europass

Aurelie Chazot

Nationality: French **Date of birth:** 24/10/1997 **Phone number:** (+33) 631783794

Email address: aureliechazot@hotmail.fr

Home: Catania (Italy)

WORK EXPERIENCE

University of Catania, Drug Health Department – Catania, Italy

Postdoctoral fellowship in drug delivery

[22/01/2026 – Current]

Project : Development of functionnalised nanogel carriers for the targeted delivery of antivirals

- Development of formulations to obtain nanogels able to encapsulate nucleotide analogues
- Caracterisation of the synthesized nanogels

Technical skills: Hydrogel synthesis, Organic synthesis, DLS, Zeta potential, FT-IR, Scanning electronic microscopy, analytical chemistry

Laboratoire Architecture et Fonction des Macromolecules Biologiques, Aix-Marseille Universite, CNRS – Marseille, France

Postdoctoral fellowship in chemical biology

[02/09/2024 – 30/06/2025]

Project: Deciphering of activation pathways of nucleos(t)ides with a therapeutic interest at atomic resolution

- Production of enzymes involved in nucleos(t)ide activation pathway, in recombinant bacterial system
- Measurement of the enzyme activity with nucleos(t)ide metabolites thanks to HPLC-UV methods
- Protein crystallography to understand the impact of chemical features on enzyme-metabolite interactions
- Redaction of 2 scientific publications, in preparation
- Presentation of the results in 3 national and international conferences, including one as invited speaker. 1 award as best poster

Technical skills: Protein expression and purification, Organic chemistry based on enzymatic catalysis, HPLC-UV and HPLC-MS analysis, Crystallography, Enzymology

Laboratoire et Fonction des Macromolecules Biologiques, Aix-Marseille Universite, CNRS – Marseille, France

PhD in Chemical Sciences – chemical biology

[02/11/2020 – 30/06/2024]

Thesis project: Enzymatic phosphorylation of nucleos(t)ides of therapeutic interest against coronaviruses: tools and applications

- Creation of a kinase library through the production of proteins in recombinant bacterial systems
- HPLC-UV development method to separate and analyze mix of nucleotides
- Set-up of multienzyme phosphorylation cascades for modified nucleosides, monitored by HPLC-UV
- Functional and structural characterization of enzymes involved in the metabolism of a nucleotide analogue
- Supervisions of 3 interns (master students, 4 to 6 months of internship)
- Participation to the writing of 3 scientific publications
- Presentation of the results as poster or oral communication in 9 national and international conferences. 1 award as best speaker, 1 award at best poster

Technical skills: Protein expression and purification, Biophysics (SEC-MALS, DSF), Enzymatic catalysis, HPLC-UV analysis, Crystallogenesis, Enzymology

Laboratoire Aguettant – Lyon, France

Internship in R&D department, chemistry and formulation

[10/02/2020 – 07/08/2020]

- Development of new formulations of injectable drugs for emergencies and intensive care, based on design of experiment methods
- First accelerated stability studies of the formulations as proof of concept
- Litterature study of the toxicological evaluation of particles in injectable drugs

Technical skills: Osmolality, pH, HPLC-UV assays of active ingredients and degradation products, experimental design

Laboratoire Technologie Servier – Orléans, France

Internship in R&D department, chemistry and galenic

[06/05/2019 – 06/09/2019]

- Development of an accelerated degradation protocol using 3 oxidation routes.
- Monitoring, identification and assay of active ingredients

Technical skills: HPLC-UV assays, analytical chemistry

EDUCATION AND TRAINING

PhD in Chemical Sciences

Aix-Marseille University [02/11/2020 – 30/06/2024]

City: Marseille | **Country:** France | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Biochemistry ● Chemistry | **Thesis:** Enzymatic phosphorylation of nucleos(t)ides of therapeutic interest against coronaviruses: tools and applications

Master of Science in Chemical Engineering

Polytechnic National Institute of Toulouse [01/09/2018 – 31/08/2020]

City: Toulouse | **Country:** France | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Chemistry

Bachelor in Engineering Sciences

Polytechnic National Institute of Toulouse [01/09/2017 – 31/08/2018]

City: Toulouse | **Country:** France | **Field(s) of study:** Engineering, manufacturing and construction: ● Chemical engineering and processes

Preparatory Classes in physics and chemistry

Lycée Saint-Louis [01/09/2015 – 31/08/2017]

City: Paris | **Country:** France | **Field(s) of study:** Natural sciences, mathematics and statistics: ● Chemistry ● Physics ● Mathematics

LANGUAGE SKILLS

Mother tongue(s): French

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Italian

LISTENING A2 **READING** A2 **WRITING** A2

SPOKEN PRODUCTION A2 **SPOKEN INTERACTION** A2

PUBLICATIONS

[2024]

The activation cascade of the broad-spectrum antiviral bemnifosbuvir characterized at atomic resolution

Authors: Chazot A, Zimberger C, Feracci M, Moussa A, Good S, Sommadossi J-P, Alvarez K, Ferron F and Canard B | **Journal Name**: PLOS Biology | **Volume, Issue and Pages**: Vol 22, Issue 8, e3002743

Chazot A et al (2024) The activation cascade of the broad-spectrum antiviral bemnifosbuvir characterized at atomic resolution. PLoS Biol 22(8): e3002743

[2024]

An exonuclease-resistant chain-terminating nucleotide analogue targeting the SARS-CoV-2 replicase complex

Authors: Shannon. A, Chazot. A, Feracci. M, Falcou. C, Fattorini. V, Selisko. B, Good. S, Moussa. A, Sommadossi. J-P, Ferron. F, Alvarez. K and Canard. B | **Journal Name**: Nucleic Acids Research | **Volume, Issue and Pages**: Vol 52, 1325-1340

Shannon A et al (2024) An exonuclease-resistant chain-terminating nucleotide analogue targeting the SARS-CoV-2 replicase complex. Nucleic Acids Research, 52: 1325

[2023]

AT-752 targets multiple sites and activities on the Dengue virus replication enzyme NS5

Authors: Feracci M, Eydoux C, Fattorini V, Lo Bello L, Gauffre P, Selisko B, Sutto-Ortiz P, Shannon A, Xia H, Shi P-Y, Noel M, Debart F, Vasseur J-J, Good S, Lin K, Sommadossi J-P, Chazot A, Alvarez K, Guillemot J-C, Decroly E, Ferron F and Canard B | **Journal Name**: Antiviral Research | **Volume, Issue and Pages**: Vol 212, 105574

Feracci et al (2023) AT-752 targets multiple sites and activities on the Dengue virus replication enzyme NS5. Antiviral Research, 212, 105574

Impact of remdesivir modifications on human HINT1 binding - A structural and functional study in the remdesivir activation pathway In revision

Authors: Chazot A, Zimberger C, Fotopoulos I, Canard B, Alvarez K and Ferron F | **Journal Name**: Structure

Enzymatic synthesis of ribavirin triphosphate and 1-thiotriphosphate for the characterization of their effect on SARS-CoV-2 exonuclease activity

Authors: Chazot A, Feracci M, Fattorini V, Selisko B, Shannon A, Delahaut A, Zimberger C, Ferron F, Canard B and Alvarez K | **Journal Name**: In preparation

CONFERENCES AND SEMINARS

[23/04/2025 – 25/04/2025] Lyon, France

Journées Francophones de Virologie Poster -- "Study of the impact of the 1-thiotriphosphate form of ribavirin on the activity of the SARS-CoV-2 nsp14 exonuclease: tools for an initial response"

[17/03/2025 – 21/03/2025] Las Vegas, Nevada, United-States

International Congress of Antiviral Research 2025 Oral presentation as **keynote speaker** (30min) -- "From bemnifosbuvir to its active triphosphate: in-depth look at the enzymes involved in the activation pathway"

[21/11/2024 – 22/11/2024] Marseille, France

Journées Méditerranéennes des Jeunes Chercheurs 2024 Poster -- "Phosphorylation toolbox to generate nucleosides 5'-(aS)triphosphates: Development and application to ribavirin" -- **Award of the best poster**

[18/03/2024 – 21/03/2024] Aussois, France

Rencontres de Chimie Organique Biologique 19 Oral presentation (15min) -- "Phosphorylation toolbox to generate nucleosides triphosphates: development, applications and interest"

[13/11/2023 – 17/11/2023] Marseille, France

Integrative Structural Biology Meeting Poster -- "Structural and functional basis for metabolic activation of the antiviral drug Bemnifosbuvir"

[21/08/2023 – 29/08/2023] Melbourne, Australia
Congress and General Assembly of the International Union of Crystallography Poster -- "Structural and functional basis for metabolic activation of the antiviral drug Bemnifosbuvir" -- **Award of 2 travel grants from "Association Française de Cristallographie" (500€) and "Maison de la Chimie" (1600€)**

[19/04/2023 – 19/04/2024] Institut Pasteur, Paris, France
One-day thematic meeting « New antiviral strategies: from bench to bedside » Poster -- "Biosynthesis of nucleoside triphosphate: A tool to characterize nucleoside analogues as antivirals"

[17/04/2023 – 18/04/2023] Institut Pasteur, Paris, France
Journées Francophones de Virologie Poster -- "Biosynthesis of nucleoside triphosphate: A tool to characterize nucleoside analogues as antivirals"

[13/03/2023 – 17/03/2023] Lyon, France
International Congress of Antiviral Research 2023 Oral presentation (15min) + poster -- "Five cellular enzymes in the activation pathway of Bemnifosbuvir, a drug-candidate against SARS-CoV-2 infections" -- **Award of a travel grant from the organizing committee of the conference (400€)**

[13/10/2022 – 14/10/2022] Nice, France
Journées Mediterranéennes des Jeunes Cheurcheurs 2022 Oral presentation (10min) + poster -- "Antiviral nucleoside analogues: Set up of phosphorylation tools to support compound characterization" -- **Award of the best speaker**

[20/06/2022 – 20/06/2022] Marseille, France
Scientific Day of Doctoral School Poster -- "Development of an innovative biosynthesis scheme of nucleoside triphosphates applied to nucleoside analogues as antivirals" -- **Award of the best poster**

[21/03/2022 – 24/03/2022] Aussois, France
Rencontres de Chimie Organique Biologique 18 Poster -- "Development of an innovative biosynthesis scheme of nucleoside triphosphates applied to nucleoside analogues as antivirals"