

Isaura Martins, PhD

Católica Medical School
Center for Interdisciplinary Research in Health (CIIS)

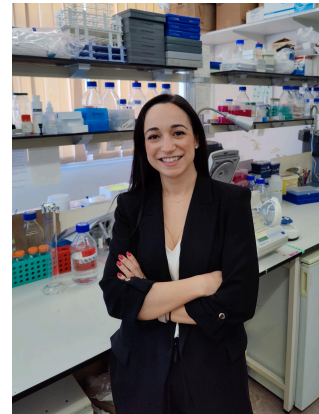
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RESEARCH INTERESTS

Neuroregeneration • Spinal Cord injury • Traumatic Brain Injury • Inflammation • Endothelial Cells • Blood Brain/Spinal Barrier • Ageing • Periphery and Systemic Inflammation • Animal Behavior • Mouse Models • Vascular Ageing • Neuropathic Pain

PROFESSIONAL EXPERIENCE

- 2025-present:** Assistant Professor, Neuroscience and Medicine Bachelor Degrees
Católica Medical School
- 2024-present:** Principal Investigator Católica Medical School - Center for Interdisciplinary Research in Health (CIIS)
- 2024-present:** Visiting Researcher GIMM, Lisbon, Portugal
- 2023- 2024:** Postdoctoral Fellow iMM-JLA, Lisbon, Portugal
- 2017 - 2023:** Postdoctoral FCT Fellow iMM-JLA, Lisbon, Portugal
- 2021:** Science writing consultant Haymarket Media Inc, New York, USA
- 2015 - 2017:** Postdoctoral Researcher iMM-JLA, Lisbon, Portugal
- 2011 - 2015:** PhD FCT Fellow University of Manchester, Manchester, UK
- 2010 - 2011:** Research Trainee CNC, Coimbra, Portugal

EDUCATION

- 2011 - 2015: PhD (Neuroscience)** University of Manchester, Manchester, UK Thesis: *The effect of a high-fat diet in health and in an animal model of Alzheimer's disease: a gender comparison study*. Dr. Catherine Lawrence supervision, Faculty of Life Sciences, University of Manchester (UK), Brain Inflammation Group
- 2008 - 2010: M.S. (Biochemistry)** University of Coimbra, Coimbra, Portugal Thesis: *Neuroprotection by leptin and ghrelin against amyloid-beta toxicity in hippocampal neurons. Relevance for therapeutic intervention in Alzheimer's disease*. Dr. Cláudia Pereira supervision, Center for Neuroscience and Cell Biology (CNC) and Institute of Biochemistry, Faculty of Medicine of Coimbra, University of Coimbra, Coimbra, Portugal
- 2005 - 2009: B.S. (Biochemistry)** University of Coimbra, Coimbra, Portugal Dissertation: *The role of mitochondrion – the importance of Rh0 cells in Alzheimer's disease*. Research in Molecular Mechanisms of disease group under Dr. Cláudia Pereira supervision. Center for Neuroscience and Cell Biology (CNS) and Institute of Biochemistry, Faculty of Medicine of Coimbra, University of Coimbra, Coimbra, Portugal

SCIENTIFIC AND PROFESSIONAL TRAINING

- 2020: Trends in CNS Regenerative Medicine** Minho University - ICVS, Braga, Portugal
2018: Spinal Cord Injury Neuroscience School of Advanced Studies, Venice, Italy
2017: Spinal Cord Injury Training Program Ohio State University, Columbus, Ohio, USA
2016: Staff Exchange under the Twining Program at Prof. Dr. Hellmut Augustin Lab German Cancer Research Center DKFZ, Heidelberg, Germany
2013: Research Trainee at Prof. David Allsop Lab University of Lancaster, Lancaster, UK

AWARDS/HONORS

- 2025:** Fundação Grünenthal & Associação Portuguesa para o Estudo da Dor
2025: DMM Conference Travel Grant, Company of Biologists
2025: SPN Effective Member Travel Grant
2023: SPBD Outstanding Developmental Biology Paper Award 2023
2022: Lídia Silva Santos Postdoctoral Achievement Award 2022
2022: Best oral Communication Award – I International Meeting on the Brain Vasculature
2021: Pfizer Basic Research Award 2021
2020: Invited speaker International Online Spinal Cord Injury Research Seminars (i-OSCIRS)
2017: Craig H. Neilson Foundation Sponsorship to attend SCITP 2017 Ohio State University
2016: 6 years Postdoctoral FCT Fellowship Grant
2014: Travel Grant Guarantors of Brain
2013: Best Neuroscience oral presentation award University of Manchester
2013: Travel Grant Guarantors of Brain
2010: International PhD FCT Fellowship Grant

FUNDING

- 2025:** Fundação Grünenthal & Associação Portuguesa para o Estudo da Dor
2025: Morton Cure Paralysis Fund Grant
2024: Wings for Life Foundation Project Grant
2023: Morton Cure Paralysis Fund Grant
2022: Exploratory Research Project FCT PeX 2022

PUBLICATIONS

Conference papers

- Martins, Isaura;** Knight, Elysse; Allan, Stuart; Lawrence, Catherine. "Effects of a high fat diet on the cerebrovasculature and neuroinflammation in an experimental model of Alzheimer's disease". Paper presented in Alzheimer's Association International Conference, Vancouver, 2012. 10.1016/j.jalz.2012.05.1263
- Martins, Isaura;** Allan, Stuart; Lawrence, Catherine. "THE EFFECT OF RESVERATROL SUPPLEMENTATION ON THE EFFECTS OF A HIGH-FAT DIET IN A 3XTGAD FEMALE MOUSE MODEL OF ALZHEIMER'S DISEASE". Paper presented in Alzheimer's Association International Conference, Copenhagen, 2014. 10.1016/j.jalz.2014.05.648

Journal articles

1. **Martins I.***, Neves-Silva D., Ascensão-Ferreira M., Dias A.F., Ribeiro D., Isidro A.F., Quitéria R., Paramos-de-Carvalho D., Barbosa-Morais N.L. and Saúde L. (2023) Mouse spinal cord vascular transcriptome analysis identifies CD9 and MYLIP as injury-induced players. *Int. J. Mol. Sci.* 24, 7:6433. **DOI:** 10.3390/ijms24076433. (***corresponding author**) **IF:** 6.208.
2. Isidro A., Medeiros A.M., **Martins I.**, Neves-Silva D., Saúde L. and Mendes C. Using the MouseWalker to quantify locomotor dysfunction in a mouse model of spinal cord injury. (2023) *J. Vis. Exp.* 193, e65207. **DOI:**10.3791/65207. **IF:** 1.424.
3. Frederico B., **Martins I.**, Chapela D., Gasparrini F., Chakravarty P., Ackels T., Piot C., Almeida B., Carvalho J., Ciccarelli A., Peddie C.J., Rogers N., Briscoe J., Guillemot F., Schäfer A.T., Saúde L. and Reis e Sousa C. (2022) DNGR-1-tracing marks an ependymal cell subset with damage-responsive neural stem cell potential, *Dev. Cell* 57: 1957- 1975.e9. **DOI:** 10.1016/j.devcel.2022.07.012 **IF:** 13.417. **Citation Counts:** 3
4. Paramos-de-Carvalho D.*, **Martins I.***, Cristóvão A.M., Dias A.F., Neves-Silva D., Chapela D., Farinho A., Pereira T., Jacinto A. and Saúde L. (2021) Targeting senescent cells improves functional recovery after spinal cord injury. *Cell Reports* 36: 109334. **DOI:** 10.1016/j.celrep.2021.109334 (***shared first author**) **IF:** 9.423. **Citation Counts:** 17
5. Paramos-de-Carvalho D.*, **Martins, I.*** Cristóvão A.M., Dias A.F., Neves-Silva D., Chapela D., Farinho A., Pereira T., Jacinto A. and Saúde L. (2020) "Depletion of senescent cells improves functional recovery after spinal cord injury". *bioRxiv:* <https://doi.org/10.1101/2020.10.28.358762>. (***shared first author**) **Citation Counts:** 2
6. Chapela D., Sousa S*, **Martins I.***, Cristóvão A., Pinto P., Corte-Real S., Saúde L. (2019) A zebrafish drug screening platform boosts the discovery of novel therapeutics for spinal cord injury in mammals. *Sci Rep* 9(1):10475. **DOI:** 10.1038/s41598-019-47006-w (*** shared second author**) **IF:** 4.525. **Citation Counts:** 18
7. **Martins I.**, Rivers-Autin J., Allan S., Lawrence C.B. (2017) Mitochondrial abnormalities and synaptic loss underlie memory deficits seen in mouse models of obesity and Alzheimer's disease. *Journal of Alzheimer's disease* 55(3):915-932. **DOI:** 10.3233/JAD 160640. **IF:** 3.731. **Citation Counts:** 55
8. Knight E.M., **Martins I.V.A.**, Gümüşgöz S., Allan S., Lawrence C.B. (2014) High-fat diet induced memory impairment in 3xTgAD mice is independent of changes in amyloid and tau pathology. *Neurobiology of Aging* 35(8):1821-32. **DOI:** 10.1016/j.neurobiolaging.2014.02.010. **IF:** 5.013. **Citation Counts:** 218
9. Gomes S., **Martins I.**, Fonseca A. C., Oliveira C. R., Resende R., Pereira C. M. (2014) Protective effect of leptin and ghrelin against toxicity induced by amyloid- β oligomers in a hypothalamic cell line. *J Neuroendocrinology* 26 (3): 176-85. **IF:** 3.138. **Citation Counts:** 53
10. **Martins I.**, Gomes S., Costa R. O., Otvos L., Oliveira C. R., Resende R., Pereira C. M. (2013) Leptin and ghrelin prevent hippocampal dysfunction induced by A β oligomers. *Neuroscience* 241 (0) 41-51. **IF:** 3.327. **Citation Counts:** 57
11. Costa R. O., Ferreira E., **Martins I.**, Santana I., Cardoso S. M., Oliveira C. R., Pereira C. F.

(2012) Amyloid β -induced ER stress is enhanced under mitochondrial dysfunction conditions. *Neurobiology of Aging*. 33 (4):824.e5-824.e16. **IF:** 6.166. **Citation Counts:** 83

INTELLECTUAL PROPERTY

1. **Provisional patent application PT 118583 (Pending)**. “Treatment of Spinal Injury”.

Inventors: **Martins, I.**, Saúde, L. And Neves-Silva, D.

Applicants: iMM

2. **Patent PCT/EP2020/075769**. “Treatment of spinal cord injury”.

Inventors: Paramos-de-Carvalho, D., **Martins, I.**, Jacinto, A. and Saúde, L.

Applicants: iMM & UNL

3. **Patent PCT/IB2020/062306**. “Eletriptan Hydrobromide for treatment of spinal cord injury and improvement of locomotor function”.

Inventors: Chapela, D., Côte-Real, S., Saúde, L., **Martins, I.**, Sousa, S.

Applicants: TechnoPhage, SA & iMM

SUPERVISION

2025 - 2026: Supervisor of Olivia Domingos, Cognitive and Behavioral Neuroscience Master Student under the Thesis: CD9 and MYLIP in Spinal Cord Injury: Cognitive Implications

2025 - 2026: Supervisor of Maria Borges, Organismal and Evolutionary Biology Master Student under the Thesis: IDOL-induced metabolic changes in scar formation after spinal cord injury

2025 - 2026: Supervisor of Daniel Sares, Biomedical Research Master Student under the Thesis: CD9 as a Key Regulator of Inflammatory-Mediated Neuropathic Pain Following Spinal Cord Injury

2025-present: Supervisor of Isa Mota, PhD Candidate

2024 – present: Supervisor of Dalila Neves-Silva, postdoctoral fellow under WFL grant.

2024 - 2025: Supervisor of Madalena Pires, Biomedical Research Master Student under the Thesis: Uncovering the role of MYLIP-expressing pericytes as new regulators of neuroinflammation and blood spinal cord barrier integrity after spinal cord injury.

2021 - 2023: Supervisor of Mariana Monteiro, Veterinary Medical Master Student under the Thesis: Histopathological and molecular characterization of the Liver after Spinal Cord Injury in the Mouse.

2020 - present: Co-supervisor of Ana Isidro, PhD Student (SFRH/BD/08168/2020), under the Thesis: The role of induced senescent cells in spinal cord neuroprotection and repair after an injury.

2020 - 2024: Co-supervisor of Dalila Silva, PhD Student (SFRH/BD/138636/2018), under the Thesis: The contribution of the perivascular and extracellular matrix components to the spinal cord regenerative outcome.

2020: Supervisor of the project “The role of periphery in spinal cord injury” for a Master Lecture Degree at Universidade do Algarve Departamento de Ciências Biomédicas e Medicina, Portugal

2018: Tutor for medical student under the SCORE Research Exchange - Intercâmbios em Investigação Científica, da IFMSA, Faculdade de Medicina de Lisboa and Samarskij gosudarstvennyj medicinskij universitet, Russia.

2013-2014: Supervisor of a Master Student at the University of Manchester, UK under the Thesis: Effect of High Fat Diet and Alzheimer's Disease on Peripheral Inflammation and Oxidative Stress: Potential of Resveratrol to Attenuate Peripheral Mechanisms and Cognition.

SCIENTIFIC EVENTS COMMITTEES

2026: Chair of the EMBO Practical Course entitled "Spinal Cord Injury Models Training Course", Lisbon, Portugal

2024: Conference scientific committee 4th Spinal Cord Injury Portuguese Meeting, Lisbon, Portugal

JURY IN ACADEMIC DEGREES

Student: Luís Carlos Sousa Fernandes

Supervisor: Nuno Silva

Thesis: Compound Library Screening for Neural Repair: Finding New Drugs for Old Problems

University: Universidade do Minho – Instituto de Investigação em Ciências da Vida e Saúde

Student: Ana Teresa Palha Sousa

Supervisor: António Salgado

Thesis: Impact and Transcriptomic Analysis of the Effect of the Secretome of Adipose Tissue derived Stem Cells in an in vitro Model of Spinal Cord Injury

University: Universidade do Minho – Instituto de Investigação em Ciências da Vida e Saúde

Student: Jorge Miguel Ramalho Borbinha

Supervisor: António Jacinto

Thesis: The effects of Metabolic Reprogramming during Zebrafish Tissue Regeneration

University: NOVA Medical School da Universidade NOVA de Lisboa (FCM|NMS/UNL)

OTHER ACTIVITIES

2023 - present: Scientific Jury to Gabinete de apoio à investigação científica, tecnológica e inovação (GAPIC), Faculty of Medicine, University of Lisbon

2022: Invited Reviewer to Frontriers of Neuroscience Journal

2021: Science writing consultant Haymarket Media Inc, New York, USA

2018 - present: Journal scientific committee Journal de Investigação Médica (JIM)

2017: EMBO Leadership and Management Skills Workshop

2014: Volunteer at Central Manchester University Hospital, Manchester, UK

ORAL COMMUNICATIONS

1. **CD9 as a driver of neurophatic pain through adaptative immunity after spinal cord injury** XIX Meeting of the Portuguese Society for Neuroscience 2025, Póvoa do Varzim, Portugal - **Selected Speaker**
2. **Neurovascular interactions in spinal cord injury** Católica Medical School Seminar
3. **Vascular therapeutic approaches to improve spinal cord repair: CD9 and MYLIP as two new vascular injury-induced players** Medical Technologies in Spinal Cord Injury, an Awareness Workshop 2023 – **Keynote Lecture**
4. **Mouse spinal cord vascular transcriptome analysis identifies CD9 and MYLIP as injury induced players** Building Bridges in Biology – IGC Symposium 2023 – **Selected Speaker**
5. **Endothelial cells as modulators of spinal cord regeneration: a tale of two models, zebrafish and mouse** I International Meeting on the Brain Vasculature 2022 Virtual - **Selected Speaker**
6. **Targeting Senescent Cells Improves Functional Recovery After Spinal Cord Injury** Champalimaud Foundation Postdoctoral Exchange Seminar 2022, Lisbon, Portugal
7. **Targeting Senescent Cells Improves Functional Recovery After Spinal Cord Injury** MIA-Portugal Ageing Spring School 2022, Coimbra, Portugal – **Selected Speaker**
8. **Targeting Senescent Cells Improves Functional Recovery After Spinal Cord Injury** Central Nervous System Injury and Repair Gordon Research Seminars 2022, Oxnard, CA, USA – **Selected Speaker**
9. **Improving spinal cord repair: from targeting senescence to endothelial cells and beyond** UC-Biotech, Seminars 2021, Cantanhede, Portugal
10. **Senescent cells as new players in Spinal Cord Injury. A tale of two opposite models: Zebrafish vs Mouse** Development in Action (DiA) Meeting 2020, Instituto de Investigação e Inovação em Saúde (i3S) - Universidade do Porto, Porto, Portugal
11. **Senescent cells as new players in Spinal Cord Injury. A tale of two opposite models: Zebrafish vs Mouse** International Online Spinal Cord Injury Research Seminars (i OSCIRS) 2020 – **Invited Speaker**
12. **The Endothelial Cells Transcriptome after Spinal Cord Injury. A tale of two opposite models: Zebrafish vs Mouse** Postdoc Day 2019, Instituto de Medicina Molecular, Lisbon, Portugal
13. **Endothelial cells and spinal cord injury** Lisbon Area PostDoctoral Meeting 2018, Museu do Oriente, Lisboa, Portugal
14. **The vessel at the end of the tunnel: the role of endothelial cells in spinal cord regeneration** Postdoc Retreat Scientific Symposium 2017, Lisbon, Portugal
15. **Angiocrine factors as potential modulators of spinal cord regeneration** Lesões Vertebro Medulares Meeting 2017, Porto, Portugal
16. **The effect of a high-fat diet on an animal model of Alzheimer's disease** PhD Neuroscience Symposium 2014, Manchester, United Kingdom
17. **Resveratrol supplementation on the effects of a high-fat diet in female 3xTgAD mice** PhD Conference 2014 University of Manchester, Manchester, United Kingdom
18. **Comparison of the effects of a high-fat diet (HFD) in male and female Alzheimer's disease mice** PhD day Alzheimer's Research UK Conference 2014, Oxford, United

Kingdom

- 19. The effect of high fat diet in triple transgenic mouse model of Alzheimer's disease** ` PhD Conference 2013 University of Manchester, Manchester, United Kingdom
- 20. The role of the cerebrovasculature in the detrimental effect of a high-fat diet on Alzheimer's disease** ` Alzheimer's Research Trust Manchester Meeting, Manchester, United Kingdom
- 21. Effects of a high-fat diet on the cerebrovasculature and neuroinflammation in an experimental model of Alzheimer's disease** ` Alzheimer's Research Trust Manchester Meeting, Manchester, United Kingdom
- 22. Ghrelin and leptin signal pathways in the brain: towards novel disease-modifying drugs for Alzheimer's disease** ` Angelini University Award 09/10, Lisbon, Portugal
- 23. Neuroprotection by leptin and ghrelin against amyloid-beta toxicity in hippocampal neurons. Relevance for therapeutic intervention in Alzheimer's disease** ` 24^a Reunião do Grupo de Estudos de Envelhecimento Cerebral e Demência, Tomar, Portugal

SCIENCE COMMUNICATION ACTIVITIES

2025: Interviewed by SpinalCast from Morton Cure Paralysis Fund

2023 : Interviewed by Rádio em Movimento as a young female Neuroscientist in Portugal

2021 - 2022: Member of “Fala-me Neuro” with the support of Sociedade Portuguesa de Neurociências (SPN)

2021: Invited for “Dia do Cientista 2021” at Escola N^o1 Rio De Mouro, Sintra **2020:** Invited speaker for "Dia do Cientista 2020" in Pavilhão do Conhecimento - Ciência Viva

2020: Part of the members of the virtual round table for "Noite dos Investigadores 2020" organized by Instituto de Medicina Molecular

2019: Part of the Science Club iMM to promote science and scientific activities in the Pediatric Unit at Hospital Santa Maria Lisboa

2017: Interviewed by Diário de Notícias about the role of women in Science (<https://www.dn.pt/sociedade/interior/ser-mulher-cientista-ou-chefe-cada-uma-e-como-e-5748450.html>)

2016 - 2017: Member of the Postdoctoral Association of Instituto de Medicina Molecular (iMM), organised several postdoctoral activities such as Postdoc Day at iMM, Postdoc Retreat and a Gender Balance in Science Debate to promote awareness of women in science with several important scientists worldwide such as the 2013 Laureate UNESCO-L’Oreal “For Women in Science” Reiko Kuroda and the EMBO Director Maria Leptin (<https://justnews.pt/noticias/instituto-de-medicina-molecular-acolhe-debate-sobre-a-igualdade-de-generos-na-ciencia#.XWUs5OhKg2w>)

MENTORING/TUTORING

2025 – present: World Women in Neuroscience Mentoring Program, Student: Maria Binu Jacob

ASSOCIATION MEMBERSHIP

ALBA Network (ismartins)

World Women in Neuroscience

SPN (Sociedade Portuguesa de Neurociências)

FENS

EUROSPINE

ISRB (International Society for Regenerative Biology)

