André F. Rendeiro

Computational biologist

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Current position

2022/06 - **Principal Investigator**, *CeMM Research Center for Molecular Medicine of the Austrian Academy of Sciences*, Austria.

Past positions and Education

2020/03 - 2022/04 **Postdoctoral Associate in Computational Biomedicine**, *Institute of Computational Biomedicine, Englander Institute for Precision Medicine, Weill Cornell Medicine*, USA.
Supervisor: Olivier Elemento

2014/09 - 2020/01 **PhD**, *Medical University of Vienna*, Austria.
Supervisor: Christoph Bock, CeMM Research Centre for Molecular Medicine

2012/09 - 2014/06 **'Mestrado' (MSc) in Molecular and Cell Biology**, *University of Aveiro*, Portugal.

2008/09 - 2012/07 **'Licenciatura' (BSc) in Biology**, *University of Aveiro*, Portugal.

Key publications

Kim *et al.*, **Unsupervised discovery of tissue architecture in multiplexed imaging**. Nature Methods (2022). doi:10.1038/s41592-022-01657-2

Rendeiro*, Ravichandran* *et al.*, **The spatial landscape of lung pathology during COVID-19 progression**. Nature (2021). doi:10.1038/s41586-021-03475-6

Datlinger*, Rendeiro*, *et al.* **Ultra-high throughput single-cell RNA sequencing by combinatorial fluidic indexing**. Nature Methods (2021). doi:10.1038/s41592-021-01153-z

Rendeiro*, Krausgruber* *et al.*, **Chromatin mapping and single-cell immune profiling define the temporal dynamics of ibrutinib drug response in CLL**. Nature Communications (2020). doi:10.1038/s41467-019-14081-6

Datlinger, Rendeiro*, Schmidl* *et al.*, **Pooled CRISPR screening with single-cell transcriptome readout**. Nature Methods (2017). doi:10.1038/nmeth.4177

Rendeiro*, Schmidl*, Strefford* *et al.*, **Chromatin accessibility maps of chronic lymphocytic leukaemia identify subtype-specific epigenome signatures and transcription regulatory networks**. Nature Communications (2016). doi:10.1038/ncomms11938

* *equal first-author contributions*; $^{\Omega}$ *joint corresponding authors*

Scholarships/Grants

2020/10 - 2022/04 **Molecular and Translational Oncology Research**, *Training Grant*, T32CA203702.
National Cancer Institute, USA

2013/08 - 2014/06 **Erasmus studies mobility program scholarship**.
European Commission

2011/09 - 2012/06 **Erasmus intership mobility program scholarship**.
European Commission

2009/10 - 2010/06 **"Integration into Research" Grant**.
Science and Technology Foundation, Portugal

All publications

* *equal first-author contributions* $^{\Omega}$ *joint corresponding authors*

Preprints (does not include preprints later published in peer-reviewed journals)

4. André F. Rendeiro*, Hiranmayi Ravichandran*, Junbum Kim, Alain C. Borczuk, Olivier Elemento, Robert E. Schwartz. **Persistent alveolar type 2 dysfunction and lung structural derangement in post-acute COVID-19**. MedRxiv (2022). doi:$_{doi1}$
3. Samir Rustam, Yang Hu, Seyed Babak Mahjour, André F. Rendeiro, Hiranmayi Ravichandran, Scott H. Randell, Bradley Richmond, Vasiliy Polosukhin, Jonathan A. Kropski, Timothy S. Blackwell, Frank d'Ovidio, Fernando J. Martinez, Olivier Elemento, Renat Shaykhiev. **A Unique Cellular Organization of Human Distal Airways and Its Disarray in Chronic Obstructive Pulmonary Disease**. BioRxiv (2022). doi:10.1101/2022.03.16.484543
2. Kentaro Ohara, André F. Rendeiro, Bhavneet Bhinder, Kenneth Wha Eng, Hiranmayi Ravichandran, David Pisapia, Aram Vosoughi, Evan Fernandez, Kyrillus Shohdy, Jyothi Manohar, Shaham Beg, David Wilkes, Brian Robinson, Francesca Khani, Rohan Bareja, Scott Tagawa, Andrea Sboner, Olivier Elemento, Bishoy Morris Faltas, Juan Miguel Mosquera. **The evolution of genomic, transcriptomic, and single-cell protein markers of metastatic upper tract urothelial carcinoma**. BioRxiv (2021). doi:10.1101/2021.11.16.468622
1. André F. Rendeiro, Pavla Navratilova, Eric Thompson. **Chromatin preparation for ChIP-seq in Oikopleura dioica**. Figshare (2014). doi:10.6084/m9.figshare.884562

Peer reviewed publications

32. Junbum Kim, Samir Rustam, Juan Miguel Mosquera, Scott H. Randell, Renat Shaykhiev, André F. Rendeiro$^{\Omega}$, Olivier Elemento$^{\Omega}$. **Unsupervised discovery of tissue architecture in multiplexed imaging**. Nature Methods (2022). doi:10.1038/s41592-022-01657-2
31. Paôline Laurent*, Chao Yang*, André F. Rendeiro*, Benjamin E. Nilsson-payant, Lucia Carrau, Vasuretha Chandaryaron Bram, Benjamin R. Tenoever, Olivier Elemento, Lionel B. Ivashkiv, Robert E. Schwartz, Franck J. Barrat. **Sensing of SARS-CoV-2 by pDCs and their subsequent production of IFN-I contribute to macrophage-induced cytokine storm during COVID-19**. Science Immunology (2022). doi:10.1126/sciimmunol.add4906
30. Lissenya B Argueta, Lauretta A Lacko, Yaron Bram, Takuya Tada, Lucia Carrau, André F. Rendeiro, Tuo Zhang, Skyler Uhl, Brienne C Lubor, Vasuretha Chandar, Cristianel Gil, Wei Zhang, Brittany J Dodson, Jeroen Bastiaans, Malavika Prabhu, Sean Houghton, David Redmond, Christine M Salvatore, Yawei J Yang, Olivier Elemento, Rebecca N Baergen, Benjamin R tenOever, Nathaniel R Landau, Shuibing Chen, Robert E Schwartz, Heidi Stuhlmann. **Inflammatory responses in the placenta upon SARS-CoV-2 infection late in pregnancy**. iScience (2022). doi:10.1016/j.isci.2022.104223
29. Jiwoon Park, Jonathan Foox, Tyler Hether, David C. Danko, Sarah Warren, Youngmi Kim, Jason Reeves, Daniel J. Butler, Christopher Mozsary, Joel Rosiene, Alon Shaiber, Evan E. Afshin, Matthew MacKay, André F. Rendeiro, Yaron Bram, Vasuretha Chandar, Heather Geiger, Arryn Craney, Priya Velu, Ari M. Melnick, Iman Hajirasouliha, Afshin Beheshti, Deanne Taylor, Amanda Saravia-Butler, Urminder Singh, Eve Syrkin Wurtele, Jonathan Schisler, Samantha Fennessey, André Corvelo, Michael C. Zody, Soren Germer, Steven Salvatore, Shawn Levy, Shixiu Wu, Nicholas P. Tatonetti, Sagi Shapira, Mirella Salvatore, Lars F. Westblade, Melissa Cushing, Hanna Rennert, Alison J. Kriegel, Olivier Elemento, Marcin Imielinski, Charles M. Rice, Alain C. Borczuk, Cem Meydan, Robert E. Schwartz, Christopher E. Mason. **System-wide transcriptome damage and tissue identity loss in COVID-19 patients**. Cell Reports Medicine (2022). doi:10.1016/j.xcrm.2022.100522
28. Hussein Alnajar*, Hiranmayi Ravichandran*, André F. Rendeiro, Kentaro Ohara, Wael Al Zoughbi, Jyothi Manohar, Noah Greco, Michael Sigouros, Jesse Fox, Emily Muth, Samuel Angiuoli, Bishoy Faltas, Michael Shusterman, Cora N. Sternberg, Olivier Elemento, Juan Miguel Mosquera. **Tumor-Immune Microenvironment Revealed by Imaging Mass Cytometry in a Metastatic Sarcomatoid Urothelial Carcinoma with a Prolonged Response to Pembrolizumab**. Cold Spring Harbor Molecular Case Studies (2022). doi:10.1101/mcs.a006151
27. André F. Rendeiro, Charles Kyriakos Vorkas, Jan Krumsiek, Harjot Singh, Shashi N Kapadia, Luca Vincenzo Cappelli, Maria Teresa Cacciapuoti, Giorgio Inghirami, Olivier Elemento, Mirella Salvatore. **Metabolic**

and immune markers for precise monitoring of COVID-19 severity and treatment. Frontiers in Immunology (2021). doi:10.3389/fimmu.2021.809937

26. Nathan C. Sheffield, Michał Stolarczyk, Vincent P. Reuter, André F. Rendeiro. **Linking big biomedical datasets to modular analysis with Portable Encapsulated Projects**. GigaScience (2021). doi:10.1093/gigascience/giab077
25. Laurienne Edgar, Naveed Akbar, Adam T Braithwaite, Thomas Krausgruber, Héctor Gallart-Ayala, Jade Bailey, Alastair L Corbin, Tariq E Khoyratty, Joshua T Chai, Mohammad Alkhalil, André F. Rendeiro, Klemen Ziberna, Ritu Arya, Thomas J Cahill, Christoph Bock, Jurga Laurencikiene, Mark J Crabtree, Madeleine E Lemieux, Niels P Riksen, Mihai G Netea, Craig E Wheelock, Keith M Channon, Mikael Rydén, Irina A Udalova, Ricardo Carnicer, Robin P Choudhury. **Hyperglycaemia Induces Trained Immunity in Macrophages and Their Precursors and Promotes Atherosclerosis**. Circulation (2021). doi:10.1161/CIRCULATIONAHA.120.046464
24. Paul Datlinger*, André F. Rendeiro*, Thorina Boenke, Thomas Krausgruber, Daniele Barreca, Christoph Bock. **Ultra-high throughput single-cell RNA sequencing by combinatorial fluidic indexing**. Nature Methods (2021). doi:10.1038/s41592-021-01153-z
23. Peter Peneder, Adrian Stütz, Didier Surdez, Manuela Krumbholz, Sabine Semper, Mathieu Chicard, Nathan Sheffield, Gaelle Pierron, Eve Lapouble, Marcus Tötzl, Bekir Ergüner, Daniele Barreca, André F. Rendeiro, Abbas Agaimy, Heidrun Boztug, Gernot Engstler, Michael Dworzak, Marie Bernkopf, Sabine Taschner-Mandl, Inge Ambros, Ola Myklebost, Perrine Marec-Berard, Susan Burchill, Bernadette Brennan, Sandra Strauss, Jeremy Whelan, Gudrun Schleiermacher, Christiane Schaefer, Uta Dirksen, Caroline Hutter, Kjetil Boye, Peter Ambros, Olivier Delattre, Markus Metzler, Christoph Bock, Eleni Tomazou. **Multimodal analysis of cell-free DNA whole genome sequencing for pediatric cancers with low mutational burden**. Nature Communications (2021). doi:10.1038/s41467-021-23445-w
22. Johannes C. Melms*, Jana Biermann*, Huachao Huang*, Yiping Wang*, Ajay Nair*, Somnath Tagore*, Igor Katsyv*, André F. Rendeiro*, Amit Dipak Amin*, Denis Schapiro, Chris J. Frangieh, Adrienne M. Luoma, Aveline Filliol, Yinshan Fang, Hiranmayi Ravichandran, Mariano G. Clausi, George A. Alba, Meri Rogava, Sean W. Chen, Patricia Ho, Daniel T. Montoro, Adam E. Kornberg, Arnold S. Han, Mathieu F. Bakhoum, Niroshana Anandasabapathy, Mayte Suárez-Fariñas, Samuel F. Bakhoum, Yaron Bram, Alain Borczuk, Xinzheng V.Guo, Jay H. Lefkowitch, Charles Marboe, Stephen. M. Lagana, Armando Del Portillo, Emmanuel Zorn, Glen S. Markowitz, Robert F. Schwabe, Robert E. Schwartz, Olivier Elemento, Anjali Saqi, Hanina Hibshoosh, Jianwen Que, Benjamin Izar. **A molecular single-cell lung atlas of lethal COVID-19**. Nature (2021). doi:10.1038/s41586-021-03569-1
21. André F. Rendeiro*, Hiranmayi Ravichandran*, Yaron Bram, Vasuretha Chandar, Junbum Kim, Cem Meydan, Jiwoon Park, Jonathan Foox, Tyler Hether, Sarah Warren, Youngmi Kim, Jason Reeves, Steven Salvatore, Christopher E. Mason, Eric C. Swanson, Alain C. Borczuk, Olivier Elemento, Robert E. Schwartz. **The spatial landscape of lung pathology during COVID-19 progression**. Nature (2021). doi:10.1038/s41586-021-03475-6
20. Sandra Schick, Sarah Grosche, Katharina Eva Kohl, Danica Drpic, Martin G. Jaeger, Nara C. Marella, Hana Imrichova, Jung-Ming G. Lin, Gerald Hofstätter, Michael Schuster, André F. Rendeiro, Anna Koren, Mark Petronczki, Christoph Bock, André C. Müller, Georg E. Winter, Stefan Kubicek. **Acute BAF perturbation causes immediate changes in chromatin accessibility**. Nature Genetics (2021). doi:10.1038/s41588-021-00777-3
19. André F. Rendeiro, Joseph Casano, Charles Kyriakos Vorkas, Harjot Singh, Ayana Morales, Robert A DeSimone, Grant B Ellsworth, Rosemary Soave, Shashi N Kapadia, Kohta Saito, Christopher D Brown, JingMei Hsu, Christopher Kyriakides, Steven Chui, Luca Cappelli, Maria Teresa Cacciapuoti, Wayne Tam, Lorenzo Galluzzi, Paul D Simonson, Olivier Elemento, Mirella Salvatore, Giorgio Inghirami. **Profiling of immune dysfunction in COVID-19 patients allows early prediction of disease progression**. Life Science Alliance (2020). doi:10.26508/lsa.202000955
18. Alexander Swoboda, Robert Soukup, Oliver Eckel, Katharina Kinslechner, Bettina Wingelhofer, David Schörghofer, Christina Sternberg, Ha T T Pham, Maria Vallianou, Jaqueline Horvath, Dagmar Stoiber, Lukas Kenner, Lionel Larue, Valeria Poli, Friedrich Beermann, Takashi Yokota, Stefan Kubicek, Thomas Krausgruber, André F. Rendeiro, Christoph Bock, Rainer Zenz, Boris Kovacic, Fritz Aberger, Markus Hengstschläger, Peter Petzelbauer, Mario Mikula, Richard Moriggl. **STAT3 promotes melanoma metastasis by CEBP-induced repression of the MITF pathway**. Oncogene (2020). doi:10.1038/s41388-020-01584-6

17. Thomas Krausgruber, Nikolaus Fortelny, Victoria Fife-Gernedl, Martin Senekowitsch, Linda C. Schuster, Alexander Lercher, Amelie Nemc, Christian Schmidl, André F. Rendeiro, Andreas Bergthaler, Christoph Bock. **Structural cells are key regulators of organ-specific immune responses**. Nature (2020). doi:10.1038/s41586-020-2424-4
16. Rainer Hubmann, Susanne Schnabl, Mohammad Araghi, Christian Schmidl, André F. Rendeiro, Martin Hilgarth, Dita Demirtas, Farghaly Ali,Philipp B. Staber, Peter Valent, Christoph Zielinski, Ulrich Jäger, Medhat Shehata. **Targeting Nuclear NOTCH2 by Gliotoxin Recovers a Tumor-Suppressor NOTCH3 Activity in CLL**. Cells (2020). doi:10.3390/cells9061484
15. Elizabeth C Rosser, Christopher J.M. Piper, Diana E Matei ,Paul A. Blair, André F. Rendeiro, Michael Orford, Dagmar G. Alber, Thomas Krausgruber, Diego Catalan, Nigel Klein, Jessica J. Manson, Ignat Drozdov, Christoph Bock, Lucy R Wedderburn, Simon Eaton, Claudia Mauri. **Microbiota-Derived Metabolites Suppress Arthritis by Amplifying Aryl-Hydrocarbon Receptor Activation in Regulatory B Cells**. Cell Metabolism (2020). doi:10.1016/j.cmet.2020.03.003
14. André F. Rendeiro*, Thomas Krausgruber*, Nikolaus Fortelny, Fangwen Zhao, Thomas Penz, Matthias Farlik, Linda C. Schuster, Amelie Nemc, Szabolcs Tasnády, Marienn Réti, Zoltán Mátrai, Donat Alpar, Csaba Bödör, Christian Schmidl, Christoph Bock. **Chromatin mapping and single-cell immune profiling define the temporal dynamics of ibrutinib drug response in CLL**. Nature Communications (2020). doi:10.1038/s41467-019-14081-6
13. Michael Delacher, Charles D Imbusch, Agnes Hotz-Wagenblatt, Jan-Philipp Mallm, Katharina Bauer, Malte Simon, Dania Riegel, André F. Rendeiro, Sebastian Bittner, Lieke Sanderink, Asmita Pant, Lisa Schmidleithner, Kathrin L Braband, Bernd Echtenachter, Alexander Fischer, Valentina Giunchiglia, Petra Hoffmann, Matthias Edinger, Christoph Bock, Michael Rehli, Benedikt Brors, Christian Schmidl, Markus Feuerer. **Precursors for Nonlymphoid-Tissue Treg Cells Reside in Secondary Lymphoid Organs and Are Programmed by the Transcription Factor BATF**. Immunity (2020). doi:10.1016/j.immuni.2019.12.002
12. Christopher JM Piper, Elizabeth C Rosser, Kristine Oleinika, Kiran Nistala, Thomas Krausgruber, André F. Rendeiro, Aggelos Banos, Ignat Drozdov, Matteo Villa, Scott Thomson, Georgina Xanthou, Christoph Bock, Brigitta Stockinger, Claudia Mauri. **Aryl Hydrocarbon Receptor Contributes to the Transcriptional Program of IL-10-Producing Regulatory B Cells**. Cell Reports (2019). doi:10.1016/j.celrep.2019.10.018
11. Florian Puhm, Taras Afonyushkin, Ulrike Resch, Georg Obermayer, Manfred Rohde, Thomas Penz, Michael Schuster, Gabriel Wagner, André F. Rendeiro, Imene Melki, Christoph Kaun, Johann Wojta, Christoph Bock, Bernd Jilma, Nigel Mackman, Eric Boilard, Christoph J Binder. **Mitochondria are a subset of extracellular vesicles released by activated monocytes and induce type I IFN and TNF responses in endothelial cells**. Circulation Research (2019). doi:10.1161/CIRCRESAHA.118.314601
10. Sandra Schick, André F. Rendeiro, Kathrin Runggatscher, Anna Ringler, Bernd Boidol, Melanie Hinkel, Peter Májek, Loan Vulliard, Thomas Penz, Katja Parapatics, Christian Schmidl, Jörg Menche, Guido Boehmelt, Mark Petronczki, André C. Müller, Christoph Bock, Stefan Kubicek. **Systematic characterization of BAF mutations provides insights into intracomplex synthetic lethalities in human cancers**. Nature Genetics (2019). doi:10.1038/s41588-019-0477-9
9. Sara Sdelci, André F. Rendeiro, Philipp Rathert, Wanhui You, Jung-Ming G. Lin, Anna Ringler, Gerald Hofstätter, Herwig P. Moll, Bettina Gürtl, Matthias Farlik, Sandra Schick, Freya Klepsch, Matthew Oldach, Pisanu Buphamalai, Fiorella Schischlik, Peter Májek, Katja Parapatics, Christian Schmidl, Michael Schuster, Thomas Penz, Dennis L. Buckley, Otto Hudecz, Richard Imre, Shuang-Yan Wang, Hans Michael Maric, Robert Kralovics, Keiryn L. Bennett, Andre C. Müller, Karl Mechtler, Jörg Menche, James E. Bradner, Georg E. Winter, Kristaps Klavins, Emilio Casanova, Christoph Bock, Johannes Zuber, Stefan Kubicek. **MTHFD1 interaction with BRD4 links folate metabolism to transcriptional regulation**. Nature Genetics (2019). doi:10.1038/s41588-019-0413-z
8. Christian Schmidl*, Gregory I Vladimer*, André F. Rendeiro*, Susanne Schnabl*, Thomas Krausgruber, Christina Taubert, Nikolaus Krall, Tea Pemovska, Mohammad Araghi, Berend Snijder, Rainer Hubmann, Anna Ringler, Kathrin Runggatscher, Dita Demirtas, Oscar Lopez de la Fuente, Martin Hilgarth, Cathrin Skrabs, Edit Porpaczy, Michaela Gruber, Gregor Hoermann, Stefan Kubicek, Philipp B Staber, Medhat Shehata, Giulio Superti-Furga, Ulrich Jäger, Christoph Bock. **Combined chemosensitivity and chromatin profiling prioritizes drug combinations in CLL**. Nature Chemical Biology (2019). doi:10.1038/s41589-018-0205-2

7. Tahsin Stefan Barakat, Florian Halbritter, Man Zhang, André F. Rendeiro, Christoph Bock, Ian Chambers. **Functional dissection of the enhancer repertoire in human embryonic stem cells**. Cell Stem Cell (2018). doi:10.1016/j.stem.2018.06.014
6. Paul Datlinger, André F. Rendeiro*, Christian Schmidl*, Thomas Krausgruber, Peter Traxler, Johanna Klughammer, Linda C Schuster, Amelie Kuchler, Donat Alpar, Christoph Bock. **Pooled CRISPR screening with single-cell transcriptome readout**. Nature Methods (2017). doi:10.1038/nmeth.4177
5. Roman A Romanov, Amit Zeisel, Joanne Bakker, Fatima Girach, Arash Hellysaz, Raju Tomer, Alán Alpár, Jan Mulder, Frédéric Clotman, Erik Keimpema, Brian Hsueh, Ailey K Crow, Henrik Martens, Christian Schwindling, Daniela Calvigioni, Jaideep S Bains, Zoltán Máté, Gábor Szabó, Yuchio Yanagawa, Ming-Dong Zhang, André F. Rendeiro, Matthias Farlik, Mathias Uhlén, Peer Wulff, Christoph Bock, Christian Broberger, Karl Deisseroth, Tomas Hökfelt, Sten Linnarsson, Tamas L Horvath, Tibor Harkany. **Molecular interrogation of hypothalamic organization reveals distinct dopamine neuronal subtypes**. Nature Neuroscience (2016). doi:10.1038/nn.4462
4. Clara Jana-Lui Busch, Tim Hendrikx, David Weismann, Sven Jäckel, Sofie M. A. Walenbergh, André F. Rendeiro, Juliane Weißer, Florian Puhm, Anastasiya Hladik, Laura Göderle, Nikolina Papac-Milicevic, Gerald Haas, Vincent Millischer, Saravanan Subramaniam, Sylvia Knapp, Keiryn L. Bennett, Christoph Bock, Christoph Reinhardt, Ronit Shiri-Sverdlov, Christoph J. Binder. **Malondialdehyde epitopes are sterile mediators of hepatic inflammation in hypercholesterolemic mice**. Hepatology (2017). doi:10.1002/hep.28970
3. André F. Rendeiro*, Christian Schmidl*, Jonathan C. Strefford*, Renata Walewska, Zadie Davis, Matthias Farlik, David Oscier, Christoph Bock. **Chromatin accessibility maps of chronic lymphocytic leukaemia identify subtype-specific epigenome signatures and transcription regulatory networks**. Nature Communications. 7:11938 (2016). doi:10.1038/ncomms11938
2. Christian Schmidl*, André F. Rendeiro*, Nathan C Sheffield, Christoph Bock. 2015. **ChIPmentation: fast, robust, low-input ChIP-seq for histones and transcription factors**. Nature Methods (2015). doi:10.1038/nmeth.3542
1. Michaela Schwaiger, Anna Schönauer, André F. Rendeiro, Carina Pribitzer, Alexandra Schauer, Anna Gilles, Johannes Schinko, David Fredman, and Ulrich Technau. **Evolutionary conservation of the eumetazoan gene regulatory landscape**. Genome Research (2014). doi:10.1101/gr.162529.113

Communications

Conference talks

11. **Unsupervised discovery of tissue architecture with graphs**. *Biological Data Science Meeting, Cold Spring Harbour Laboratory*, October 2022.
10. **Spatial Analysis of Tissues and Organs**. *VBC PhD Symposium "Pushing Boundaries", Vienna, Austria*, October 2022.
9. **The spatial landscape of lung pathology during COVID-19 progression**. *IMC Summit*, October 2021, Singapore.
8. **Chromatin mapping and single-cell immune profiling define the temporal dynamics of Ibrutinib response in CLL**. *Young Scientist Association of the Medical University of Vienna PhD Symposia*, June 2019, Vienna, Austria.
7. **Chromatin mapping and single-cell immune profiling define the temporal dynamics of Ibrutinib response in CLL**. *Frontiers in Single Cell Genomics Meeting - Cold Spring Harbour Asia*, November 2018, Suzhou, China.
6. **CROP-seq: updates on the single cell CRISPR screening method**. *10X User Group Meeting 2018*, April 2018, EMBL, Heidelberg, Germany.
5. **Pooled CRISPR screening with single-cell transcriptome readout**. *SLAS 2018*, February 2018, San Diego, USA.
4. **Pooled CRISPR screening with single-cell transcriptome readout**. *Illumina User Group Meeting 2017*, February 2018, Bern, Switzerland.
3. **Large-scale ATAC-seq profiling to identify disease subtypes, regulatory networks and monitoring treatment in CLL**. *Illumina User Group Meeting 2017*, February 2018, Cologne, Germany.
2. **Pooled CRISPR screening with single-cell transcriptome readout**. *Ascona Workshop 2017*, May

2017, Ascona, Switzerland.

1. **Evolutionary conservation of the eumetazoan gene regulatory landscape**. *XVIII Portuguese Genetics Society Meeting*, June 2013. Porto, Portugal

Conference posters

5. **Chromatin mapping and single-cell immune profiling define the temporal dynamics of ibrutinib drug response in chronic lymphocytic leukemia**. *SCOG Workshop Computational Single Cell Genomics*, May 2019. Munich, Germany. doi:10.6084/m9.figshare.7892663.v1
4. **Combined chromatin accessibility and chemosensitivity profiling identifies targetable pathways and rational drug combinations in Ibrutinib-treated chronic lymphocytic leukemia**. *Young Scientist Association of the Medical University of Vienna PhD Symposia*, June 2017. Vienna, Austria.
3. **Large-scale chromatin profiling uncovers heterogeneity of molecular phenotypes and gene regulatory networks of chronic lymphocytic leukemia**. *Young Scientist Association of the Medical University of Vienna PhD Symposia*, June 2016, Vienna, Austria. 10.6084/m9.figshare.3479528.v1 **Best poster award in "Malignant Diseases" category**.
2. **Large-scale chromatin profiling uncovers heterogeneity of molecular phenotypes and gene regulatory networks of chronic lymphocytic leukemia**. *Keystone Symposia on Chromatin and Epigenetics*, March 2016, Whistler, Vancouver, Canada. https://doi.org/10.6084/m9.figshare.3479528.v1
1. **Identification of cis-regulatory elements in the sea anemone *Nematostella vectensis***. *Evonet Symposium*, September 2012, Vienna Austria. doi:10.6084/m9.figshare.107026

Additional experience

Teaching

2022/10 "Spatial Analysis of Tissues and Organs", CeMM PhD Program, Vienna

2022/06 Invited lecture: "Spatial Analysis of Tissues and Organs", course "Biomedical Informatics & Genomic Medicine", MSc Molecular Precision Medicine, Medical University of Vienna

Supervision and Mentoring

2022/09 - Ernesto Abila, PhD student - CeMM

2022/09 - Iva Buljan, PhD student - CeMM

2022/01 - 2022/04 Zhuoran (Karen) Xu, Data Science Statistician - Weill Cornell Medical College

2021/07 - 2022/10 Kelsey Chetnik, Staff Associate - Weill Cornell Medical College

2020/09 - Junbum (June) Kim, Graduate student - Weill Cornell Graduate School of Medical Sciences

Courses attended

2022/11 EMBO Lab Leadership Course - EMBO

2022/10 Motivation and Guidance of students during diploma or PhD thesis - Medical University of Vienna, Austria

2022/01 PI Crash Course: Skills for Future or New Lab Leaders - Columbia University, NY, USA

2021/04 Probabilistic Modeling in Genomics, Virtual meeting - Cold Spring Harbor, NY, USA

2015/09 Summer School on Machine Learning for Personalised Medicine - Marie Curie Initial Training Network, Manchester, UK

2012/09 Scientific writing course - University of Aveiro, Portugal

Associative/Administrative

2010/09 - 2012/06 Member of the Biology department counsel, University of Aveiro, Portugal

2009/09 - 2011/06 Member of the undergraduate Biology committee, University of Aveiro, Portugal

Early Research Activity

2013/08 - 2014/06 **The role of E2F regulation and H3K79 methylation in *Oikopleura dioica*'s cell cycle modes**, *Sars International Centre for Marine Molecular Biology, Bergen, Norway*.
Supervisor: Eric Thompson

2011/09 - 2012/07 **Identification of cis-regulatory elements in *Nematostella vectensis* using ChIP-seq**, *Dept. of Molecular Evolution and Development, University of Vienna, Austria.*
Supervisor: Ulrich Technau

2010/09 - 2011/06 **Tol2-mediated zebrafish transgenesis for studies in protein mistranslation**, *RNA Biology Laboratory, Biology Department, University of Aveiro, Portugal.*
Supervisor: Manuel Santos

2009/09 - 2010/06 **Transciptome studies with microarrays in heat-shocked yeast**, *RNA Biology Laboratory, Biology Department, University of Aveiro, Portugal.*
Supervisor: Manuel Santos

Licenses and certifications

2021/04 - 2025/04 **Biomedical Research Investigators and Key Personel**, *Credential ID: 41194853.*
CITI Program

2021/04 - 2025/04 **Good Clinical Practice**, *Credential ID: 41194854.*
CITI Program

2020/06 - 2026/01 **Responsible Conduct of Research for Faculty**.
Weill Cornell Medical College

2020/12 - 12-2025 **Responsible Conduct of Research**.
Tri-Institutional program: MSK Cancer Center, Weill Cornell Medical College, Rockefeller University

Awards

2016/06 **Best poster award - "Malignant diseases" category**, *YSA Symposium.*
Young Scientist Association of the Medical University of Vienna

2016/06 **Best artwork award - "Illustrations and digital simulations" category**, *ScienceArt Competition of the YSA Symposium.*
Young Scientist Association of the Medical University of Vienna

Skills

Computational Biology

Data science Development of data processing pipelines; Data-driven unsupervised analysis and visualisation; Statistical analysis; Application of unsupervised and supervised machine learning models; Application of Bayesian methods and probabilistic programming

Applications Analysis of: image data (IMC, IHC, IF, brightfield); single cell *-seq; bulk ATAC-/ChIP-/RNA-seq; CyTOF and flow cytometry; CRISPR screens

Programming Experienced in *Python* and *R* programming; Knowledge of *Rust* programming
Competence in software development: version control, testing, continuous integration.

Molecular Biology

Techniques Chromatin IP, ChIP-seq, NGS libraries, Western blotting, PCR, Cloning
Additional experience in: Chemical screening, Zebrafish and *Nematostella* handling and microinjection, basic experience in immunohistochemistry, fluorescence and confocal microscopy

Software

IMC A package for the analysis of imaging mass cytometry data:
https://github.com/ElementoLab/imc

imcpipeline A pipeline for the preprocessing of imaging mass cytometry data:
https://github.com/ElementoLab/imcpipeline

imctransfer Program for the robust, parallel transfer of raw IMC data between machines:
https://github.com/ElementoLab/imctransfer

page-enrichment A Python implementation of the Parametric Analysis of Gene Set Enrichment (PAGE):
https://github.com/afrendeiro/page-enrichment

ngs-toolkit	A toolkit for the analysis of NGS data: https://github.com/afrendeiro/toolkit
peppy	A package to work with Portable Encapsulated Projects (PEP) in Python: https://github.com/pepkit/peppy
looper	A job controller for Portable Encapsulated Projects (PEP): https://github.com/pepkit/looper
open_pipelines	Pipelines for a variety of NGS data: https://github.com/epigen/open_pipelines

Languages

Portuguese	Native speaker	
English	Very good	
Spanish	Conversational	
German	Basic	*Basic words and phrases only*
French	Basic	*Basic words and phrases only*

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