



Sara Mocka

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Date of birth: 04/07/1999 **Place of birth**: Catania, Italy

WORK EXPERIENCE

University of Catania

City: Catania | **Country**: Italy

[31/10/2025 – Current]

PhD in Pharmaceutical Biotechnologies

Design, synthesis, and characterization of 5-FU mutual prodrugs with antiproliferative activity.

University of Catania, Department of Drug and Health Sciences

City: Catania | **Country**: Italy

[03/2025 – 30/10/2025]

Volunteer Research Collaborator

University of Santiago de Compostela

City: Santiago de Compostela | **Country**: Spain

[01/2025 – 06/2025]

Erasmus+ Traineeship Post-graduate

I further expanded my research experience at the University of Santiago de Compostela under the supervision of Professor M.J. Matos, working on the synthesis and characterization of a series of benzothiazole derivatives and diphenyl-based derivatives. These compounds, featuring different substitution patterns, are of pharmacological interest for their potential activity against neurodegenerative diseases. For both series, I contributed to the development of new synthetic methodologies, purification of compounds by flash chromatography, subsequent characterization by $^1\text{H}/^{13}\text{C}$ NMR, MS, IR, melting point determination, and assessment of purity by HPLC. This opportunity allowed me to refine my skills in experimental design, analytical techniques, and problem-solving within an international research environment.

EDUCATION AND TRAINING

[10/2024]

Master's Degree in Pharmaceutical Chemistry and Technology

University of Catania, Department of Drug and Health Sciences

| **Final grade**: 110/110 cum laude | **Thesis**: "Design and synthesis of novel mutual prodrugs of 5-fluorouracil and heme oxygenase-1 inhibitors as innovative antitumor agents"

My thesis experience provided me with a solid theoretical foundation and practical skills in the synthesis and characterization of mutual prodrugs of 5-fluorouracil and heme oxygenase-1 inhibitors. I gained hands-on experience in chemical synthesis techniques, including air and moisture sensitive reactions. I handled purification processes using flash column chromatography, dry column vacuum chromatography, TLC, trituration, recrystallization, vacuum filtration, celite filtration and distillation. Additionally, I developed skills in the characterization of synthesized compounds through $^1\text{H}/^{13}\text{C}$ NMR, MS, IR, and melting point determination. This project also allowed me to enhance my critical analysis, literature research, time management, and teamwork abilities.

SKILLS

Experimental design e troubleshooting | Teamwork | Time management | Literature review and scientific research | Organic Synthesis | Critical Analysis and Data Interpretation

Scientific Softwares

Maestro | Schrödinger | Mestrenova, Chemdraw, Chems sketch, | Biorender | Pymol

HONOURS AND AWARDS

[26/11/2024]

Award for Best Scientific Poster Awarding institution: European Federation for Medicinal chemistry and Chemical biology (EFMC)

Poster "Development of 5-fluorouracil and heme oxygenase-1 inhibitor mutual prodrugs as an innovative anticancer strategy" awarded during the first virtual poster session of EFMC-YSN, November 2024, LinkedIn.

PRESENTATIONS AND CONFERENCES

[20/11/2025]

Poster Presentation - Second MedChemBio Poster Online

Mocka, S., Salerno, L., Pittalà V., Modica, M.N., Romeo G., Consoli, V., Sorrenti, V., Schiano, M.E., Albrizio, S., Fiorino, F., Magli, E., Intagliata, S. Design developmente and invitro evaluation of mutual prodrugs combining 5-fluorouracil and HO-1 inhibitor with antiproliferative effect. Second MedChemBio Poster Online, Nov. 2025, LinkedIn. *Poster presentation.*

[05/11/2025 – 07/11/2025]

Poster Presentation - VII QuimBioQuim

Mocka S, Mateos LA, López NB, Crucitti D, Matos MJ. Development of dual A1/A2A adenosine receptor antagonists as nondopaminergic therapeutic agents for Parkinson's disease. VII QuimBioQuim Congreso de Jóvenes Químicos y Bioquímicos Terapéuticos, Nov. 5-7, 2025, Granada, Spain. P01. *Poster presentation.*

[23/06/2025 – 25/06/2025]

Oral Slam - AMYCBIOMED 2025

Mocka S., Salerno, L.; Pittalà, V.; Modica, M.N.; Consoli, V.; Sorrenti, V.; Sodano, F.; Schiano, M.E.; Vertuccio, S.; Albrizio, S.; Liuzzo, E.; Trapani, M.; Magli, E.; Intagliata, S. Synthesis of new 5-fluorouracil and heme oxygenase 1 inhibitor mutual prodrugs with antiproliferative effects. AMYCBIOMED 2025. Jun. 23-25, 2025, Palermo, Italy. OS38. *Oral Slam.*

[11/06/2025 – 13/06/2025]

Poster Presentation - 33rd Annual GP2A Medicinal Chemistry Conference

Novás M, Pereira CN, Mateos LA, López NB, **Mocka S**, Crucitti D, González S, Viña D, Matos MJ. 3-Heteroarylcoumarins as Potential Therapeutic Agents for Neurodegenerative Diseases: Synthesis, Molecular Modeling and Biological Insights. 33rd Annual GP2A Medicinal Chemistry Conference, XIVth Paul Ehrlich MedChem Euro-PhD Network Meeting & COST Action OneHealthdrugs. Jun. 11-13, 2025, Nantes, France. P28. *Poster presentation.*

[04/03/2025]

Poster Presentation - RCS's Scientific Poster Competition

Novás M, Pereira CN, Mateos LA, López NB, **Mocka S**, Crucitti D, González S, Viña D, Matos MJ. Exploring the Potential of 3-Heteroaryl-6/7-Hydroxycoumarins against Neurodegenerative Diseases: Synthesis, Characterization, Molecular Modelling and Preliminary Biological Results. Royal Chemical Society's Scientific Poster Competition, Mar. 4, 2025, LinkedIn. *Poster presentation.*

[02/12/2024]

Poster Presentation - SCISiCa conference

Mocka, S., Salerno, L.; Pittalà, V.; Consoli, V.; Sorrenti, V.; Fiorino, F.; Magli, E.; Intagliata, S. New mutual prodrugs of 5-fluorouracil and heme oxygenase 1 inhibitor with antiproliferative effects on breast cancer cells. SCISiCa conference, Dec. 2-3, 2024, Messina, Italy. PO34. *Poster presentation.*

[26/11/2024]

Poster Presentation - First EFMC-YSN Virtual Poster Session

Mocka, S., Salerno, L.; Pittalà, V.; Consoli, V.; Sorrenti, V.; Fiorino, F.; Magli, E.; Intagliata, S. Development of 5-fluorouracil and heme oxygenase 1 inhibitor mutual prodrugs as an innovative anticancer strategy. First EFMC-YSN Virtual Poster Session, Nov. 2024, LinkedIn. *Poster presentation.*

CERTIFICATES

[05/2025]

Certificate of Language Proficiency according to the CEFR (Centro de Lenguas Modernas) – Spanish Level B2

[12/2024]

Certificate of completion: "Pharmacophore Modeling and Molecular Docking Series: From Fundamentals to Automation and Visualizations"

Acquired foundational knowledge in pharmacophore modeling, molecular docking, and their application in drug discovery. Conducted practical experiments in pharmacophore modeling and molecular docking using the Pharmit server and AutoDock Vina, including model generation and validation, as well as virtual screening of large databases. Prepared receptors and ligands and performed simulations, including automation through Python scripting. Applied redocking techniques to validate and improve docking results and generated publication-ready figures.

I consent to the processing of my personal data in accordance with applicable data protection laws. I declare that the information provided is true.

A handwritten signature in black ink, reading "Sara Mocka". The script is cursive and fluid.

Catania, 01/12/2025

Sara Mocka