I am a highly motivated researcher at IRST Meldola, with a double master's degree at UCL in London and the University of Bologna in Italy. My intense passion for pharmaceutical chemistry and bioprocess innovation with bright experiences in organic synthesis (UCL, London) and cell-culture optimization (Merck Serono, Switzerland) boosts me to become a brilliant scientist in health care and cancer therapies. In particular, I am interested in developing new formulations/delivery systems and in new cellular/pharmaceutical products.

GIADA SABATINO
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Work Experiences

Researcher at IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) "Dino Amadori".
11.04.22-Present Via P. Maroncelli 40, 47014 Meldola (FC), Italy
SC Clinical and Experimental Oncology Immunotherapy, Rare Tumours and Biological Resource Centre.

Research Laboratory in Immunotherapy. Clinical and experimental immunomonitoring platform (contact person: Bulgarelli Jenny) from November 2023 and CAR-T platform (contact person: Mazza Massimiliano)

Aim: to develop a platform encompassing the immuno-monitoring of cancer patients and translational research projects.

Main activities and responsibilities:

- Immuno-monitoring activity: cancer patients are treated with immunological therapies and drugs in clinical trials. The immunological monitoring is performed on biological samples collected at precise time points during the anti-cancer treatment. It involves synergistic technologies used for the overall assessment of circulating and tissue immunological response or resistance mechanisms. (*performed in the clinical and experimental Immuno-monitoring unit*)

- Translational research: the main goals are the innovation of existing cellular pharma-products, the development of new and effective advanced therapies (ATMPs) with the generation of novel drug combinations (*performed in the clinical and experimental Immuno-monitoring unit*)
- Primary cell culture and monoclonal antibodies/recombinant proteins production in bacteria (E.coli) and HEK293t cells (*performed in the clinical and experimental Immuno-monitoring unit*)
- Monoclonal antibodies/recombinant proteins purification by chromatography techniques (affinity, ion exchange, size exclusion) with NGC Quest machine and magnetic beads *(performed in the 'Adoptive Cell Therapy CAR T' unit)*
- Study of complex production techniques such as protein refolding in column *(performed in the 'Adoptive Cell Therapy CAR T' unit)*
- Bacterial transformations *(performed in the 'Adoptive Cell Therapy CAR T' unit)*

- Western blot and Coomassie assay for protein analysis and quantification *(performed in the 'Adoptive Cell Therapy CAR T' unit)*
- Basic biology assays

Researcher at Fachhochschule Nordwestschweiz (FHNW), School of Life Sciences.
10.2021-02.2022 (5 months) Hofackerstrasse 30, 4132 Muttenz, Switzerland.
In Molecular Nanotechnology team, Institute for Chemistry and Bioanalytics.

Investigations about the structural and activity changes of metalloenzymes undergoing chemical modification of the active site.

Main activities and responsibilities:

- Enzymes' characterization: test the activity (spectrophotometry), the concentration (BCA assay), and predict the number of processed substrates.
- Enzymes' modification: use of computer-aided tools for enzyme active site design with the synthesis and assessment of novel suicide inhibitors.
- Synthetic and analytical chemistry tutor (interpreting NMR spectra and helping with chemical synthesis protocols)

Undergraduate internship at MERCK SERONO
06.2019–12.2019 (6 months) Route de Fenil 25, 1809 Fenil-sur-Corsier, Switzerland.
In Biotechnology & Innovation Team (BTI), Upstream Department.

Improvement of a large-scale **monoclonal antibody production platform,** emphasizing mammalian cell culture media and feed optimization.

Main activities and responsibilities:

Lead master thesis project

- Assemble, program, and run experiments in high throughput Ambr 15 Cell Culture: an automated system of 24 or 48 small- to medium-scale bioreactors
- Design experiments using a fractional factorial approach in which the best conditions are selected (use of Design Expert)
- Preparation of feeds and culture media by Media Blending Design to study limiting or toxic concentrations of media components
- Daily monitoring of metabolites and viability parameters of cultured cells, conducting statistical analysis in collaboration with team experts: use of Excel graphical models and Design Expert software, to obtain conclusions and predictions
- Training on medium- and large-scale bioreactors and proteomics techniques

Acquired skills and achieved goals:

- Independent management of Ambr 15 machine, cell clone expansion protocols (from thawing to seeding in Ambr 15), and laboratory technologies, following GMP procedures

- Periodic sharing of project developments and issues with weekly team meeting presentations and final on-site talk with Master's project presentation (30 minutes) to draw conclusions and list benefits to the company.
- Winning the BPS/BTI award resulted from the collaboration between members of Upstream Cell Line Development and Biotech Process Sciences (BPS), the Biotechnology and Innovation (BTI) department, and the Downstream and BPS-Analysis teams.

Academic Studies

Master of Research in Organic Chemistry: Drug Discovery at University College London
12.2020-12.2021 One-year taught Organic Chemistry Master

Aim to synthesize a library of **antibiotics** against methicillin-resistant **Staphylococcus Aureus** (MRSA) infections.

- *Computational tools used for **molecular modeling** and **docking**:*
    - Pymol-3D viewer for target-ligand molecules visualization.
    - Databases such as Zinc, Pubmed, and chEMBL are useful for compound research.
    - PDB (Protein Data Bank) is utilized for 3D crystallographic structures of the proteins/targets.
    - DataWarrior is used for screening the different conformations generated by "smina UCL" (docking software developed in UCL).
    - Discovery Studio 2021 was employed for a 2D view of docking results.
    - "Smina UCL" is utilized for the docking drug-receptor: it creates different conformations of the tested compounds and tries to dock them with the target, finding the best results.

- *Tools used for the **synthesis** and **characterization** of the compounds:*
    - NMR (with of MNOva software)
    - IR
    - LCMS
    - Thin-layer chromatography (TLC) and Flash column chromatography (Biotage)

Combined Bachelor/Master's degree at Alma Mater Studiorum University of Bologna (Italy)
10.2014-02.2020 Five years single-cycle program
Pharmacy and **Industrial Pharmacy**: First Class degree (110 cum laude)

- *Thesis title*: Media and Feed optimization through Intensified Fed-batch
- *Thesis subject*: pharmaceutical and Toxicological Chemistry II

Foreign languages skills

Italian: proficient/mother tongue

English: C2 (Listening and Reading), C2 (Speaking and Writing).
French: C1 (Listening and Speaking), B2 (Writing and Reading).

Digital competence

- Microsoft Office pack: expert
- Python programming language: basis

Publications and certificates

Publications

- Open Source Antibiotics - Simple Diarylimidazoles are Potent Against Methicillin Resistant Staphylococcus Aureus, under revision in *ACS Infectious Diseases.*

    Dana Klug, Edwin Tse, Daniel Silva, Yafeng Cao, Susan Charman, Jyoti Chauhan, Elly Crighton, Maria Dichiara, Chris Drake, David Drewry, Flavio Emery, Lori Ferrins, Lee Graves, Emily Hopkins, Thomas Kresina, Alvaro Lorente-Macias, Ben Perry, Richard Phipps, Bruno Quiroga, Antonio Quotadamo, **Giada Sabatino***, Anthony Sama, Andreas Schaetzlein, Quillon Simpson, Jonathan Steele, Julia Shanu-Wilson, Peter Sjö, Paul Stapleton, Chris Swain, Alexandra Vaideanu, Huanxu Xie, William Zuercher, Matthew Todd.*

Certificates and participation in conferences

- *Good Clinical Practices, held on 15.06.23*
- *Attendance at "III ITALIAN SYMPOSIUM ON ADVANCED THERAPIES", 27-29 Sept. 2023*