

# ADRIÀ MITJAVILA VENTURA

MSc | Bioinformatician at *Institut Josep Carreras*

Biotechnologist with training in Molecular Genetics and Bioinformatics. Interested in omics data analysis to study the mechanisms of gene regulation in mammals. See more about me on [my website](#).



## EXPERIENCE

11/2022  
|  
Present

### PhD student

*Institut Germans Trias i Pujol & Institut Josep Carreras*

📍 Badalona, Spain

#### Group of Regulatory Genomics (Dr. Tanya Vavouri)

Study of the role of transposable elements in the evolution of gene regulation in mammals.

08/2021  
|  
11/2022

### Bioinformatician & master's thesis student

*Institut Josep Carreras*

📍 Badalona, Spain

#### Group of Regulatory Genomics (Dr. Tanya Vavouri)

Study of Piwi-interacting RNAs (piRNAs), their biogenesis mechanisms and their conservation across species.

- Development and application of a pipeline to process small RNA-seq data, focused on the study of piRNAs.
- Development of a method for differential expression without gene length differences when using multiple species.
- Analysis and integration of small RNA-seq, RNA-seq and genomic data.
- Mentoring of bachelor's and master's thesis students.
- Master's thesis (UOC): *Analysis of the variation in piRNA expression across three Mus species*. Grade: 9.78/10 (**with honours**). Supervisor: Dr. Tanya Vavouri.

07/2019  
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07/2021

### Bioinformatician

*Istituto Europeo di Oncologia*

📍 Milan, Italy

#### Group of Epigenetic Mechanisms in Cancer (Dr. Diego Pasini)

Study of Wnt/ $\beta$ catenin signaling pathway -and others- and its effects in transcription and epigenetic modifications in the context of colorectal cancer and stem cell development.

- Analysis and integration of omics data (RNA-/ChIP-/ATAC-seq).
- Comparison of different ATAC-seq peak callers.
- Development of a pipeline to process and analyze ATAC-seq data.
- Comparison of different sequencing depths for RNA-seq and their influence in differential expression analysis.

09/2017  
|  
10/2018

### Master's thesis student & Research assistant

*Institut de Biomedicina de Sevilla*

📍 Seville, Spain

#### Group of Gene Expression (Dr. Sebastián Chávez)

Study of Xrn1 and Ccr4 roles in yeast nucleosome architecture and gene transcription.

- Analysis of MNase-seq data from Xrn1-, Ccr4-mutant and WT yeast strains.
- Perform MNase-qPCR experiments, including MNase DNA digestion, primer design, qPCRs and analysis.
- Master's thesis (US): *Influence of Xrn1 in nucleosome positioning [...] and its effects in transcription*. Grade: 9.2/10. Supervisors: Dr. Sebastián Chávez de Diego and Dr. Gabriel Gutiérrez Pozo.

07/2017  
|  
09/2017

### Internship student

*Institut d'Investigació Biomèdica de Girona*

📍 Girona, Spain

#### Unit of Diabetes, Endocrinology and Nutrition

*Extracurricular internship*. Identification of novel factors (genetic and bacterial) related to adipose tissue physiology and obesity.

- RNA extraction from mouse hepatic biopsies.
- DNA extraction from human feces to study the composition of the microbiota.

## CONTACT

🏠 Girona (Spain)

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🆔 0000-0002-0337-1929

📄 [1-page resume](#)

🏆 [Sports CV](#)

## SKILLS

### Bioinformatics:

Microarray, (small) RNA-seq, ChIP-seq, ATAC-seq, MNase-seq, ENSEMBL, UCSC Genome Browser, IGV

### Informatics:

R/Bioconductor, RMarkdown, Shiny, Bash, Snakemake, Python, Git, HPC, Conda, Docker, Singularity, Linux (Ubuntu), Mac OS, Windows, MS Office, LibreOffice

### Experimental:

(q)PCR, electrophoresis, molecular cloning, Western blot, MNase-digestion, bacterial/yeast culture

### Languages:

Catalan (Native), Spanish (Native), English (IELTS 7.5 - C1), Italian (Basic)

References available upon request.  
Build with [pagedown](#), code [here](#).  
Last updated on 2022-10-20.

09/2016  
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06/2017

## Internship & bachelor's thesis student

*Microbial. Sistemes i aplicacions analítiques, S.L.*

Girona, Spain

Microbiological and molecular analyses of food and water for pathogen detection and food forensics | Study of butyrate effects on the ileal microbiota of colectomized colorectal cancer patients.

- DNA extraction of intestinal mucosa biopsies.
- (q)PCR experiments to detect clusters and families of bacteria.
- NGS data analysis to quantify bacterial genera in intestinal biopsies.
- Bachelor's thesis (UdG): *Butyrate-induced changes in the [...] microbiota in colorectal cancer patients [...]*. Grade: 9.4/10. Supervisor: Prof. Jesús García-Gil.



## EDUCATION

2022  
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Present

### PhD in Bioinformatics

Universitat Autònoma de Barcelona (UAB)

Barcelona, Spain

- INPhINIT Incoming PhD Fellowship from LaCaixa.
- Research carried out at Regulatory Genomics group of the [Institut Josep Carreras \(IJC\)](#).

2018  
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2022

### MSc in Bioinformatics and Biostatistics

Universitat Oberta de Catalunya (UOC)

Online

- Focused on Computational Genomics.
- Master's thesis: *Analysis of the variation in piRNA expression across three close related Mus species*. Grade: 9.7/10 (with honours).
- Overall grade: 8.94/10.

2017  
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2018

### MSc in Molecular Genetics and Biotechnology

Universidad de Sevilla (US)

Seville, Spain

- Specialization in Molecular Biology Research.
- Master's thesis: *Influence of Xrn1 in nucleosome positioning across Saccharomyces cerevisiae genome and its effects in transcription*. Grade: 9.2/10
- Overall grade: 9.33/10.

2012  
|  
2017

### BSc in Biotechnology

Universitat de Girona (UdG)

Girona, Spain

- Specialization in Cellular & Molecular Biotechnology.
- Bachelor's thesis: *Butyrate-induced changes in the diversity of intestinal mucosa-associated microbiota in colorectal cancer patients submitted to a lateral ileostomy*. Grade: 9.4/10
- Overall grade: 8.12/10.



## PUBLICATIONS

- Begley *et al.* Xrn1 influence on gene transcription results from the combination of general effects on elongating RNA pol II and gene-specific chromatin configuration. *RNA Biology* 2020. doi: [10.1080/15476286.2020.1845504](https://doi.org/10.1080/15476286.2020.1845504)



## POSTERS & PRESENTATIONS

- Mitjavila & Vavouri. **Analysis of piRNA variation across three Mus species (in Catalan)**. Oral presentation at the *Jornades de Biologia de la Reproducció* from the Catalan Society of Biology (March 2022)

## DEVELOPMENT

**plotmics**: visualization of omics and sequencing data in R.

**ggmitji**: complements and customization for ggplots.

**chromHMMviewR**: visualization of ChromHMM outputs in R.

**MYomics**: shiny app to visualize omics data (*ongoing*).

More on my [GitHub profile](#).

## ORGANIZATIONS

**SCB** (2018 - Present)

**ASBTEC** (2017 - Present)

## HONORS & AWARDS

**INPhINIT Incoming PhD Fellowship** (LaCaixa, 2022-2025)

**Master's thesis, with honours** (UOC, 2022)

**SEMM PhD Fellowship** (SEMM, 2019-2021 *declined*)

**Elite athlete** (BOE, 2015-2021)

**World Rowing U23 Champion** (FISA, 2016)