solfataricus B-family and Y-family DNA polymerases".

### Work experience

- **Servizio Orientamento Studenti**, Dipartimento di Scienze Matematiche, Fisiche e Naturali - Università degli Studi di Napoli "Federico II" (part-time contract for University students, Oct 2003 - Feb 2004)
- **Responsabile database**, person in charge of the customer database (class action contro pubblica amministrazione) - Studio Legale Lauro - Piazza Giovanni Bovio,

Napoli (part-time job Jun 2003 - Feb 2004)

## Teaching And Managing experience

- **Organized and supervised practical sessions** for the following **ICTP Advanced School**:  
23-27 April **2012, Trieste**: "*From genes to atomic structures: an introduction to synchrotron-based structural biology*";  
11-22 November **2013, Cape Town**: "*Synchrotron Radiation Techniques and Nanotechnology: A Synergic Approach to Life Sciences and Medicine*";  
15 -19 December **2014, Trieste**: "*Advanced Workshop on Structural Biology: Using Synchrotron Radiation to Visualise Biological Molecules*".
- **Involved in the organization and supervision of the interactive experience** at the Elettra stand at **Trieste Next/Night of researchers 2013**, 27-29 September 2013 playing with proteins: Foldit,
- **Highly involved in the organization and supervision of numerous activities for the general public** at the Elettra stand: Facciamo luce sulle proteine, **Trieste Next 2015**, 25-27 September 2015 "BIOlogos" (school guide, interactive experiences with virtual and real molecules, Foldit)
- **Tutoring and co-supervision** of students and researchers:  
**a) undergraduates students:**  
Clara Gianetti - Università di Trieste, Laurea Triennale  
Per Janson - Master student University of Linkopings, Sweden  
Ilaria Peschiera - Università di Trieste, Laurea magistrale in Genomica Funzionale  
Elena Marcassa - Università di Trieste, Laurea magistrale in Genomica Funzionale  
Nikolas Capra - Università di Trieste, Laurea magistrale in Genomica Funzionale  
Elda Osmenaj - Università di Trieste, Laurea magistrale in Genomica Funzionale  
**b) PhD Students:**  
Patrizia Di Crescenzo - Università di Trieste, PhD in Molecular Medicine,  
Amna Abdalla Mohammed Khaled - Università di Trieste, PhD in Nanotechnology  
Georgina Ormaza - CIC Biogune Bilbao  
**C) Post Doc:** Shiva Jafarkani - ICTP-TRIL Postdoctoral Fellow.
- **Set up the Structural Biology Laboratory at Elettra:** as I joined my supervisor moving from London to a new laboratory at Elettra, I have heavily contributed to set-up the new laboratory from scratch, as well as purchasing and installing new instrumentation, and I have been then in charge of the day-to-day running of the biochemical aspects of the laboratories.

## Experimental Skills

- Bioinformatics analysis of protein sequences
- Visualization and manipulation of macromolecules by computer graphics.
- High-throughput cloning
- Protein production and purification (expression to high yield and purification with FPLC systems of a variety of proteins, protein fragments, mutants and multisubunit large complexes).
- Protein characterization: biochemical assays with radioactive isotopes or fluorescent

substrates, Western blots and immunoprecipitation, protein-protein interaction assays.

- Establishing and testing new methods and molecular biology/biochemical protocols.
- Crystallization using a robotic system, crystal optimization and data collection.
- Setting-up and programming a liquid handler robot (Tecan Freedom EVO).
- Preparation of samples for single particle electron microscopy.
- SAXS data collection and analysis.

### **Personal Skills**

- **Language:** Italian (Mother tongue);  
**Other Languages:** English, Spanish and French (good understanding, speaking and writing).
- **Digital skills:** Expert user of operating systems with graphical user interface. Great experience with different software of word processor, spread sheet, presentation software, use of web and social media.
- **Communication skills:** Due to my job I am used to present scientific results to a mixed audience, from expert scientists to the general public in outreach activities; I have started collaborations with scientists involved in different fields (from physics to medicine); I have experience at lecturing students to practical schools and workshops. I have worked in multidisciplinary multicultural teams, in Italy and abroad, as well as in laboratories belonging to both research institutes and Universities.

### **DICHIARAZIONE SOSTITUTIVA DI CERTIFICAZIONE (art. 46 e 47 D.P.R. 445/2000)**

Il/la sottoscritta Barbara Medagli consapevole che le dichiarazioni false comportano l'applicazione delle sanzioni penali previste dall'art. 76 del D.P.R. 445/2000, dichiara che le informazioni riportate nel seguente curriculum vitae corrispondono a verità:

Autorizzo il trattamento dei miei dati personali ai sensi del Dlgs 196 del 30 giugno 2003.

## Publications

- **New insights into the GINS complex explain the controversy between existing structural models.** Carroni M, De March M, **Medagli B**, Krastanova I, Taylor IA, Amenitsch H, Araki H, Pisani FM, Patwardhan A, Onesti S. *Sci Rep.* 2017 Jan 10;7:40188
- **Structure and Activity of the Cdc45-Mcm2–7-GINS (CMG) Complex, the Replication Helicase.** **B. Medagli**, P. Di Crescenzo, M. De March, S. Onesti. *Advances in Experimental Medicine and Biology* (Feb 2016)
- **The tumor suppressor inhibitor of growth 4 binds double-stranded DNA through its disordered central region.** Ormaza G, **Medagli B**, Ibáñez de Opakua A, Rodríguez JA, Merino N, Villate M, Onesti S, Blanco FJ. *FEBS Lett.* 2016 Dec 7
- **Atomic Force Microscopy and Spectroscopic Ellipsometry combined analysis of Small Ubiquitin-like Modifier adsorption on functional monolayers.** I. Solano, P. Parisse, F. Gramazio, L. Ianeselli, **B. Medagli**, O. Cavalleri, L. Casalis, M. Canepa. *Applied Surface Science* (2016)
- **<sup>1</sup>H, <sup>15</sup>N and <sup>13</sup>C chemical shift assignments for the winged helix domains of two archeal MCM C-termini.** Wiedemann C, Ohlenschläger O, **Medagli B**, Onesti S, Görlach M. *Biomol NMR Assign.* 2013 Aug 10
- **Structure and mechanism of hexameric helicases.** **Medagli B**, Onesti S. *Adv Exp Med Biol.* 2013;767:75-95. doi: 10.1007/978-1-4614-5037-5\_4.
- **Cryo-electron microscopy reveals a novel DNA-binding site on the MCM helicase.** Costa A, van Duinen G, **Medagli B**, Chong J, Sakakibara N, Kelman Z, Nair SK, Patwardhan A, Onesti S. *EMBO J.* 2008 Aug 20;27(16):2250-8. Epub 2008 Jul 24.
- **Biochemical evidence of a physical interaction between Sulfolobus solfataricus B-family and Y-family DNA polymerases.** De Felice M, **Medagli B**, Esposito L, De Falco M, Pucci B, Rossi M, Grüz P, Nohmi T, Pisani FM. *Extremophiles.* 2007 Mar;11(2):277-82. Epub 2006 Nov 3.