MINISTERIO DE CIENCIA E INNOVACIÓN

CURRICULUM VITAE (maximum of 4 pages)

AGENCIA ESTATAL DE INVESTIGACIÓN

Part A. PERSONAL INFORMATION

CV date	06/10/2024

First and Family name	Marcos Martín Rincón		
Social Security, Passport, ID number	12339147-S	Age	35
Researcher codes	Open Researcher and Contributor ID (ORCID)	0000-0002-3685-2331	
	SCOPUS Author ID		
	WoS Researcher ID	I-6495-2015	

A.1. Current position

Name of University/Institution	University of Las Palmas de Gran Canaria			
Department	Physical Education and IUIBS			
Address and Country	Human Performance, Physical Activity & Health Group. Department of Physical Education, University of Las Palmas de Gran Canaria. Campus Universitario de Tafira, 35017. Las Palmas de Gran Canaria, Las Palmas. Spain,			
Phone number	+34 680760471	E-mail	marcos.martinrincon@gmail.com	
Current position	Associate Professor	From	2023	
Key words	Nutrition, Metabolism, Skeletal Muscle Signalling and Human Health			

A.2. Education

PhD, Licensed, Graduate	University	Year
Associate Professor	University of Las Palmas de Gran Canaria	2023-currently
Posdoctoral Researcher	University of Las Palmas de Gran Canaria	2019-2023
PhD in Biomedical Research	University of Las Palmas de Gran Canaria	2018
MSc in Sport and Exercise Science & Medicine	University of Glasgow	2013
BSc in Sport and Physical Activity Sciences	University of Leon	2011

A.3. General indicators of quality of scientific production

Total Articles in Publication List: 43. Sum of Times Cited: 5449 (5310 without self-citations). Average Citations per Article: 121.09. h-index: 18. Web of Science.

Part B. RELEVANT MERITS

CV Summary

Currently, at 35 years of age, I am an Associate Professor and Vice Dean of Quality and Equality at the Faculty of Physical Activity and Sport Sciences at the University of Las Palmas de Gran Canaria (ULPGC). I hold an International Ph.D. in Biomedical Research, awarded with the highest distinction (Summa Cum Laude) and the Extraordinary Doctorate Prize from ULPGC in Health Sciences. In 2019, I received the Young Researcher Recognition Award from ULPGC. My scientific output includes 43 publications in JCR-indexed journals, 33 of which are ranked in Q1, 7 in Q2, 1 in Q3, and 2 in Q4, mainly in the fields of Physiology, Biochemistry & Molecular Biology, and Endocrinology & Metabolism. I have contributed to 2 book chapters, and my H-index is 18, with 5449 citations (5310 excluding self-citations). Seven articles as first author and six as senior author. Additionally, I earned my first research evaluation period (sexenio) from ANECA at the age of 32 (2014-2020). I regularly teach courses in **Exercise Physiology, Nutrition, and Physical Activity and Health** in the undergraduate programs of the Faculties of Physical Therapy and Sport Sciences. Additionally, I am a faculty member in various postgraduate courses, such as the Master's Degree in Therapeutic Education in Diabetes and the Expert Course in Therapeutic Exercise, Functional Rehabilitation, and Health as well as in the Biomedical Research doctoral program at ULPGC

My research primarily focuses on **understanding the physiological and molecular mechanisms that limit exercise performance**, particularly during **high-intensity and exhaustive activities**, with a specific emphasis on **sex differences**. I explore how factors such as muscle oxygenation, blood flow, and fatigue interact to determine sprint and endurance capacity in men and women. My work delves into the predictors of maximal performance and the physiological responses during exercise to exhaustion, aiming to uncover strategies to enhance performance, while taking into account the distinct responses based on sex. Notable studies include investigating the influence of muscle ischemia-reperfusion, the role of macroautophagy and chaperone-mediated autophagy in muscle recovery, and the modulation of muscle signaling pathways such as NF-κB and Nrf2/Keap1 in response to exercise stress. I have also examined how repeated supramaximal exercise impacts muscle function and recovery, with a particular focus on how these responses may differ between sexes, providing insights into the factors that influence fatigue resistance. Additionally, my research has explored how acute and chronic exercise interventions can optimize physical performance, focusing on the interplay between blood flow, muscle oxygenation, and metabolic adaptations to improve sprint capacity and overall endurance, while highlighting sex-specific adaptations.

I have completed five research stays at prestigious international centers, allowing me to learn from top-level research teams in human physiology, under the supervision of world-renowned professors such as Prof. Jostein Hallen, Prof. Robert Boushel, Prof. Yannis Pitsiladis, and Prof. Alejandro Lucia. These stays include 12 months at the **Human Physiology Laboratory** at the University of **Glasgow** (UK), two stays (3 and 1 months) at the **Norwegian School of Sport Sciences** (Oslo, Norway), the second-ranked faculty in Sport Sciences worldwide, and 1 month at the **School of Kinesiology** (Vancouver, Canada). Nationally, I spent 12 months working with the "i+12" Research Group at the **12 de Octubre Hospital** and the European University of Madrid, collaborating on studies with patients with severe pulmonary hypertension.

I have participated in 21 research and innovation projects, 12 of which were competitive, funded by entities such as **MINECO**, **MICIU**, **ISCIII**, **GOBC**, and various universities (**ULPGC**, **UEM**, **UAH**). I served as Co-Principal Investigator (Co-PI) on one of these projects. I have also been involved in 7 industry transfer projects, which include the creation of **Zynamite®** by **Nektium Pharma**, a nutritional supplement now commercially available worldwide (see more here: https://n9.cl/ajwxz), and the development of a new experimental device, **TRAINIRS** (EP23383021.5, patent pending), designed to study the impact of post-exercise ischemia and blood flow restriction.

I have presented over **50 abstracts** at international conferences, earning three **young investigator awards** at prestigious events like the ECSS and ACSM, being the only Spanish researcher awarded at both. I was the lead author of a

second prize-winning project for the ULPGC Telefónica Chair Award and co-authored two other winning projects. I am on the **editorial board o**f the **Scandinavian Journal of Medicine and Science in Sports** (JCR Q1) and a **Fellow of the European College of Sport Science**, reviewing for various Q1 journals. Additionally, I have been invited to webinars by journals like The Journal of Physiology and have delivered national and international lectures, including at the 45th ESPEN Congress on strategies to prevent muscle loss during energy restriction. I am a member of two research networks funded by the CSD: the Hypoxsport Network (2019-2022) and the In Motu Salus Network (since 2023).

Supervision of one doctoral thesis and currently co-supervising two doctoral theses funded by **FPI** and **FPU** contracts from the Ministry of Science and Innovation. I have also supervised 5 Master's Theses from the **Università degli Studi di Milano** (Milan), **Universidad Pablo de Olavide** (Seville), and 5 Bachelor's Theses at **ULPGC**.

B.1. Publications *(most relevant to the topic of interest)*

1. **Research Article**. Martinez-Canton, M.; Galvan-Alvarez, V.; Martin-Rincon, M.; Calbet, J.A.L.; Gallego-Selles, A. (3/5). 2024. Unlocking peak performance: The role of Nrf2 in enhancing exercise outcomes and training adaptation in humans. *Free Radical Biology and Medicine*. Elsevier Science Inc. 224, pp.168-181. ISSN 0891-5849, ISSN 1873-4596. WOS (0). https://doi.org/10.1016/j.freeradbiomed.2024.08.011
2. **Research Article**. Leahy, M.G.; Thompson, K.M.A.; Skattebo, O.; et al; Calbet, J.A.L. (5/11). 2024. Assessing leg blood flow and cardiac output during running using thermodilution. *Scandinavian Journal of Medicine & Science in Sports*. Wiley. 34-8. ISSN 0905-7188, ISSN 1600-0838. WOS (0). https://doi.org/10.1111/sms.14705
3. **Research Article**. Martinez-Canton, M.; Galvan-Alvarez, V.; Gallego-Selles, A.; Gelabert-Rebato, M.; Garcia-Gonzalez, E.; Gonzalez-Henriquez, J.J.; Martin-Rincon, M.; Calbet, J.A.L. (7/8). 2024. Activation of macroautophagy and chaperone-mediated autophagy in human skeletal muscle by high-intensity exercise in normoxia and hypoxia and after recovery with or without post-exercise ischemia. *Free Radical Biology and Medicine*. Elsevier Science Inc. 222, pp.607-624. ISSN 0891-5849, ISSN 1873-4596. WOS (1). https://doi.org/10.1016/j.freeradbiomed.2024.07.012
4. **Research Article**. Galvan-Alvarez, V.; Gallego-Selles, A.; Martinez-Canton, M.; Martin-Rincon, M.; Calbet, J.A.L. (6/7). 2023. Physiological and molecular predictors of cycling sprint performance. Scandinavian Journal of Medicine & Science in Sports. 28-3, pp.772-781. https://doi.org/10.1111/sms.14545
5. **Research Article.** Martin-Rincon, M. (first author) & Calbet, J.A.L. (1/2). 2020. Progress update and challenge in VO2max testing and interpretation. Frontiers in Physiology.11-1070. https://doi.org/10.3389/fphys.2020.01070
6. **Research Article.** Martin-Rincon, M.; Gelabert-Rebato; Perez-Valera, M.; et al; Calbet, J.A.L. (1/9). 2021. Functional reserve and sex differences during exercise to exhaustion revealed by post-exercise ischaemia and repeated supramaximal exercise. The Journal of Physiology. John Wiley & Sons. https://doi.org/10.1113/JP281293
7. **Research Article**. Martin-Rincon, M.; Gelabert-Rebato, M.; Galvan-Alvarez, V.; et al; Calbet. J.A.L. (1/14). 2020. Supplementation with a mango leaf extract (Zynamite®) in combination with quercetin attenuates muscle damage and pain and accelerates recovery after strenous damaging exercise. Nutrients. 12-3, pp.614. https://doi.org/10.3390/nu12030614
8. **Research Article**. Calbet, J.A.L.; Martin-Rodriguez, S.; Martin-Rincon, M.; Morales-Alamo, D. (3/4). 2020. An integrative approach to the regulation of mitochondrial respiration during exercise: Focus on high-intensity exercise. Redox Biology. 101478. https://doi.org/10.1016/j.redox.2020.101478
9. **Research Article**. Martin-Rincon, M. (first author); Perez-Lopez, A.; Morales-Alamo, D.; et al; Calbet, J.A.L. (1/12). 2019. Exercise mitigates the loss of muscle mass by attenuating the activation of autophagy during severe energy deficit. Nutrients. 11(11)-2824. https://doi.org/10.3390/nu11112824
10. **Research Article**. Miriam Gelabert-Rebato; Marcos Martin-Rincon; Victor Galvan-Alvarez; et al; Jose A. L. Calbet. (2/11). 2019. A single dose of the mango leaf extract Zynamite® in combination with quercetin enhances peak power output during repeated sprint exercise in men and women. Nutrients. 11(1)-2592. https://doi.org/10.3390/nu11112592
11. **Research Article**. Martin-Rincon, M. (first author); González-Henríquez, J.; Losa-Reyna, J.; et al; Calbet, J. A. L. (1/12). 2019. Impact of data averaging strategies on VO2max assessment: mathematical modelling and reliability. Scandinavian journal of medicine & science in sports. https://doi.org/10.1111/sms.13495
12. **Research Article**. Martin-Rincon, M. (first author); Perez-Suarez, I.; Pérez-López, A.; Ponce-González, J. G.; Morales-Álamo, D.; de Pablos-Velasco, P.; Holmberg, H. C.; Calbet, J. A. L. (1/8). 2018. Protein synthesis signaling in skeletal muscle is refractory to whey protein ingestion during a severe energy deficit evoked by prolonged exercise and caloric restriction. International Journal of Obesity. 43-4, pp.872-882. https://doi.org/10.1038/s41366-018-0174-2
13. **Research Article**. Morales-Alamo, D.; Losa-Reyna, J.; Torres-Peralta, R.; et al; Martin-Rincon, M.; Calbet, J.A.L. (4/9). 2015. What limits performance during whole-body incremental exercise to exhaustion in humans? The Journal of Physiology. 593-20, pp.4631-4648. https://doi.org/10.1113/JP270487
14. **Research Article**. Martin-Rincon, M (first author).; Morales-Alamo, D.; Calbet, J.A.L. (1/3). 2017. Exercise-mediated modulation of autophagy in skeletal muscle. Scandinavian Journal of Medicine & Science in Sports. 28-3, pp.772-781. https://doi.org/10.1111/sms.12945

B.2. Research projects *(most relevant to the current topic)*

1. PID2021-125354OB-C21, Physiological function and regulation of ACE2 protein in human skeletal muscle and oral mucosa: influence of exercise, sex, aging, and vitamin D (ACEVID). Ministry of Science, Innovation, and Universities. José A. López Calbet. (University Institute of Biomedical and Health Research). 01/10/2022-30/09/2026. 193.600 €.
2. EXP_75097, Development of a new muscle training model based on post-ischemic potentiation and its application systems and instruments (TRAINIRS). Spanish Higher Council for Sports. José Antonio López Calbet. University of Las Palmas de Gran Canaria. 28/03/2023-30/11/2023. 156.000 €.
3. DEP2017-86409-C2-1-P, Identification and integration of new molecular, physiological, and bioelectrical factors determining sprint exercise performance. Ministry of Science, Innovation, and Universities. Joaquín Sanchís Moysi (University Institute of Biomedical and Health Research). 01/01/2018-31/12/2021. 181.500 €.
4. DEP2015-71171-R, Development and molecular characterization of a new remote preconditioning model. Ministry of Economy and Competitiveness. Cecilia Dorado García (University Institute of Biomedical and Health Research). 01/01/2016-31/12/2019. 72.600 €.
5. 015/04RM, Influence of cerebral blood flow on sports performance. David Morales Álamo. University of Las Palmas de Gran Canaria. 16/11/2015-21/05/2016. 6.000 €.