

Curriculum vitae – Elisabetta Rubini

LANGUAGES

Italian - native
English – working knowledge (FCE B2)
French – basic (DELFI A1)

SOFT SKILLS

Time management
Communication
Teamwork
Problem-solving
Adaptability
Critical and independent thinking
Decision making
Creativity

JOB-RELATED SKILLS

Technical proficiency
Precision in conducting experiments
Data recording and analysis
Dissemination of scientific results
Scientific writing
Literature review
Grant writing
Mentoring
Organization of laboratory supplies

TECHNICAL SKILLS

Laboratory methodologies: Cell culture maintenance, cell proliferation and cell death assays, clonogenicity assay, cell transfection, total protein and nuclear protein extraction from cells, FFPE tissues dewaxing and antigen retrieval, protein extraction from FFPE tissues, SDS-page, western blot, dot-blot, immunofluorescence on cells and FFPE tissues, comet assay, HPLC analysis, spectrophotometric analysis, plasmid DNA purification, RNA extraction from cells and FFPE tissues, PCR and RT-qPCR, flow cytometry analysis (cell cycle, cellROX, Annexin V, JC-1), NanoBRET.

Data analysis softwares: prism, image analysis (photoshop, ImageJ, ImageLab), Chromeleon 7, BD Accuri C6 software, CaspLab.

MS Office: word, power point, excel

Management platform: LabShake, Google Workspace

EDUCATION

Nov 2017-Dec 2020

Joint PhD in Biochemistry and Agriculture and bio-engineering

Sapienza University of Rome & ULB-Université Libre de Bruxelles (ULB)

Thesis title: *Impact of β -hexachlorocyclohexane on human cellular biochemistry and environmental remediation strategies*. Joint supervision of Prof. Fabio Altieri (Sapienza) and Prof. David Cannella (ULB). Final grade: excellent

Oct 2012-Jul 2017

MSc in Pharmaceutical Chemistry and Technology (LM-13)

Sapienza University of Rome, Rome, Italy

Experimental thesis in Biochemistry entitled: *Studies on the correlation between the protein STAT3, energy metabolism and hormone resistance in human prostate cancer*. Supervisor: prof. Margherita Eufemi. Final grade: 110/110 cum laude

RESEARCH EXPERIENCE

April 2024-Present

Post-doctoral fellowship

Institute of Molecular Biology and Pathology (IBPM) – CNR

Project title: A two-pronged approach to target the Aurora-A/N-Myc complex in MYCN-amplified neuroblastoma.

Apr 2023-March 2024

Post-doctoral fellowship

Fondazione Umberto Veronesi, Sapienza University of Rome, Italy

Project title: Targeting Aurora-A/N-Myc complex as an innovative strategy in the treatment of MYCN-driven neuroblastomas.

Jul 2022-March 2023

Post-doctoral fellowship

Dept. of Biochemical Sciences, Sapienza University of Rome, Italy

Project title: Identification of small molecules to disrupt Aurora-A/N-Myc complex in neuroblastoma.

Apr 2022-May 2022

Post-doctoral fellowship

Istituto Pasteur Italia-Fondazione Cenci Bolognetti, Sapienza University of Rome, Italy

Project title: Identification of small molecules to disrupt the Aurora-A/N-Myc complex in neuroblastoma.

Jan 2022-Mar 2022

Post-doctoral fellowship

Fondazione Enrico ed Enrica Sovenia, Sapienza University of Rome, Italy

Project title: Know your enemy: cellular study on the molecular mechanisms of the Bis(2-ethylhexyl) phthalate.

Jan 2021-Dec 2021

Post-doctoral fellowship

Fondazione Enrico ed Enrica Sovenia, Sapienza University of Rome, Italy

Project title: β -hexachlorocyclohexane and chemoresistance against kinases inhibitors in HER-2⁺ tumours.

PROFESSIONAL QUALIFICATION

Qualification to practice the profession of Pharmacist (Nov 2017).

MEMBERSHIP

SIB - Italian Society of Biochemistry and Molecular Biology

ESMO – European Society for Medical Oncology

PRACTICAL COURSES

Organoids: Intestinal & Lung.
CamBioScience practical course 11th-12th April 2019, Homerton College University of Cambridge (UK)

CRISPR Genome Editing: Design & Strategies.

CamBioScience practical course 8th-9th April 2019, Homerton College University of Cambridge (UK)

DISSEMINATION ACTIVITIES

Liceo Scientifico Plinio Seniore,
Rome (RM), Italy - 24/11/2023.

Presentation as part of the "Ricercatori in classe" initiative promoted by Fondazione Umberto Veronesi ETS. The project, aimed at high school students, is intended at raising awareness about the importance of scientific research, discussing the goals of the Foundation and popularizing my research project funded by Fondazione Veronesi.

ITIS S.Cannizzaro,
Colleferro (RM), Italy - 16/03/2019.
Information seminar on the effects of environmental pollution on human health aimed at high school student and teachers. In particular, the presentation focused on the negative effects of the organochlorine compound β -hexachlorocyclohexane, which is massively present in the territory of Valle del Sacco, including the city of Colleferro.

VOLUNTEER EXPERIENCE

Volunteer for AIRC (Fondazione AIRC per la ricerca sul cancro)

REFERENCES

Available upon request.

INTERNATIONAL EXPERIENCE

ULB – Université Libre de Bruxelles

Interfaculty School of Bioengineers

In the international stint planned within the joint Ph.D. program with the Université Libre de Bruxelles-ULB, I visited the PhotoBio Catalysis Unit where, under the supervision of Prof. David Cannella, I set up a successful strategy to detect and quantify β -hexachlorocyclohexane parental breakdown through HPLC by exploiting the copper-based Fenton-like reaction.

AWARDS AND SCHOLARSHIPS

Post-doctoral fellowship 2023 – Fondazione Umberto Veronesi ETS

Awarded project: Targeting Aurora-A/N-Myc complex as an innovative strategy in the treatment of MYCN-driven neuroblastomas.

Contributo premiale Regione Lazio – annualità 2022

2000€ funded by Regione Lazio to support researchers.

Research fellowship 2022 – Fondazione Enrico ed Enrica Savena

Awarded project: Know your enemy: cellular study on the molecular mechanisms of the Bis(2-ethylhexyl) phthalate.

Research fellowship 2021 – Fondazione Enrico ed Enrica Savena

Awarded project: β -hexachlorocyclohexane and chemoresistance against kinases inhibitors in HER-2⁺ tumours.

Premio Fondazione Federico Calabresi Onlus (Nov 2020)

Award to the Research Project: Impact of β -hexachlorocyclohexane on human cellular biochemistry and environmental remediation strategies.

Progetto avvio alla ricerca 2019 (Oct 2019)

1000€ funded by Sapienza University of Rome. Project title: STAT3 Post Translational Modifications: a red thread through the intracellular signaling network in prostate cancer progression (AR11916B7A914CDD).

YSF Grant (Jul 2018)

Selected for a travel grant awarded by FEBS to support the participation in the 18th FEBS Young Scientists' Forum and 43rd FEBS Congress (Prague).

Student-collaboration scholarship (Mar 2017-Jul 2017)

Laboratory assistant, Department of Biochemical Sciences "A.Rossi-Fanelli", Sapienza University of Rome.

Student-collaboration scholarship (Mar 2016-Dec 2016)

Chemistry tutor for Medicine and Surgery students and for Medicine and Dentistry students, Department of Biochemical Sciences "A.Rossi-Fanelli", Sapienza University of Rome.

PUBLICATIONS

1. Fiorini, S*.; Rubini, E*; Perugini, M.; Altieri, F.; Chichiarelli, S.; Meschiari, G.; Arrighetti, G.; Vijgen, J.; Natali, P.G.; Minacori, M.; *STAT3 Pathways Contribute to β -HCH Interference with Anticancer Tyrosine Kinase Inhibitors*. Int. J. Mol. Sci. 2024, 25, 6181. <https://doi.org/10.3390/ijms25116181> (**First co-author**).
2. Boi, D.*; Rubini, E*; Breccia, S.; Guarguaglini, G.; Paiardini, A. *When Just One Phosphate Is One Too Many: The Multifaceted Interplay between Myc and Kinases*. Int. J. Mol. Sci. 2023, 24, 4746. (**First co-author**).
3. Chichiarelli S, Altieri F, Paglia G, Rubini E, Minacori M, Eufemi M. *ERp57/PDIA3: new insight*. Cell Mol Biol Lett. 2022 Feb 2;27(1):12
4. Rubini E, Minacori M, Paglia G, Macone A, Chichiarelli S, Altieri F, Eufemi M. *Tomato and Olive Bioactive Compounds: A Natural Shield against the Cellular Effects Induced by β -Hexachlorocyclohexane-Activated Signaling Pathways*. Molecules. 2021 Nov 25;26(23):7135
5. Paglia, G.; Antonini, L.; Cervoni, L.; Ragno, R.; Sabatino, M.; Minacori, M.; Rubini, E.; Altieri, F. *A Comparative Analysis of Punicalagin Interaction with PDIA1 and PDIA3 by Biochemical and Computational Approaches*. Biomedicines 2021, 9, 1533.
6. Rubini E., Minacori M., Paglia G., Altieri F., Chichiarelli S., Romaniello D., Eufemi M. *β -hexachlorocyclohexane drives carcinogenesis in the human normal bronchial epithelium cell line BEAS-2B*. Int J Mol Sci. 2021 May 29;22(11):5834.
7. Rubini E, Paglia G., Cannella D., Macone A., Di Sotto A., Gulli M., Altieri F., Eufemi M. *β -hexachlorocyclohexane: A Small Molecule with a Big Impact on Human Cellular Biochemistry*. Biomedicines 2020 Nov 16;8(11);505.
8. Di Sotto, A., Di Giacomo, S., Rubini, E., Macone, A., Gulli, M., Mammola, C. L., Eufemi, M., Mancinelli, R., & Mazzanti, G. *Modulation of STAT3 Signaling, Cell Redox Defenses and Cell Cycle Checkpoints by β -Caryophyllene in Cholangiocarcinoma Cells: Possible Mechanisms Accounting for Doxorubicin Chemosensitization and Chemoprevention*. Cells 2019, 9(4), 858.
9. Marrocco, I.; Altieri, F.; Rubini, E; Paglia, G.; Chichiarelli, S.; Giamogante, F.; Macone, A.; Perugia, G.; Magliocca, F.M.; Gurtner, A.; Maras, B.; Ragno, R.; Patsilinos, A.; Manganaro, R.; Eufemi, M. *Shmt2: a Stat3 New Signaling Player in Prostate Cancer Energy Metabolism*. Cells 2019, 8, 1048.
10. Cocchiola, R.; Rubini, E.; Altieri, F.; Chichiarelli, S.; Paglia, G.; Romaniello, D.; Carissimi, S.; Giorgi, A.; Giamogante, F.; Macone, A.; Perugia, G.; Gurtner, A.; Eufemi, M. *STAT3 Post-Translational Modifications Drive Cellular Signaling Pathways in Prostate Cancer Cells*. Int. J. Mol. Sci. 2019, 20, 1815.
11. Rubini, E.; Altieri, F.; Chichiarelli, S.; Giamogante, F.; Carissimi, S.; Paglia, G.; Macone, A.; Eufemi, M. *STAT3, a Hub Protein of Cellular Signaling Pathways, Is Triggered by β -Hexachlorocyclohexane*. Int J Mol Sci. 2018 Jul 20;19(7).

CONFERENCE CONTRIBUTIONS

- *A structure-guided approach to target the Aurora-A/N-Myc complex in MYCN-amplified neuroblastoma*. Rubini E. Joint Labs Workshop (BBSRC-ILKEA/CNR/Royal Society IE) - 20-21th June 2024. **Oral presentation**
- *A structure-guided approach to target the Aurora-A/N-Myc complex in MYCN-amplified neuroblastoma*. Rubini E., Di Giulio S., Pamfil G., Boi D., Asteriti I., Veschi V., Barbagallo F., Giannini G., Guarguaglini G. and Paiardini A. Life & Death of proteins 2023, Palatino conference center, Rome (Italy), 16-17th November 2023. **Poster**
- *A structure-guided approach to target the Aurora-A/N-Myc complex in MYCN-amplified neuroblastoma*. Rubini E., Di Giulio S., Pamfil G., Boi D., Asteriti I., Veschi V., Barbagallo F., Giannini G., Guarguaglini G. and Paiardini A. Advances in Biomedical Research V, MedILS, Split (Croatia), 15-19th September 2023. **Oral presentation**
- *The protective role of tomato and olive micronutrients in the defense against Persistent Organic Pollutants-induced toxicity*. Rubini E., Minacori M., Altieri F., Paglia G., Eufemi M., Natali PG. 11th Probiotics, Prebiotics & new foods, Università Urbaniana, Rome (Italy), 12-14 September 2021. **Oral presentation**
- *Chemoprotective effect of lycopene against β -HCH-induced toxicity in human cells*. Natali PG., Eufemi M., Altieri F., Paglia G., Rubini E. Virtual Ramazzini Days, 23-25 October 2020. **Poster**
- *Organochlorine pollutants and hormone resistance in human prostate cancer*. Rubini E., Paglia G., Eufemi M., Altieri F., Gulli M., Pacelli C., Chichiarelli S. 2nd Workshop Differentiation and Neoplastic Transformation, Centro Didattico Morgagni, Florence (Italy), 17th June 2019, **Oral presentation**
- *The role of AhR signalling pathways triggered by beta-HCH in the progression of prostate cancer*. Rubini E., G. Paglia, F. Giamogante, S. Carissimi, V. Meconi, V. Pantaleone, R. Ponza, S. Chichiarelli, F. Altieri, Eufemi M. XV FISV congress, Sapienza University, Rome (Italy), 18-21 September 2018. **Poster**
- *STAT3 is a hub protein of cellular signalling pathways triggered by persistent organochlorine pollutants (POPs)*. Rubini E., Giamogante F., Carissimi S., Grieco M., Paglia G., Capauto S., Tedeschi F., Meconi V., Altieri F., Chichiarelli S., Eufemi M. 18th FEBS Young Scientists' Forum (4-7 July 2018) and 43rd FEBS Congress (7-12 July 2018), Prague, Czech Republic. **Poster**
- *Cross-talk between organochlorine pollutants and hormone-resistance in human prostate cancer*. Rubini E., Paglia G., Giamogante F., Chichiarelli S., Carissimi S., Capauto S., Tedeschi F., Meconi V., Altieri F., Eufemi M. National Ph.D. Meeting, 22-24 March 2018, Salerno (Italy). **Poster**