

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.
 - Mentoring of bachelor's and master's thesis students.

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-, ChIP- 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

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

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.
- Related publications: [Begley *et al.*, RNA Biology, 2020](#)

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

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

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

Societat Catalana de Biologia (SCB). 2018 - Present

Associació de Biotecnòlegs de Catalunya (ASBTEC). 2017 - Present (*Board member.* 2019 - Present)

Honours & Awards

Master's thesis with honours (UOC, 2022)

Elite athlete (2015-2021)

World Rowing Under-23 Champion (2016)

References

Available upon request.