

# ALEJO EZEQUIEL RODRIGUEZ-FRATICELLI, PhD

Group Leader at Quantitative Stem Cell Dynamics Lab, IRB Barcelona

Lineage tracing

Clonal analysis

Hematopoietic stem cells

*in vivo* CRISPR

Single-cell sequencing

## CONTACT

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## EDUCATION & EMPLOYMENT

05/2021-	Group Leader	Laboratory of Quantitative Stem Cell Dynamics	IRB Barcelona, Barcelona, Spain
01/2020-04/2021	Instructor (non-tenure faculty)	Single cell methods for lineage tracing in native and premalignant hematopoiesis	Harvard Medical School (Boston Children's Hospital)
01/2015-12/2019	Postdoctoral research fellow	Lineage fate of stem cells <i>in vivo</i> (supervisor: Dr. Fernando D. Camargo)	Boston Children's Hospital/Harvard University
01/2009-12/2014	PhD	Mechanisms of epithelial morphogenesis (supervisor: Dr. Fernando Martin-Belmonte)	Center for Molecular Biology "Severo Ochoa", Madrid, Spain

## OTHER EXPERIENCE

2019-present	International Society for Stem Cell Research	Member
2018-present	American Society of Hematology	Member
2017-present	International Society of Experimental Hematology	Member (New Investigator Committee)

## HONORS AND AWARDS

2019	K99/R00 Transition to Independence Award	National Institutes of Health (NIH) – National Heart Lung and Blood Institute (NHLBI)
2019	New Investigator Award (Postdoctoral)	International Society of Experimental Hematology (ISEH)
2018	Career Development Program Special Award	Leukemia and Lymphoma Society (LLS)
2018	ASH Scholar Award in Basic Research	American Society of Hematology (ASH)
2017	New Investigator Award (Postdoctoral)	International Society of Experimental Hematology (ISEH)
2015	Life Sciences Research Foundation "Merck Fellowship"	Life Sciences Research Foundation (LSRF)
2015	EMBO Long term fellowship (non-stipendiary)	EMBO
2014	Annual Best Thesis Award	Autonomous University of Madrid
2009	JAE-CSIC PhD Fellowship	CSIC
2008	"La Caixa" Master in Science Scholarship	"La Caixa" Foundation
2008	Valedictorian Award	Autonomous University of Madrid

## GRANTS AND PROJECTS (ACTIVE)

- ERC Starting Grant** (IRB Barcelona, Barcelona, Spain)  
*MemOriStem*  
Amount: 1,500,000 EUR – Period: 7/2022-6/2027
- CRIS Cancer Excellence** (IRB Barcelona, Barcelona, Spain)  
*Systems Analysis of Therapy Resistance in Acute Myeloid Leukemia*  
Amount: 1,250,000 EUR -- Period: 9/2021-8/2026
- "La Caixa" Foundation Junior Leader Incoming** (IRB Barcelona, Barcelona, Spain)  
*Clonal Analysis of Trained Immunity and Stem Cell Memory*  
Amount: 305,100 EUR -- Period: 05/2021-04/2024
- "Ramon y Cajal" Fellowship** (IRB Barcelona, Barcelona, Spain)

Preawarded - Amount: 219,250 EUR – Period: 01/2022-12/2026

**5. Spanish Research Agency I+D Grant** (IRB Barcelona, Barcelona, Spain)

Preawarded - Amount: 240,000 EUR – Period: 09/2021-09/2024

**TOP 5 PUBLICATIONS**

1. **Rodriguez-Fraticelli AE**, Weinreb CS, Wang SW, Migueles RP, Jankovic M, Usart M, Klein AM, Lowell S, Camargo FD. Single cell lineage tracing unveils a role for Tcf15 in haematopoiesis. *Nature*. 2020. Jul;583(7817):585-589. doi: 10.1038/s41586-020-2503-6. Epub 2020 Jul 15.  
**Impact factor: 49.962**
2. Weinreb CS\*, **Rodriguez-Fraticelli AE\***, Camargo FD, Klein AM. Lineage tracing on transcriptional landscapes links state to fate during differentiation. *Science*. 2020 Feb 14;367(6479), eaaw3381. doi.org/10.1126/science.aaw3381.  
\* **equal contribution**  
**Impact factor: 41.845**
3. **Rodriguez-Fraticelli AE**, Samuel G. Wolock, Caleb S. Weinreb, Maja Jankovic, Jianlong Sun, Allon M. Klein, Fernando D. Camargo. Clonal analysis of lineage fate in unperturbed hematopoiesis. *Nature*. 2018 Jan 11;553(7687):212-216. doi: 10.1038/nature25168. PMID:29323290.  
**Impact factor: 49.962**
4. Bowling S\*, Sritharan D\*, Osorio FG, Nguyen M, Cheung P, **Rodriguez-Fraticelli AE**, Patel S, Fujiwara Y, Li BE, Orkin SH, Hormoz S, Camargo FD. An engineered CRISPR/Cas9 mouse line for simultaneous readout of lineage histories and gene expression profiles in single cells. *Cell*. 2020 (accepted March 5th). No doi available yet. \*equal contribution.  
**Impact factor: 41.582**
5. **Rodriguez-Fraticelli AE**, Bagwell J, Bosch-Forteza M, Boncompain G, García-Leon MJ, Reglero-Real N, Andrés G, Millán J, Toribio ML, Perez F, Bagnat M, Martín-Belmonte F. Developmental regulation of apical endocytosis controls epithelial patterning in vertebrate tubular organs. *Nat Cell Biol*. 2015 Mar;17(3):241-50. doi: 10.1038/ncb3106. PMID:25706235.  
**Impact factor: 20.042**

**OTHER PUBLICATIONS**

6. Sommerkamp P, Romero-Mulero MC, Narr A, Ladel L, Hustin LSP, Schönberger K, Renders S, Altamura S, Zeisberger P, Jäcklein K, Klimmeck D, **Rodriguez-Fraticelli AE**, Camargo F, Perié L, Trumpp A, Cabezas-Wallscheid N. Mouse multipotent progenitor 5 cells are located at the interphase between hematopoietic stem and progenitor cells. *Blood*. 2021 Mar 22
7. Hachimi M, Grabowski C, Campanario S, Herranz G, Baonza G, Serrador JM, Gomez-Lopez S, Barea MD, Bosch-Forteza M, Gilmour D, Bagnat M, **Rodriguez-Fraticelli AE\***, Martín-Belmonte F\*. Smoothelin-like 2 Inhibits Coronin-1B to Stabilize the Apical Actin Cortex during Epithelial Morphogenesis. *Curr Biol*. 2021 Feb 22. \***co-corresponding authors**
8. **Rodriguez-Fraticelli AE**, Camargo F. Systems analysis of hematopoiesis using single-cell lineage tracing. *Curr Opin Hematol*. 2021 Jan;28(1):18-27.
9. Carrelha J, Lin DS, **Rodriguez-Fraticelli AE**, Luis TC, Wilkinson AC, Cabezas-Wallscheid N, Tremblay CS, Haas S. Single-cell lineage tracing approaches in hematology research: technical considerations. *Exp Hematol*. 2020 Sep;89:26-36.
10. Hurley K, Ding J, Villacorta-Martin C, Herriges MJ, Jacob A, Vedaie M, Alysandratos KD, Sun Y, Lin C, Werder RB, Wilson AA, Mithal A, Mostoslavsky G, Caballero N, Guttentag SH, Ahangari F, Kaminski N, **Rodriguez-Fraticelli AE**, Camargo F, Bar-Joseph Z, and Kotton DN. Single-cell time-series mapping of cell fate trajectories reveals an expanded developmental potential for human PSC-derived distal lung progenitors. *Cell Stem Cell*. 2020 Jan 20.
11. **Rodriguez-Fraticelli AE**, Auzan M, Alonso MA, Bornens M, Martín-Belmonte F. Cell confinement controls centrosome positioning and lumen initiation during epithelial morphogenesis. *J Cell Biol*. 2012 Sep 17;198(6):1011-23.
12. Gálvez-Santisteban M\*, **Rodriguez-Fraticelli AE\***, Bryant DM, Vergarajauregui S, et al. Synaptotagmin-like proteins control the formation of a single apical membrane domain in epithelial cells. *Nat Cell Biol*. 2012 Aug;14(8):838-49. \* **equal contribution**
13. Bryant DM, Datta A\*, **Rodriguez-Fraticelli AE\***, Peränen J, Martín-Belmonte F, Mostov KE. A molecular network for de novo generation of the apical surface and lumen. *Nat Cell Biol*. 2010 Nov;12(11):1035-45. \* **equal contribution**
14. **Rodriguez-Fraticelli AE**, Vergarajauregui S, Eastburn DJ, Datta A, Alonso MA, Mostov K, Martín-Belmonte F. The Cdc42 GEF Intersectin 2 controls mitotic spindle orientation to form the lumen during epithelial morphogenesis. *J Cell Biol*. 2010 May 17;189(4):725-38.

**h-index (Scopus): 15**

**Publications (since 2008): 28**

**Citations (Scopus): 1508**

**Citations in last 5 years (Scopus): 860**

**Full list of publications (including reviews):** <https://scholar.google.com/citations?user=J8k5cVQAAAAJ&hl=en&oi=sra>

**REVIEWING AND EDITORIAL ACTIVITIES**

Reviewer for Nature Medicine, Nature Cell Biology, Nature Communications, Nature Protocols, Stem Cells, Atherosclerosis Thrombosis and Vascular Biology.