

# Adrià Mitjavila Ventura

Bioinformatician

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*Biotechnologist with training in Molecular Genetics and Bioinformatics. Interested in omics data analysis to study the mechanisms of gene regulation in mammals.*

## Education

**MSc. Bioinformatics and Biostatistics**, *Universitat Oberta de Catalunya (UOC)*, Online 2018 - 2022  
**MSc. Molecular Genetics and Biotechnology**, *Universidad de Sevilla (US)*, Seville (Spain) 2017 - 2018  
**BSc. Biotechnology**, *Universitat de Girona (UdG)*, Girona (Spain) 2012 - 2017

## Employment

**Institut Josep Carreras (IJC)** **Badalona (Spain)**  
**Bioinformatician** 08/2021 - Present  
 - Study of the Piwi-interacting RNAs (piRNAs) and their variation across closely-related species.  
 - Analysis of small RNA-seq data for the study of piRNAs.  
 - Approach to reduce gene length differences for differential expression analysis with multiple species.

**Istituto Europeo di Oncologia (IEO)** **Milan (Italy)**  
**Bioinformatician** 07/2019 - 07/2021  
 - Study of different signaling pathways in the development of cancer and stem cell differentiation.  
 - Analysis and integration of RNA-seq, ChIP-seq and ATAC-seq data.  
 - Development of a pipeline to process and analyze ATAC-seq data.  
 - Comparison of different software for ATAC-seq peak calling.  
 - Comparison of sequencing depths for RNA-seq and their impact on differential expression analysis.

**Instituto de Biomedicina de Sevilla (IBiS)** **Seville (Spain)**  
**Research assistant** 07/2018 - 10/2018  
 - Study of protein Ccr4 and its influence in nucleosome positioning and transcriptional regulation in yeast.  
 - Computational analysis of MNase-seq data.

**Master's thesis student** 09/2017 - 07/2018  
 - Study of protein Xrn1 and its influence in nucleosome positioning and transcriptional regulation in yeast.  
 - Computational analysis of MNase-seq data.  
 - MNase-qPCR experiments: DNA digestion, primer design, qPCR.

**Institut d'Investigació Biomèdica de Girona** **Girona (Spain)**  
**Research internship student** 07/2017 - 09/2017  
 - Identification of new factors (genetic and bacterial) related to adipose tissue physiology and obesity.  
 - DNA and RNA extraction from animal and human biopsies/feces.

**Microbial. Sistemes i aplicacions analítiques, S.L.** **Girona (Spain)**  
**Bachelor's thesis student** 01/2017 - 06/2017  
 - Analysis of the mucosa-associated microbiota from human intestinal biopsies  
 - DNA extraction, qPCR, analysis of sequencing data.

**Internship student** 09/2016 - 06/2017  
 - Analysis of pathogens in food and water samples. Food Forensics.  
 - DNA extraction, qPCR, molecular cloning, bacterial culture.

## Publications

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### JOURNAL ARTICLES

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

### PRESENTATIONS AND POSTERS

A. Mitjavila & T. 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).

## Projects

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### ACADEMIC PROJECTS

#### Analysis of the variation in piRNA expression across three *Mus* species

- Master's thesis (UOC, 2022).
- Supervisor: Dr. Tanya Vavouri.
- Grade: 9.7/10, *with honours*.

#### Influence of Xrn1 in nucleosome positioning across *Saccharomyces cerevisiae* genome and its effects in transcription

- Master's thesis (US, 2018).
- Supervisors: Dr. Sebastián Chávez de Diego and Dr. Gabriel Gutiérrez Pozo.
- Grade: 9.2/10.

#### Butyrate-induced changes in the diversity of the intestinal mucosa-associated microbiota in colorectal cancer patients submitted to a lateral ileostomy

- Bachelor's thesis (UdG, 2017).
- Supervisor: Prof. Jesús García-Gil.
- Grade: 9.4/10.

## Skills

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### Languages

- Catalan (*native*)
- Spanish (*bilingual*)
- English (*IELTS 7.5 - C1*)
- Italian (*basic*)

### Bioinformatics

- *Omics data analysis*: Microarray, (small) RNA-seq, ChIP-seq, ATAC-seq, MNase-seq
- *Genomic Browsers*: IGV, UCSC Genome Browser
- *Other*: Analysis of sequences, ENSEMBL Compara, Biomart

### Informatics

- *Languages*: R/Bioconductor, Bash, Python (*basic*)
- *Other*: R Markdown, Snakemake, Conda, Docker, Singularity, Git, HPC, LaTeX

## Development

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### R packages

- **p10tMICS**: visualization of omics and sequencing data in R.
- **ggmitji**: cool functions to complement ggplots.
- **chromHMMviewR**: visualize outputs from **ChromHMM**.

### Others.

- **DNAme**: shinyApp with learning purposes that transforms a name to DNA/RNA sequence.
- **DNApp**: shinyApp with some DNA-related applications, including **DNAme**
- **MYomics**: shinyApp to visualize several omics data. *Ongoing*

## Organizations

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**Societat Catalana de Biologia (SCB).** 2018 - Present

**Associació de Biotecnòlegs de Catalunya (ASBTEC).** 2017 - Present

## Honours & Awards

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Master's thesis with honours (UOC, 2022)

Elite athlete (2015-2021)

World Rowing Under-23 Champion (2016)

## References

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Available upon request.