

# Mireia Ramos-Rodríguez

POSTDOCTORAL RESEARCHER

✉ [mireia.ramos@upf.edu](mailto:mireia.ramos@upf.edu) | ☎ 0000-0001-8083-2445 | 📧 [mireia-bioinfo](#) | 📄 [mireia-bioinfo](#) | 🐦 [mireia\\_bioinfo](#)

## Education

### PhD in Biomedicine (Bioinformatics research area)

UNIVERSITAT DE BARCELONA

Barcelona, Spain

2016 - 2020

### MSc in Bioinformatics

UNIVERSIDAD DE MURCIA

Murcia, Spain

2014 - 2015

### BSc in Biomedical Sciences

UNIVERSITAT AUTÒNOMA DE BARCELONA

Barcelona, Spain

2009 - 2014

## Work Experience

### Postdoctoral Researcher

ENDOCRINE REGULATORY GENOMICS, MELIS - UPF

Barcelona, Spain

NOV 2020 - Present

- Processing and analysis of transcriptome and epigenome data, in bulk (RNA-seq, ATAC-seq, CUT&TAG, ChIP-seq) and single cell (scRNA-seq, scATAC-seq)
- Analysis and development of software for querying 3D chromatin structure (UMI-4C)
- Integration of omics data to decipher cis-regulatory networks that drive gene expression

### Predoctoral Researcher

ENDOCRINE REGULATORY GENOMICS, INSTITUT GERMANS TRIAS I PUJOL (IGTP)

Badalona, Spain

DEC 2015 - NOV 20

- Processing and analysis of ATAC-seq, RNA-seq and ChIP-seq
- Integration of gene expression information with chromatin landscape
- Software development (R packages & web applications)

### Maths4Life Fellow

BIostatistics and Bioinformatics Unit, INSTITUT DE RECERCA BIOMÈDICA DE BARCELONA (IRB)

Barcelona, Spain

JUL 2015 - AUG 2015

- Development of a Shiny App to explore the role of microRNAs in prostate cancer.

### Research Student

COMPUTATIONAL MEDICINE, UNIVERSITAT AUTÒNOMA DE BARCELONA (UAB)

Barcelona, Spain

NOV 2013 - MAY 2014

- Molecular dynamic simulations of G-protein coupled receptors (GPCRs).

## Projects as Principal Investigator

2023-2025 **Beca Impulso Talento Joven**. Fundación DiabetesCERO (Spain)

## Publications

1. Ramos-Rodríguez, M., Subirana-Granés, M., Norris, R., Sordi, V., Ruiz, Á. F., Fuentes-Páez, G., Pérez-González, B., Balaguer, C. B., Raurell-Vila, H., Chowdhury, M., Corripio, R., Partelli, S., López-Bigas, N., Pellegrini, S., Montanya, E., Nacher, M., Falconi, M., Layer, R., Rovira, M., ... Pasquali, L. (2024). Implications of noncoding regulatory functions in the development of insulinomas. *bioRxiv*. <https://doi.org/10.1101/2024.01.23.576802>
2. Fontcuberta-PiSunyer, M., García-Alamán, A., Prades, Èlia, Téllez, N., Alves-Figueiredo, H., Ramos-Rodríguez, M., Enrich, C., Fernandez-Ruiz, R., Cervantes, S., Clua, L., Ramón-Azcón, J., Broca, C., Wojtuszczyński, A., Montserrat, N., Pasquali, L., Novials, A., Servitja, J.-M., Vidal, J., Gomis, R., & Gasa, R. (2023). Direct reprogramming of human fibroblasts into insulin-producing cells using transcription factors. *Communications Biology*, 6(1). <https://doi.org/10.1038/s42003-023-04627-2>
3. Arroyo, N., Villamayor, L., Díaz, I., Carmona, R., Ramos-Rodríguez, M., Muñoz-Chápuli, R., Pasquali, L., Toscano, M. G., Martín, F., Cano, D. A., & Rojas, A. (2021). GATA4 induces liver fibrosis regression by deactivating hepatic stellate cells. *JCI Insight*, 6(23). <https://doi.org/10.1172/jci.insight.150059>
4. Ramos-Rodríguez, M., Subirana-Granés, M., & Pasquali, L. (2021). UMI4Cats: An R package to analyze chromatin contact profiles obtained by UMI-4C. *Bioinformatics*. <https://doi.org/10.1093/bioinformatics/btab392>

5. Ramos-Rodríguez, M., Pérez-González, B., & Pasquali, L. (2021). The  $\beta$ -Cell Genomic Landscape in T1D: Implications for Disease Pathogenesis. *Current Diabetes Reports*, 21(1), 1. <https://doi.org/10.1007/s11892-020-01370-4>
6. Colli, M. L., Ramos-Rodríguez, Mireia, Nakayasu, E. S., Alvelos, M. I., Lopes, M., Hill, J. L. E., Turatsinze, J.-V., Brachè, A. C. de, Russell, M. A., Raurell-Vila, H., Castela, A., Juan-Mateu, J., Webb-Robertson, B.-J. M., Krogvold, L., Dahl-Jorgensen, K., Marselli, L., Marchetti, P., Richardson, S. J., Morgan, N. G., ... Eizirik, D. L. (2020). An integrated multi-omics approach identifies the landscape of interferon- $\gamma$ -mediated responses of human pancreatic beta cells. *Nature Communications* 2020 11:1, 11(1), 1–17. <https://doi.org/10.1038/s41467-020-16327-0>
7. Ramos-Rodríguez, Mireia, Raurell-Vila, H., Colli, M. L., Alvelos, M. I., Subirana-Granés, M., Juan-Mateu, J., Norris, R., Turatsinze, J.-V., Nakayasu, E. S., Webb-Robertson, B.-J. M., Inshaw, J. R. J., Marchetti, P., Piemonti, L., Esteller, M., Todd, J. A., Metz, T. O., Eizirik, D. L., & Pasquali, L. (2019). The impact of proinflammatory cytokines on the  $\beta$ -cell regulatory landscape provides insights into the genetics of type 1 diabetes. *Nature Genetics*, 51(11), 1588–1595. <https://doi.org/10.1038/s41588-019-0524-6>
8. Miguel-Escalada, I., Bonàs-Guarch, S., Cebola, I., Ponsa-Cobas, J., Mendieta-Esteban, J., Atla, G., Javierre, B. M., Rolando, D. M. Y., Farabella, I., Morgan, C. C., García-Hurtado, J., Beucher, A., Morán, I., Pasquali, L., Ramos-Rodríguez, Mireia, Appel, E. V. R., Linneberg, A., Gjesing, A. P., Witte, D. R., ... Ferrer, J. (2019). Human pancreatic islet three-dimensional chromatin architecture provides insights into the genetics of type 2 diabetes. *Nature Genetics*, 51(7), 1137–1148. <https://doi.org/10.1038/s41588-019-0457-0>
9. Kameswaran, V., Golson, M. L., Ramos-Rodríguez, Mireia, Ou, K., Wang, Y. J., Zhang, J., Pasquali, L., & Kaestner, K. H. (2018). The Dysregulation of the DLK1 - MEG3 Locus in Islets From Patients With Type 2 Diabetes Is Mimicked by Targeted Epimutation of Its Promoter With TALE-DNMT Constructs. *Diabetes*, 67(9), 1807–1815. <https://doi.org/10.2337/db17-0682>
10. Raurell-Vila, H., Ramos-Rodríguez, Mireia, & Pasquali, L. (2018). Assay for Transposase Accessible Chromatin (ATAC-Seq) to Chart the Open Chromatin Landscape of Human Pancreatic Islets. In T. Vavouri & M. A. Peinado (Eds.), *Methods in molecular biology* (CpG Island, pp. 197–208). Human Press. [https://doi.org/10.1007/978-1-4939-7768-0\\_11](https://doi.org/10.1007/978-1-4939-7768-0_11)
11. Mularoni, L., Ramos-Rodríguez, Mireia, & Pasquali, L. (2017). The Pancreatic Islet Regulome Browser. *Frontiers in Genetics*, 8(FEB), 13. <https://doi.org/10.3389/fgene.2017.00013>

## Software & Applications

- 2022 **UMI4Cats**. R package for processing, analysis and visualization of UMI-4C chromatin contact data.  
[Bioconductor](#)
- 2017 **The Islet Regulome Browser**. Visualization tool that provides access to interactive exploration of pancreatic islet genomic data. [isletregulome.org](http://isletregulome.org)

## Fellowships & Awards

OCT 2022	Premi Extraordinari de Doctorat de la Facultat de Biologia de la Universitat de Barcelona	UB
OCT 2020	Premi al Millor Article de Recerca en Ciències de la Salut elaborat per un Investigador Predoctoral	ICS
AUG 2018	Excellent poster presentation (Spetses Summer School on Chromatin and Metabolism)	ChroMe
MAR 2017	PhD Fellowship – Ayudas para la contratación de personal investigador novel (FI)	AGAUR
JUL 2015	Maths4Life Fellowship	IRB

## Teaching Experience

<b>Basic Genetics</b>	Barcelona, Spain
UNIVERSITAT POMPEU FABRA (UPF)	APR 2021 - Present
• 2nd year of Human Biology and Medicine degrees.	
<b>Fundamentals of Computational Biology</b>	Barcelona, Spain
UNIVERSITAT POMPEU FABRA (UPF)	SEPT 2021 - DEC 2022
• 1st year of Human Biology degree.	
<b>Graphic Wizardry with Inkscape</b>	Barcelona, Spain
CAN RUTI PhD COMMITTEE WORKSHOP	30th JAN 2020
• Materials: <a href="#">Google Drive</a>	
<b>Improve your plots with ggplot2</b>	Barcelona, Spain
R-LADIES BARCELONA WORKSHOP	15th OCT 2019
• Materials: <a href="#">mireia-bioinfo/workshop_ggplot2</a>	

## Analyzing ChIP-seq data

BIOINFORMATICS WORKSHOP: INTRODUCTION TO NGS DATA ANALYSIS (EPICHEMBIO)

- Materials:  [mireia-bioinfo/workshop\\_bioinfo\\_ChIPseq](https://github.com/mireia-bioinfo/workshop_bioinfo_ChIPseq)

*Badalona, Spain*

*13th - 15th MAR 2019*

## Plots with ggplot2 are better plots!

R-LADIES BARCELONA WORKSHOP

- Materials:  [mireia-bioinfo/2017-09-27\\_rladiesBCN-meetup-ggplot2](https://github.com/mireia-bioinfo/2017-09-27_rladiesBCN-meetup-ggplot2)

*Barcelona, Spain*

*27th SEP 2017*

# Extracurricular Activities

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## R-Ladies Barcelona

ORGANIZER

*Barcelona Spain*

*2017 - 2023*

## Can Ruti PhD Committee

MEMBER/PRESIDENT

*Badalona, Spain*

*2018 - 2020*