Vera Martins

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Date of birth: 07.01.1979; Nationality: Portuguese; 2 Children
URL for websites: VMartins lab Webpage; Website@IGC

RESEARCH INTEREST

My primary research interest is on T lymphocyte development in physiology and malignancy. My work bears the potential to significantly improve disease treatments, thereby improving patient outcomes by bridging fundamental cell and organismal biology with the clinic.

EDUCATION

17.12.2007	**PhD in Natural Sciences (Dr. rer. nat.)**, main focus on Immunology Max Planck Institute of Immunobiology and Epigenetics and Faculty of Biology, Albert-Ludwigs-Universität Freiburg, Freiburg, ***Germany:*** "*Notch1 and Lymphotoxin β receptor in thymopoiesis"* Thesis advisors: Prof. Thomas Boehm and Dr. Conrad Bleul
17.06.2003	**Diploma in Microbiology and Genetics** (5-year University Degree) Faculdade de Ciências, Universidade de Lisboa, Lisbon, ***Portugal***

CURRENT AND PREVIOUS POSITIONS

Since 09.2015	**Independent Group Leader** – Lymphocyte Development and Leukemogenesis Laboratory Instituto Gulbenkian de Ciência (IGC), Oeiras, Portugal
09.2008 – 08.2015	**Postdoctoral researcher –** Dpt. Internal Medicine III and Institute of Immunology, University Hospital of Ulm, and Cellular Immunology, German Cancer Research Center, Heidelberg, Germany. Advisors/Research Topics: *Prof. Hans-Reimer Rodewald* (principal advisor): 1. Autonomous thymopoiesis, cell competition in the thymus and leukemogenesis. 2. *Foxn1* in the mouse thymus epithelium developing a novel, *knock-in* mouse model; *Prof. Hans-Jörg Fehling* (co-advisor): 1. *Gata3* in hematopoietic stem cells (HSC); 2. *Developmental-pluripotency associated 4 (Dppa4)* in HSC; 3. Lineage tracing analyses in hematopoiesis using a *pTα*-reporter mouse; *Dr. Kuchenbauer* (collaborator): 1. *miR-128* in T and B lymphopoiesis; 2. microRNAs in acute myeloid leukemia (AML).
01.2008 – 06.2008	**Postdoctoral researcher**, Max Planck Institute of Immunobiology and Epigenetics, Freiburg, Germany. Advisor/Research Topic: *Prof. Thomas Boehm*, Fibroblast growth factor (Fgf) in thymic epithelial cells.

EXTERNAL FUNDING to the lab

2022	*T cell acute lymphoblastic leukemia: Origin & Relapse –T-ALLOREL,* **€682k**, 3 years, **La Caixa** Foundation: HR22-00799, Project Leader.
2021	*Cell competition in the thymus vs Leukemia – Understanding homeostasis and disease prevention* – CellCompLeu*,* **€250k**, 3 years, Fundação para a Ciência e Tecnologia - **FCT**: PTDC/MED-FSL/3649/2021, Principal Investigator.
2019	*Cell competition in the thymus* – CellCompT, **~€270k,** 6 years (~45k/yr since 08/2020), **FCT**: CEECIND/03106/2018*,* covers the PI's salary.
2017	*Cell competition in the thymus* – CellCompT, **€240k**, 3 years (10.2018-09.2021), **FCT**: PTDC/BIA-BID/30925/2017*,* Principal Investigator.
2018	Cell competition in T lymphocyte development: molecular players*, ~€52,8k, 4 years, FCT:* PD/BD/139190/2018*, individual* ***PhD Fellowship*** *granted to Camila Ramos.*
2016	Thymus Autonomy*, ~€52,8k, 4 years, FCT:* PD/BD/114341/2016*, individual* ***PhD Fellowship*** *granted to Rafael Paiva.*

FELLOWSHIPS AND AWARDS

2013	**Fritz and Ursula Melchers Award**, by the German Society of Immunology
2008	Postdoctoral **fellowship from the Max-Planck Society**, Germany
2004-2007	PhD **Fellowship from the Portuguese National Research Council** (*Fundação para a Ciência e Tecnologia – FCT*), Ref.: SFRH/BD/12502/2003 Portugal

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

At IGC: 2 postdoc fellows (**RS Paiva** 2019-2021; **L Ballesteros-Arias,** 2016-2018: Lecturer at Universidad Autonoma Madrid, Spain), **3 PhD students** (2016-21 and 2017-2023: both postdocs at the Curie Institute, Paris, and one in the lab since 2023), **5 MSc** (**RV Paiva,** in the lab, **S Santos,** 2022; **S Azenha,** 2021: PhD student at IGC; **M Nogueira,** 2020: PhD student at Max-Delbruck Center, Berlin, Germany; **M Ávila,** 2018: PhD student at Universidad de la Laguna, Spain), and **1 BSc** students (2017). 7 BSc/MSc students on voluntary internships. I also supervised 3 lab managers and 4 graduate lab assistants (**J Silva:** PhD at the Univ. Lausanne, Switzerland, **V Correia:** lab manager at Limm Therapeutics SA). **At Ulm University**: co-supervised 2 PhD, 1 MSc students, 4 technicians.

TEACHING ACTIVITIES

At IGC: Gulbenkian PhD Program in Integrative Biology and Biomedicine (since 2016) Lectures: **i.** *T and B lymphocyte Development;* **ii.** *Cell competition* and *T cell acute lymphoblastic leukemia*; Co-organizer of the modules: Immunobiology (2019), Dev. Biology (2019), Host Microbe Interaction (2017); **INTERFACE PhD Program** (2018, 2019) *T and B lymphocyte Development*; **MSc in Evolutionary and Developmental Biology**, Faculty of Sciences, University of Lisbon (2015): *Animal Models in Biomedical Research*.
At German Cancer Research Center (DKFZ), Heidelberg: **Major in Cancer Biology** (2014): *Leukemogenesis*.
At Ulm University: **BSc Molecular Medicine** (2013, 2012): *Practical course in Immunology, allergology and immunopathology*; **Medicine** (2013, 2012, 2011): *Problem oriented learning: Immunodeficiencies, lymphoid leukemias and novel gene therapeutic approaches*; **Dentistry** (2009) *Immunology*.

REVIEWING ACTIVITIES

- **Main referee in 3 external PhD theses**: S. Madeira, *Environmental sensing by immune cells*, lab HV Fernandes, ***Champalimaud Center for the Unknown, Lisbon, Portugal*** (2018); M. Ghezzo, *Thymic stromal factors promoting T-cell leukemia*, lab N Rodrigues dos Santos (i3S), ***Univ. Algarve, Faro, Portugal*** (2017); D.S. Ribeiro, *Dissecting the Cellular and Molecular Mechanisms of IL-7-mediated leukemia T-cell survival, proliferation and cell growth,* lab J Barata, ***Instituto Medicina Molecular, IMM, Lisbon, Portugal*** (2016).
- **Referee in internal PhD thesis**: S. Tehrani, *Determining the role of STAT1 and STAT3 transcription factors in transcriptional memory*, lab L. Jansen, IGC (2022); I. Coelho*, Responses to liver damage: Macrophage plasticity in tissue recovery and dysbiotic drifts* lab C Penha Gonçalves, IGC (2019).
- **Advisor in 8 PhD Thesis Committees**, 5 in house and 3 external (2 at Instituto Medicina Molecular and 1 at Champalimaud Center for the unknown, Lisbon, Portugal).
- **Main referee in external MSc thesis**: M. Avelar, *Molecular determinants of thymic development of CD8-expressing γδ T cells,* lab B Silva-Santos, Instituto Medicina Molecular, IMM, Lisbon, Portugal (2020)
- **Review Editor**, Editorial Board of T Cell Biology – Frontiers in Immunology, the official journal of the European Federation of Immunological Societies (since 2021)
- **Reviewer** for: Nature Communications, Science Advances, FEBS J, Cell Reports, eLife, Frontiers in Immunology, Immunological Letters, Seminars in Cancer Biology

COMMISSIONS OF TRUST

- External **evaluator of the Fellowship** Clinical Research Career Development Program**,** Wellcome Trust (UK) (2021)
- External **evaluator of the Grant** Springboard Scheme**,** Academy of Medical Sciences (UK) (2020)
- External **evaluator of the Pfizer Prize in Basic Research** (2018)
- **Juri member** of the **Innovate Competition iMed Conference** (2020, 2021)
- **Evaluator** of the **Travel Award** of the **Portuguese Society of Immunology** (since 2018)

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- **Elected Member of the Board of Directors** (Scientific Secretary), Portuguese Society of Immunology (SPI), since 2018, reelected in 2021 for a second cycle.
- **T cell connect Europe (TCCE),** EFIS (European Federation of Immunological Societies), since 2019.
- **Member** of the SPI, **Member** of the German Society of Immunology (DGfI), since 2013.

PUBLICATIONS (5 selected)

1. Paiva RA, Ramos CV, Leiria G, **Martins VC**. 2022. IL-7 Receptor Drives Early T Lineage Progenitor Expansion. ***J Immunol*** 10: 1942-1949 DOI: 10.4049/jimmunol.2101046.
2. Paiva RS, Ramos CV, Azenha SR, Alves C, Basto AP, Graca L, **Martins VC**. ***2021.*** *Peptidylprolyl Isomerase C*

(Ppic) regulates invariant Natural Killer T cell (iNKT) differentiation in mice. ***Eur J Immunol*** 51: 1968-79 DOI: 10.1002/eji.202048924.

3. Paiva RA, Sousa AGG, Ramos CV, Ávila M, Lilue J, Paixão T, **Martins VC**. ***2021***. Self-renewal capacity of double negative 3 (DN3) early thymocytes preserves thymus autonomous function but compromises the β-selection checkpoint. ***Cell Rep*** 35: 108967 DOI: 10.1016/j.celrep.2021.108967.
4. Ramos CV, **Martins VC**. ***2021***. Cell competition in hematopoietic cells: Quality control in homeostasis and its role in leukemia. ***Dev Biol*** 475: 1-9 *Review* DOI: 10.1016/j.ydbio.2021.02.013.
5. Ramos CV, Ballesteros-Arias L, Silva JG, Paiva RA, Nogueira MF, Carneiro J, Gjini E, **Martins VC. *2020***. Cell Competition, the Kinetics of Thymopoiesis, and Thymus Cellularity Are Regulated by Double-Negative 2 to 3 Early Thymocytes. ***Cell Rep*** 32: 107910 DOI: 10.1016/j.celrep.2020.107910.
6. Ballesteros-Arias L*, Silva JG*, Paiva RA, Carbonetto B, Faisca P, **Martins VC**. ***2019.*** T Cell Acute Lymphoblastic Leukemia as a Consequence of Thymus Autonomy. ***J Immunol*** 202: 1137-44 *equal contribution. DOI: 10.4049/jimmunol.1801373.
7. Paiva RA*, Ramos CV*, **Martins VC**. ***2018.*** Thymus autonomy as a prelude to leukemia. ***FEBS J*** 285: 4565-74 *equal contribution. *Viewpoint* DOI: 10.1111/febs.14651.
8. Krowiorz K, Ruschmann J, Lai C, Ngom M, Maetzig T, **Martins V**, Scheffold A, Schneider E, Pochert N, Miller C, Palmqvist L, Staffas A, Mulaw M, Bohl SR, Buske C, Heuser M, Kraus J, O'Neill K, Hansen CL, Petriv OI, Kestler H, Dohner H, Bullinger L, Dohner K, Humphries RK, Rouhi A, Kuchenbauer F. ***2016***. MiR-139-5p is a potent tumor suppressor in adult acute myeloid leukemia. ***Blood Cancer J*** 6: e508 DOI: 10.1038/bcj.2016.110.
9. Rode I, **Martins VC**, Kublbeck G, Maltry N, Tessmer C, Rodewald HR. ***2015***. Foxn1 Protein Expression in the Developing, Aging, and Regenerating Thymus. ***J Immunol*** 195:5678-5687 DOI: 10.4049/jimmunol.1502010.
10. **Martins VC**, Busch K, Juraeva D, Blum C, Ludwig C, Rasche V, Lasitschka F, Mastitsky SE, Brors B, Hielscher T, Fehling HJ, Rodewald HR. ***2014***. Cell competition is a tumour suppressor mechanism in the thymus. ***Nature*** 509:465-470 DOI: 10.1038/nature13317.
11. Luche H, Nageswara Rao T, Kumar S, Tasdogan A, Beckel F, Blum C, **Martins VC**, Rodewald HR, Fehling HJ. ***2013***. In vivo fate mapping identifies pre-TCRalpha expression as an intra- and extrathymic, but not prethymic, marker of T lymphopoiesis. ***J Exp Med*** 210: 699-714 DOI: 10.1084/jem.20122609.
12. **Martins VC**, Ruggiero E, Schlenner SM, Madan V, Schmidt M, Fink PJ, von Kalle C, Rodewald HR. ***2012***. Thymus-autonomous T cell development in the absence of progenitor import. ***J Exp Med*** 209:1409-1417 DOI: 10.1084/jem.20120846.
13. **Martins VC**, Boehm T, Bleul CC. ***2008***. Ltbetar signaling does not regulate Aire-dependent transcripts in medullary thymic epithelial cells. ***J Immunol*** 181:400-407 DOI:10.4049/jimmunol.181.1.400.
14. Benz C, **Martins VC**, Radtke F, Bleul CC. ***2008***. The stream of precursors that colonizes the thymus proceeds selectively through the early T lineage precursor stage of T cell development. ***J Exp Med*** 205: 1187-99 DOI: 10.1084/jem.20072168.
15. Heinzel K, Benz C, **Martins VC**, Haidl ID, Bleul CC. ***2007***. Bone marrow-derived hemopoietic precursors commit to the T cell lineage only after arrival in the thymic microenvironment. ***J Immunol*** 178: 858-68 DOI: 10.4049/jimmunol.178.2.858.

Other publications:

Alves NL, Carvalho A, Serre K, **Martins VC**, Saraiva M. **2020**. The Portuguese Society for Immunology (SPI): history and mission. ***Eur J Immunol*** 50: 918-20 (*Historical perspective*) DOI: 10.1002/eji.202070075.