

Dr Filippo Prischi

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Qualifications

2013 Executive Education in Project Management, University College London (UCL). APMP (IPMA Level D) is an internationally recognised knowledge-based foundation level qualification. The course is based on the Association for Project Management's Body of Knowledge (APM BoK) and offers an effective grounding in project management suitable for projects in any industry or the public sector.

2009 Ph.D. Biochemistry - Ph.D. thesis "Biophysical studies of protein interaction" was a joint project between the Molecular Biology Department of the University of Siena and the Division of Molecular Structure at the National Institute for Medical Research (NIMR/MRC), London.

2005 MS in Molecular and Cell Biology, University of Siena, First Class Honours (110 cum laude). Thesis "Nuclear Magnetic Resonance study of proteins aggregation process".

2003 BS in Biological Sciences, University of Siena, First Class Honours (110 cum laude). Thesis "Molecular modelling of S1 and S2 subunits of SARS coronavirus spike glycoprotein".

Work Experiences

May 2010 – Present: Postdoctoral Researcher at Imperial College London, division of Molecular Bioscience (Group Leader Dr. Maruf Ali). The project I am working on focuses on gaining structural and mechanistic insights into components of the Unfolded Protein Response (UPR). Using crystallography, optical spectroscopy and other biophysical techniques my aim is to understand how the UPR signal is activated and regulated.

October 2009 – April 2010: Research Internship at the National Institute for Medical Research (NIMR/MRC) division of Molecular Structure (Group Leader Dr. Annalisa Pastore).

Committees & Professional societies

- Member of the *Biochemical Society* since 2010, constituent society of the Federation of European Biochemical Societies (*FEBS*).
- Co-Chair and Secretary of the Post-doc Committee of the Department of Life Sciences (Imperial College London) since 2011.
- Postdoc Representative for the Division of Molecular Biosciences at the Postdoc Reps Committee since 2011.
- Postdoc Representative for the Faculty of Natural Sciences at the Postdoc Development Advisory Committee since 2012.

Grants and awards

Joined in January 2007 Dr. Annalisa Pastore's group at the NIMR/MRC supported by an *EMBO Short-Term Fellowship*.

Teaching experiences

- Co-supervised five MRes in Cancer Biology students and one BBSRC Ph.D. student.
- Tutor for "Engineering, Expression, Purification and Structural Analysis" tutorial, second year BSc Biochemistry, Imperial College London (2012/13, 2013/14).
- Tutor for "Biological Chemistry" tutorial, first year BSc Biochemistry, Imperial College London (2013/14).
- Trained tutor of "Research Skills Development Course" organized by the Graduate School of the Imperial College for first and second year research students.
- Teacher of the course "Laboratory of Bioinformatics" faculty of Biotechnology, University of Siena, for four consecutive academic years (2005/06, 2006/07, 2007/08, 2008/09).

Research Expertise

PROTEIN CHEMISTRY

- Chromatographic techniques (reverse phase HPLC, gel filtration, ion exchange, affinity chromatography);
- Electrophoretic methods.

MOLECULAR BIOLOGY

- Expression and purification of recombinant proteins for biophysical and structural studies;
- Recombinant DNA techniques.

BIOPHYSICS

- UV/Vis and CD spectroscopy;
- Fluorescence spectroscopy;
- ITC, DSF and NanoTemper Microscale Thermophoresis

NMR

- Acquisition and analysis of multidimensional NMR spectra of proteins for structural studies and molecular dynamics.

X-RAY CRYSTALLOGRAPHY

- Initial screening of crystallization conditions using crystal screen reagent kits and mosquito crystallization robot;
- Optimization of crystallization conditions;
- Synchrotron data acquisition and initial analysis;
- Molecular Replacement and structure refinement.

BIOINFORMATICS

- Homology threading and ab initio modeling;
- Molecular analysis/visualization (MolMol, Swiss PDBViewer, PyMol, Coot);
- Macromolecular docking;
- Molecular dynamics (GROMACS).

INFORMATIC

Deep knowledge of operative systems (Windows, Linux, Mac) and software packages (Microsoft Office, Adobe, Corel Draw, EndNote, Origin, Prism).

Publications

1. **Prischi F**, Nowak P, Carrara M, Ali MM. Phosphoregulation of human Ire1 RNase splicing activity. *Nat. Commun.* Submitted.
2. Carrara M, **Prischi F**, Ali MM. UPR signal activation by luminal sensor domains. *International Journal of Molecular Sciences.* 2013, 14, 6454-66.
3. **Prischi F**, Konarev PV, Iannuzzi C, Pastore C, Adinolfi S, Martin SR, Svergun DI, Pastore A. Structural bases for the interaction of frataxin with the central components of iron-sulphur cluster assembly. *Nat. Commun.* 2010; 1, 95.
4. **Prischi F**, Pastore C, Carroni M, Iannuzzi C, Adinolfi S, Temussi P, Pastore A. Of the vulnerability of orphan complex proteins: the case study of the E. coli IscU and IscS proteins. *Protein Expr Purif.* 2010; 73, 161-6.
5. **Prischi F**, Giannini C, Adinolfi S, Pastore A. The N-Terminus of human frataxin is an intrinsically unfolded region. *FEBS J.* 2009; 276, 6669-76.
6. Adinolfi S, Iannuzzi C, **Prischi F**, Pastore C, Iametti S, Martin SR, Bonomi F, Pastore A. Bacterial frataxin CyaY is the gatekeeper of iron-sulfur cluster formation catalyzed by IscS. *Nat Struct Mol Biol.* 2009; 16, 390-6.
7. Bernini A, Venditti V, Spiga O, Ciutti A, **Prischi F**, Consonni R, Zetta L, Arosio I, Fusi P, Guagliardi A, Niccolai N. NMR studies on the surface accessibilità of the archaeal protein Sso7d by using TEMPOL and Gd(III)(DTPA-BMA) as paramagnetic probes. *Biophys Chem.* 2008; 137, 71-5.
8. Venditti V, Bernini A, De Simone A, Spiga O, **Prischi F**, Niccolai N. MD and NMR studies of alpha-bungarotoxin surface accessibility. *Biochem Biophys Res Commun.* 2007; 356, 114-7.
9. Spiga O, Padula MG, Scarselli M, Ciutti A, Bernini A, Venditti V, **Prischi F**, Falciani C, Lozzi L, Bracci L, Valensin PE, Cudai C, Niccolai N. Structurally driven selection of human hepatitis C virus mimotopes. *Antivir Ther.* 2006; 11, 917-22.
10. Bernini A, Spiga O, Venditti V, **Prischi F**, Bracci L, Tong AP, Wong WT, Niccolai N. NMR studies of lysozyme surface accessibility by using different paramagnetic relaxation probes. *J Am Chem Soc.* 2006; 128, 9290-1.
11. Bernini A, Spiga O, Ciutti A, Venditti V, **Prischi F**, Governatori M, Bracci L, Lelli B, Pileri S, Botta M, Barge A, Laschi F, Niccolai N. NMR studies of BPTI aggregation by using paramagnetic relaxation reagents. *BBA.* 2006; 1764, 856-62.
12. Bernini A, Spiga O, Venditti V, **Prischi F**, Bracci L, Huang J, Tanner JA, Niccolai N. Tertiary structure prediction of SARS coronavirus helicase. *Biochem Biophys Res Commun.* 2006; 343, 1101-4.

Oral Presentations at Conferences

1. **Prischi F**, Carrara M, Ali MM. Biochemical and Biophysical characterization of c-IRE1 α . OPPF-MPL HTP Protein Production and Crystallization, Research Complex at Harwell, 30 March-7April 2011.
2. **Prischi F**, Iannuzzi C, Pastore C, Adinolfi S, Martin S, Pastore A. Insights into the structure of an IscS/IscU/CyaY complex. Frataxin meeting, NIMR/MRC, London, 7-8 May 2010
3. **Prischi F**, Pastore C, Iannuzzi C, Martin S, Adinolfi S, Pastore S. Understanding the iron-sulphur cluster machinery: Characterization of the E. coli IscS/IscU complex. IIX CCPN meeting, University of Cumbria, Penrith, 5-7 August 2008.
4. **Prischi F**, Niccolai N, Pastore A. Key features of EF-HAND superfamily structure using paramagnetic probe. XXXVII National NMR Congress, Verbania Pallanza, Lago Maggiore, 12-15 September 2007.
5. **Prischi F**, Bernini A, Venditti V, Spiga O, Tong AP, Wong WT, Niccolai N. Dimerization of α -bungarotoxin monitored by paramagnetic probes: a new approach for protein-protein interaction studies. XXXVI National NMR Congress, Vietri sul Mare (SA), 20-23 September 2006.

Training courses and Workshops

2012 Imperial College Workshop: Promoting Equality and Diversity
2011 OPPF-MPL course: High-throughput Protein Production and Crystallization.
2011 Imperial College Workshop: Assisting with Ph.D. supervision.
2011 Imperial College Workshop: Introduction to Project Management for Support Staff.
2010 Imperial College workshop: Introduction to Teaching and Learning for Postdocs.
2009 Spetses Protein Science School: the role of dynamics on the mechanisms in protein folding, enzyme mechanism, protein hormone actions and function of membrane transporters.
2009 Italian Nuclear Magnetic Resonance National School – Advanced Course.
2008 Italian Nuclear Magnetic Resonance National School – Basic Course.
2008 EMBO Practical Course: Docking Predictions of Protein-Protein Interactions.
2007 EMBO Practical Course: Exploring Modular Protein Architecture.

Referees

- Dr. Annalisa Pastore ■ MRC National Institute for Medical Research, The Ridgeway, Mill Hill ■ London (UK), NW7 1AA, UK ■ apastor@nimr.mrc.ac.uk
- Dr. Maruf Ali ■ Division of Molecular Biosciences, Imperial College London, South Kensington Campus ■ London (UK), SW7 2AZ ■ maruf.ali@imperial.ac.uk