

# Heiner Atze

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## EDUCATION

### **Postgraduate diploma – Biostatistics and Methods in Public Health**

Paris Saclay University, Paris, France

Oct 2023 — Sep 2024

Master level courses in :

- Probability and Statistics
- Clinical Research
- Quantitative Epidemiology

### **Doctor of Philosophy – Biochemistry, Microbiology**

Sorbonne University, Paris, France

Nov 2018 — Sep 2021

### **Master of Science(\*) - Medicinal Chemistry**

Friedrich-Schiller-University, Jena, Germany

Sep 2014 — Sep 2016

(\*)German Diplom, degree awarded after 5 years of study and submission of a research thesis

### **State examination - Pharmacy**

Friedrich-Schiller-University, Jena, Germany

Sep 2010 — Sep 2014

## RESEARCH EXPERIENCE

### **Doctoral Researcher – Biochemistry, Microbiology**

INSERM, Paris, France

Jun 2018 — Sep 2021

Researcher in Team 12 “Bacterial structures implicated in antibiotic resistance” at the Centre de Recherche des Cordeliers, Paris

Two main axes of research:

#### **1. Biological characterization of new generation $\beta$ -lactamase inhibitors**

in vitro and in vivo characterization of inhibitors, data analysis and interpretation, feedback into the consult-design-test-repeat cycle in collaboration with the team of organic chemists

#### **2. Fundamental research on cell wall metabolism in gram-negative bacteria**

De novo method development: isotopic labeling of cell cultures, sample preparation, analysis by mass spectrometry, custom data analysis tools and pipelines

Key achievements and skills:

- Exploration of the chemical space around the core inhibitor and identification of crucial ligand-target-interactions
- Handling and managing a large amount of results and data from biological experiments
- Development and maintenance of custom data analysis tools available at [Gitlab](#)

## Research assistant – Medicinal and Pharmaceutical Chemistry

Friedrich-Schiller-University, Jena, Germany

Nov 2014 – Apr 2015

Biological characterization of putative anti-inflammatory substances, fundamental research on signaling cascades in inflammation using biochemical methods and imaging techniques

## WORK EXPERIENCE

### PHARMACIST

#### Pharmacie Attal

Fontenay-aux-Roses, France

Oct 2021 – present

Pharmaceutical counseling of patients  
Responsible for communication with medical staff in nursing homes  
Supervision of technical staff and pharmacy students

#### Other Pharmacies

Jena, Germany

Nov 2015 – May 2018

### PRE-REGISTRATION PHARMACIST

#### F. Hoffmann-La Roche

Basel, Switzerland

May 2015 – Oct 2015

## SKILLS

### LANGUAGES

German: Native Speaker  
English: Professional proficiency  
French: Professional proficiency

### DATA ANALYSIS, PROGRAMMING AND SOFTWARE PACKAGES

#### Programming languages



routine use of pandas, numpy, matplotlib  
project dependent use of scikit-learn, bokeh

Certifications by DataCamp:

- [Data Science](#)
- [Machine learning](#)




data analysis, plotting, basic modeling

Specialization Data Analysis with R by Duke University on Coursera

- [Statement of accomplishment](#)

- Course projects (available at [portfolio page](#)):

- [Exploring the BRFSS data](#)
- [Statistical inference using GSS data](#)
- [Modeling and prediction of movie scores](#)

-  **SQLite**: basic database setup and queries, joins and grouping operations

## Projects

- : notions

## TECHNICAL LAB SKILLS

- **Cellular Biology**  
Human Cell Culture: HEK-293, primary human lymphocytes  
Bacterial Cell Culture: Escherichia coli
- **Molecular Biology**  
mRNA-Extraction, cDNA synthesis  
Polymerase chain reaction
- **Biochemistry**  
SDS-PAGE, Western Blot  
Enzyme kinetics

## PUBLICATIONS

### JOURNAL ARTICLES

- Atze, H., Liang, Y., Hugonnet, J.-E., Gutierrez, A., Rusconi, F. and Arthur, M. (2022), "Heavy isotope labeling and mass spectrometry reveal unexpected remodeling of bacterial cell wall expansion in response to drugs", *Elife*, eLife Sciences Publications Limited, Vol. 11, p. e72863.
- Bouchet, F., Atze, H., Arthur, M., Ethève-Quelquejeu, M. and Iannazzo, L. (2021), "Traceless staudinger ligation to introduce chemical diversity on  $\beta$ -lactamase inhibitors of second generation", *Organic Letters*, ACS Publications, Vol. 23 No. 20, pp. 7755–7758.
- Bouchet, F., Atze, H., Fonvielle, M., Edoo, Z., Arthur, M., Ethève-Quelquejeu, M. and Iannazzo, L. (2020), "Diazabicyclooctane functionalization for inhibition of  $\beta$ -lactamases from enterobacteria", *Journal of Medicinal Chemistry*, American Chemical Society, Vol. 63 No. 10, pp. 5257–5273.
- Garscha, U., Romp, E., Pace, S., Rossi, A., Temml, V., Schuster, D., König, S., et al. (2017), "Pharmacological profile and efficiency in vivo of diflapolin, the first dual inhibitor of 5-lipoxygenase-activating protein and soluble epoxide hydrolase", *Scientific Reports*, Nature Publishing Group UK London, Vol. 7 No. 1, p. 9398.
- Le Run, E., Atze, H., Arthur, M. and Mainardi, J.-L. (2020), "Impact of relebactam-mediated inhibition of mycobacterium abscessus BlaMab  $\beta$ -lactamase on the in vitro and intracellular efficacy of imipenem", *Journal of Antimicrobial Chemotherapy*, Oxford University Press, Vol. 75 No. 2, pp. 379–383.
- Triboulet, S., Edoo, Z., Compain, F., Ourghanlian, C., Dupuis, A., Dubée, V., Sutterlin, L., et al. (2019), "Tryptophan fluorescence quenching in  $\beta$ -lactam-

interacting proteins is modulated by the structure of intermediates and final products of the acylation reaction”, ACS Infectious Diseases, American Chemical Society, Vol. 5 No. 7, pp. 1169–1176.

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