Aline Reis de Carvalho

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Professional Highlights

From human matrices, in the field of doping control, to environmental concerns, detection and quantification of microplastics, always focusing on the analytical methodology. I am currently looking for an opportunity to investigate the threats of environmental contaminants on disruptions of human metabolism.

- Experience with sample chain of custody, traceability and quality control for a laboratory of analysis
- Worked in multidisciplinary teams, helping to fill the gap between people with different backgrounds

Education

Toulouse University — Toulouse, FR
PhD Degree in Chemistry — *Oct. 2018 – 2021*

Federal University of Rio de Janeiro — Rio de Janeiro, BR
towards a Bachelor's Degree in Chemistry (40%) — *Aug. 2016 – Jul. 2018*

Federal University of Rio de Janeiro — Rio de Janeiro, BR
Msc in Pharmacology and Medicinal Chemistry — *Feb. 2013 – Mar. 2015*

Federal University of Rio de Janeiro — Rio de Janeiro, BR
Bachelor's Degree in Pharmacy — *Aug. 2008 – Apr. 2013*

Experience

PhD candidate — Oct. 2018 – Current
Toulouse University — *Toulouse, FR*

- **Thesis project:** Spatial and temporal analysis of microplastic pollution in the Garonne River and potential transfer within food chain
- **Supervision:** *Julien Cucherousset* - Évolution et Diversité Biologique (EDB) - Toulouse University
  Alexandra Ter Halle - Laboratoire des Interactions Moléculaires et Réactivité Chimique et Photochimique (IMRCP) - Toulouse University
- Assisted in the field work for sample collection of water, fish and invertebrates
- Implemented a sample extraction procedure for microplastic in environmental matrices
- Assisted in the installation of a pyrolysis-GC-MS/MS system for analysis of microplastics
- Conducted first essays for the creation of a internal polymers database for identification and quantification of plastic polymers in matrices
- Spetrometric and spectroscopic data analysis skills

Teaching Assistant — Oct. 2020 – Current
Toulouse University - School of Pharmacy — *Toulouse, FR*

- Disciplines: Data processing, internet and communication; Biophysics; Practical courses
- 30h contract

Pharmacist — Aug. 2014 – Sep. 2018
Brazilian Doping Control Laboratory (LBCD) — *Rio de Janeiro, BR*

- Analysis of urine of 10k+ athletes for doping control purposes, including Rio 2016 Olympic and Paralympic Games
- Developed qualitative and quantitative analytical methods for the detection of organic compounds in biological matrices:
- Sample treatment procedures, such as liquid-liquid and solid-phase extraction
- Samples analysis by HPLC and GC and HRMS (*Orbitrap*) and tandem MS (single and triple quadrupole)
- Developed automatic reports for large spectrometric data sets
- Worked under ISO 17025 requirements - competence of testing and calibration laboratories
- Responsible for managing more than 100 national volunteers for doping analysis at the Rio 2016 Olympic and Paralympic Games
- Assisted in the implementation of LIMS: Laboratory Information Management System

Chemistry Lecturer Aug. 2016 – Jul. 2018
Federal University of Rio de Janeiro *Rio de Janeiro, BR*

- Disciplines: General Chemistry, Physic-Chemistry, Practical courses
- 12h per week
- Class of 20 to 50 students

Responsible for Chemical Analysis Jul. 2015 – Sep. 2015
Drug Control Center - King's College London *London, UK*

- Analysis of athletes' urine for doping control purposes
- Sample treatment and sample analysis by HPLC-HRMS and GC-MS
- Data treatment and analysis

Publications

de Carvalho, A.R., Imbert, A., Parker, B., Euphrasie, A., Boulêtreau, S., Britton, R., Cucherousset, J. **Microplastic in angling baits as a cryptic source of contamination in European freshwaters.** *Under review*

de Carvalho, A.R., Garcia, F., Riem-Galliano, L., Tudesque, L., Albignac, M., Ter Halle, A., Cucherousset, J., 2021. **Urbanization and hydrological conditions drive the spatial and temporal variability of microplastic pollution in the Garonne River.** Science of the Total Environment, 2020. https://doi.org/10.1016/j.scitotenv.2020.144479

Garcia, F., de Carvalho, A.R., Riem-Galliano, L., Tudesque, L., Albignac, M., Ter Halle, A., Cucherousset, J., 2021. **Stable isotope insights into microplastic contamination within freshwater food webs.** Environmental Science & Technology. https://doi.org/10.1021/acs.est.0c06221

Yakovenko, N., Carvalho, A.R., ter Halle, A., 2020. **Emerging use thermo-analytical method coupled with mass spectrometry for the quantification of micro(nano)plastics in environmental samples.** Trends in Analytical Chemistry. 131, 115979. https://doi.org/10.1016/j.trac.2020.115979

Sardela, V.F., Sardela, P.D.O., Lisboa, R.R., Matias, B.F., Anselmo, C.S., de Carvalho, A.R., Nunes, I.K.C., Padilha, M.C., de Aquino Neto, F.R., Pereira, H.M.G., 2020. **Comprehensive Zebrafish Water Tank Experiment for Metabolic Studies of Testolactone.** Zebrafish. 17, 104–111. https://doi.org/10.1089/zeb.2019.1791

Sardela, Vinicius Figueiredo, Anselmo, C. de S., Nunes, I.K. da C., Carneiro, G.R.A., Santos, G.R.C., Carvalho, A.R., Labanca, B. de J., Silva Oliveira, D., Ribeiro, W.D., Araujo, A.L.D., Padilha, M.C., Lima, C.K.F., Sousa, V.P., Aquino Neto, F.R., Gualberto Pereira, H.M., 2018. **Zebrafish (Danio rerio) water tank model for the investigation of drug metabolism: Progress, outlook, and challenges.** Drug Test. Anal. 10, 1657–1669. https://doi.org/10.1002/dta.2523

Sardela, Vinícius F., Carvalho, A.R., da C. Nunes, I.K., 2018. **The black market for anorectic agents: A case study of amfepramone.** Toxicol. Anal. Clinique. 30, 149–153. https://doi.org/10.1016/j.toxac.2018.03.001

Nascimento-Viana, J.B., Carvalho, A.R., Nasciutti, L.E., Alcantara-Hernandez, R., Chagas-Silva, F., Souza, P.A.R, Romeiro, L.A.S., Garcia-Sainz, J.A., Noël, F., Silva, C.L.M.S., 2016. **New Multi-target Antagonists of a1A-, a1D-Adrenoceptors and 5-HT1A Receptors Reduce Human Hyperplastic Prostate Cell Growth and the Increase of Intraurethral Pressures.** J. Pharmacology and Experimental Therapeutics. 356:212–222. http://dx.doi.org/10.1124/jpet.115.227066

Co-Mentorship

Master I Student Flavien Garcia | Master Biodiversité, Ecologie et Evolution - BEE - Toulouse University | **Final project:** Microplastics ingestion by aquatic organisms in the Garonne: origins, determinants and consequences. *July 2020*

Master II Student Camille Van Craynest | Marine Sciences Master - MOBIE - Perpignan Via Domitia University | **Final project:** Study of floating microplastics in the Garonne River and its tributaries. *July 2019*

Meetings and Conferences

GDR Polymères et Océans 2021 | oral presentation | Urbanization and hydrological conditions drive the spatial and temporal variability in microplastic pollution in the Garonne. Online. *Feb 2021*

MICRO2020 | oral presentation | Environmental and ecological determinants of microplastic pollution and ingestion by freshwater organisms in the Garonne River (France). Online. *November 2020*

SETAC SciCon 2020 | poster presentation | Spatial and temporal variability in microplastic pollution in the Garonne river (France) and consumption by fish. Online. *Mai 2020. In* Society of Environmental Toxicology and Chemistry

GDR Polymères et Océans 2019 | poster presentation | Method development for the spatio-temporal analysis of microplastic pollution (25 um à 5 mm) in water and sediments of the Garonne catchment. Université Paris Est Créteil. *Juin 2019*

MSB 2018 | poster presentation | Combined extraction of adrafinil and its major metabolites in human and equine urines and detection by single injection using UHPLC/HRMS. Brazil. *January 2018. In* International Symposium on Microscale Separations and Bioanalysis

MSB 2018 | poster presentation | Zebrafish, a Tool for a Human-like Metabolism Study: the Stanozolol Case. Brazil. *January 2018. In* International Symposium on Micro-scale Separations and Bioanalysis

Open Courses

PellencST FunMooc
Chemometrics: Supervised methods *48 h – nov. 2020 – current*

PellencST FunMooc
Chemometrics: Unsupervised methods *48 h – nov. 2020 – current*

Université Paris Saclay FunMooc
Introduction à la statistique avec R - Introduction to Statistics with R *16h – Oct. 2020*

Datacamp Datacamp
Multiple and Logistic Regression in R *4h – Apr. 2020*

Languages

Portuguese (Native) | **English** (Advanced) | **French** (Advanced) | **German** (Beginner)

Computing Skills

Languages: R (tidyverse, rmarkdown, rstudio)
Softwares: Ms Office
Chemometric Tools: Data pre-processing, data treatment, statistical tests and models

Personal Skills

Communicative; Result-oriented, hands-on; Good interpersonal skills; Enthusiastic with teamwork

Personality-wise

Fan of camping, cycling and running. Scout guide for more than 10 years. Highly interested in science communication. Supportive of open data and open science.

Referees

Julien Cucherousset, PhD Directeur de Recherche, CNRS | Évolution et Diversité Biologique (EDB) laboratory | Toulouse University, France | **cucherousset@univ-tlse3.fr**

Vinicius Sardela, PhD Laboratory Operations Manager | WADA - World Anti-doping Agency | Montreal, Canada | **vinicius.sardela@wada-ama.org**

Eric Benoist, PhD Professor | Laboratoire de Synthèse et Physico-Chimie des Molécules d'Intérêt Biologique (SPCMIB) | Toulouse University, France | **benoist@chimie.ups-tlse.fr**