

## PERSONAL INFORMATION

Paolo Giuseppe Cocomazzi



## WORK EXPERIENCE

September 2022 – March 2023

### Postdoctoral Researcher

IRCCS National Cancer Institute, via Venezian 1, 20133 Milan, Italy

In the lab of **Serenella Pupa**, Researcher; e-mail: [serenella.pupa@istitutotumori.mi.it](mailto:serenella.pupa@istitutotumori.mi.it)

**PROJECT:** Targeting fatty acid uptake pathway to revert resistance to anti-HER2 agents in HER2-positive breast cancer.

June 2022 – August 2022

### Postdoctoral Researcher

National Research Council, Biophysics institute, via Celoria 26, 20133 Milan, Italy

In the lab of **Mario Milani**, CNR First Researcher; e-mail: [mario.milani@unimi.it](mailto:mario.milani@unimi.it)

**PROJECT:** Engineered REcTO proteins: new tools to regulate neuroinflammation.

October 2019 – April 2022

### Postdoctoral Researcher

IRCCS Scientific Institute San Raffaele, via Olgettina 58, 20132 Milan, Italy

In the lab of **Massimo Degano**, Head of Biocrystallography Unit; e-mail: [degano.massimo@hsr.it](mailto:degano.massimo@hsr.it)

**PROJECT 1:** Structural basis of B-cell Receptor-mediated cell-autonomous signaling in chronic lymphocytic leukaemia.

**PROJECT 2:** Production and purification of G-protein coupled receptor 44 through baculoviral system.

## EDUCATION AND TRAINING

October 2016 – February 2020

### PhD in Molecular and Cellular Biology

Department of Biosciences, University of Milan, via Celoria 26, 20133 Milan, Italy

Tutored by **Alessandro Aliverti**, Associate professor of Biochemistry; e-mail: [alessandro.aliverti@unimi.it](mailto:alessandro.aliverti@unimi.it)

Co-tutored by **Eloise Mastrangelo**, CNR First Researcher; e-mail: [eloise.mastrangelo@unimi.it](mailto:eloise.mastrangelo@unimi.it)

**Principal Subject:** Structural and functional characterization of pathogenic Apoptosis Inducing Factor mutants and their interaction with CHCHD4 as a possible link to mitochondriopathies onset.

September 2014 – October 2016

### Master's degree in Molecular Biology of the Cell

Department of Biosciences, University of Milan, via Celoria 26, 20133 Milan, Italy

Tutored by **Alessandro Aliverti**, Associate professor of Biochemistry; e-mail: [alessandro.aliverti@unimi.it](mailto:alessandro.aliverti@unimi.it)

Co-tutored by **Mario Milani**, CNR First Researcher; e-mail: [mario.milani@unimi.it](mailto:mario.milani@unimi.it)

**Principal Subject:** Effect of a natural amino acidic mutation on protein-substrate interaction of the Ferredoxin-NADP<sup>+</sup> reductase of *Plasmodium Falciparum*.

**Final grade:** 110/110



September 2010 – July 2014

**Bachelor's degree in Industrial and Environmental Biotechnology**

Department of Biosciences, University of Milan, via Celoria 26, 20133 Milan, Italy

Tutored by **Alessandro Aliverti**, Associate professor of Biochemistry; e-mail: [alessandro.aliverti@unimi.it](mailto:alessandro.aliverti@unimi.it)

**TITLE of the thesis:** Creation of a molecular switch through *in vitro* non-homologous recombination.



## SKILLS ACQUIRED

Post-doc	<p>Advanced knowledge and practical skills in crystallogenesi s and structure analysis using crystallographic software (COOT, PyMol, Chimera). Advanced usage of CCP4 and Phenix suite for structure determination and refinement. Excellent skills in setting up and performing sedimentation velocity and equilibrium Analytical Ultracentrifugation (AUC) experiments. Optimal knowledge in AUC data analysis through SEDFIT and SEDPHAT software.</p> <p>Concerning baculoviral system, optimal skills in handling, maintaining and infecting insect cells (<i>Sf9</i> and <i>Hi5</i>) to produce membrane proteins as well as their purification.</p>
PhD	<p>Advanced skills in protein production using <i>E. coli</i> cells and purification through FPLC systems. Evaluation of enzymatic activity and steady-state kinetics as well as protein-protein affinity measurements through the MicroScale Thermophoresis technique. Crystallogenesi s and crystallography (COOT, PyMol, CCP4 suite). Advanced usage of both Oryx4 and Oryx8 crystallization robots (Douglas Instruments). Optimal skills in performing Small-Angle X-ray Scattering measurements comprising SEC-SAXS, batch and stopped flow-SAXS modes. Great skills in collecting SAXS data and their analysis through the ATSAS suite (PRIMUS, CHROMIXS, OLIGOMER, DAMMIN, DAMMIF, MONSA). Synchrotron experience: three weeks at the EMBL of Hamburg (Germany) as guest in the Dmitri Svergun group.</p>
Master's degree	<p>Advanced skills in protein production using <i>E. coli</i> cells and purification through FPLC systems. Evaluation of enzymatic activity and steady-state kinetics in the presence of ligands, ligand analogs and chemicals. Characterization of protein-ligand affinity through the MicroScale Thermophoresis technique and thermofluorimetry technique. Crystallogenesi s and crystallography (COOT, PyMol; CCP4 suite,). Good usage of both Oryx4 and Oryx8 crystallization robots (Douglas Instruments). Synchrotron experience: ESRF, Grenoble (France).</p>

## ADDITIONAL INFORMATION

Publications	<p>- Cocomazzi P, Sorrentino L, Cossu F, Aliverti A. Ligand Binding in Allosteric Flavoproteins: Part 1. Quantitative Analysis of the Interaction with NAD<sup>+</sup> of the Apoptosis Inducing Factor (AIF) Harboring FAD in the Reduced State. <i>Methods Mol Biol.</i> 2021; 2280:179 -187.</p> <p>- Cocomazzi P, Tarantino D, Mastrangelo E, Aliverti A. Ligand Binding in Allosteric Flavoproteins: Part 2. Quantitative Analysis of the Redox-Dependent Interaction of the Apoptosis-Inducing Factor (AIF) with Its Protein Partner. <i>Methods Mol Biol.</i> 2021; 2280:189 -198.</p>
Honors and awards	<p>- Ministerial scholarship for PhD course (2016).</p> <p>- EMBO Short-Term Fellowship n° 8159 with a project entitled "Interaction between the Apoptosis Inducing Factor (AIF) and CHCHD4: a possible connection to mitochondriopathies onset" (2019).</p>
Congresses and Seminars	<p>- Aliverti A, Sorrentino L, Cossu F, Cocomazzi P, Milani M, Mastrangelo E. Structural bases of the altered functional properties of a pathological variant of the apoptosis inducing factor (AIF), The 19<sup>th</sup> International Symposium on Flavins and Flavoproteins, Groningen (Netherlands), July 2<sup>nd</sup>-6<sup>th</sup>, 2017.</p> <p>- Cocomazzi P, Sorrentino L, Cossu F, Milani M, Mastrangelo E, Aliverti A. Involvement of Apoptosis Inducing Factor variants in neurodegenerative mitochondriopathies, <i>Proteine</i> 2018, Silos di Ponente Polo Santa Marta, Verona (Italy), May 28<sup>th</sup>-30<sup>th</sup>, 2018 (poster presentation).</p> <p>- Cocomazzi P, Sorrentino L, Cossu F, Milani M, Mastrangelo E, Aliverti A. CHCHD4: a possible link between Apoptosis Inducing Factor (AIF) and mitochondrial diseases, Joint Lab Meeting, IIT Milano (Italy), October 19<sup>th</sup>, 2017.</p>
Courses attendance	<p>- Molecular and Cellular Biology: Methods and Communication of Results (R. Visintin). January, 2017, University of Milan.</p> <p>- Host-pathogen interactions (F.Briani, A. Polissi, P. Landini). September, 2017, University of Milan.</p>