CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	María		
Family name	Domínguez Castellano		
Gender (*)	Female	Birth date (dd/mm/yyyy)	04/09/1965
Social Security, Passport, ID number	(NUSS) 031035215472	PAE434957	(ID)28879496Y
e-mail	m.dominguez@umh.es	URL Web https://in.umh-csic.es/es/author/m-dominguezumh-es/	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-3329-7862	

(*) Mandatory

A.1. Current position

Positions	Full Professor of Spanish National Research Council (CSIC) Director Scientific Programme (SP6) "Individuality and Ageing"		
Initial dates	19/07/2008 1/01/2022		
Institution	Spanish National Research Council (CSIC)		
Department/Center	Developmental Neurobiology Unit	Instituto de Neurociencias	
Country	Spain	Phone	965919390
Key words	Growth, Cancer, Drug Discovery, Resilience, Bilateral Symmetry		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
From 06/2016-10/2020	Director of the Neurobiology of Development Unit/Institute of Neurosciences, Alicante/Spain
From 2002-2005	Deputy Director/Institute of Neurosciences, Alicante /Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Biology	Department of Developmental Biology, CBM-SO, UAM, Madrid, Spain	1993

(Include all the necessary rows)

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

Dr Dominguez is a leading expert in cancer and organismal growth in the field of Drosophila melanogaster and a Full Professor of the Spanish Research Council. She and her team have contributed significantly to our understanding of how perfect bilateral symmetry (Science 2012) is attained and how the brain governs body size to adaptively remodel organs (ELife 2015, Science 2015, Cell Stress 2019, The EMBO J 2019, Cell Reports 2021, BioRxiv 2022). Her research also focuses on cancer research using the fruit fly Drosophila melanogaster (Cell Reports 2018, 2019, Cells 2021), as well as developing an inexpensive and highly effective drug screening platform using fruit flies to accelerate drug repurposing and translate basic science to the clinics. Additionally, she is interested in the genetic basis of resilience to understand how some individuals are better at fighting and reversing diseases like cancer and living longer and healthier lives. During this grant, the team achieved exciting results in this area.

As the Director of a newly created scientific program at the IN, Dr Dominguez leads a thriving workforce focused on driving disruptive projects, mentoring, and supporting flexibility for young researchers to advance their careers and balance family and work life. During her grant period, the team has also focused on transforming knowledge into impact, applying clinical studies to test the benefits of anti-asthmatic medication in adult T-ALL (EU-PHlies) and contacting stakeholders (a CRO is interested in advancing preclinical studies for drug repurposing). Dominguez and her team also invested time and efforts to drive innovation by developing a high-resolution automated tracking system (flyGear, patent: PCT/ES2020/070670/) for measuring insect development time and other vital milestones. The team has been selected for a two-year acceleration and mentoring program from the Foundation General CSIC, COMTE-Innova 2022, to scale and roll out the marketable flyGear and add new applications using AI and machine learning and secured funds from IN.Pulse-UCIE (Innovation Agency at the IN) and a MICCIN Proof-of-Concept 2022.

Dr Dominguez has mentored many students and postdocs, many of whom have gone on to independent careers in academia and industry. She is an expert evaluator for various national and international agencies and serves on editorial boards as an invited editor. Dominguez is also a member of various organizations such as the European Drosophila Society, the Life and Cancer Connection HUBS at CSIC, the Patronage Committee of the Generalitat Valenciana, the SOCE boards and an evaluator for the MSCA4Ukraine fellowship program and external evaluator for national and international agencies such as HFSP, Alexander von-Humboldt, and ICREA. She has also co-organized an international course on obesity and puberty at the International University of Baeza in Spain and will organize the next European Drosophila Research Conference in 2025. Dominguez was also a leader in a Chapter on Epigenetics in the 2020 White Paper from the Spanish National Research Council (CSIC). She contributed her expertise and experience, ensuring its accuracy, relevance, and impact of other contributors of the Chapter. This important document lays out the current state of the field and highlights important areas for future research and development.

Part C. LIST OF MOST RELEVANT MERITS *(sorted by typology)*

C.1. Publications (§ corresponding author)

1. Vallejo DM, Saez-Carrión E, García-López L, Santoro R, **Dominguez M§**. Neuroendocrine control of catch-up growth in *Drosophila*. MS ID#: BIORXIV/2022/522288. (submitted)

2. García-López, L§., Adrados, I§., Ferres-Marco, D., & **Dominguez, M**. (2021). A Blueprint for Cancer-Related Inflammation and Host Innate Immunity. **Cells**, Sep 17;10(11), 3211. https://doi.org/10.3390/cells10113211

3. Juarez-Carreño S, Vallejo DM, Carranza-Valencia J, ….**Dominguez M§**, Morante J§. 2021. Body-fat sensor triggers ribosome maturation in the steroidogenic gland to initiate sexual maturation in Drosophila. Cell Rep Oct 12;37(2):109830. doi: 10.1016/j.celrep.2021.109830. 14/13

4. Gutierrez-Perez I, Jordan-Rowley J, Lyu X, ….Corces VG§, **Dominguez M§**. 2019. Ecdysone-Induced 3D Chromatin Reorganization Involves Active Enhancers Bound by Pipsqueak and Polycomb. **Cell Rep**. 28(10): Sep 3, pp2715-2727.e5. https://doi.org/10.1016/j.celrep.2019.07.096 11/11

5. Reiff T, Antonello ZA, Ballesta-Illán E, Mira L, Sala S., Navarro M, Martinez LM, **Dominguez M§**. 2019. Notch and EGFR regulate apoptosis i progenitor cells to ensure gut homeostasis in Drosophila. **The EMBO J**. e101346. Sep 30 (Online). https://doi.org/10.15252/embj.2018101346

6. Juarez-Carreño S, Morante J, **Dominguez M§**. 2018. The role of Dilp8-Lgr3 systemic signalling and local factors in the robustness of body symmetry and size. **Cell Stress**. 2(12):340 – 361. doi: 10.15698/cst2018.12.167.

7. Villegas SN§, Gombos R, García-López L, …. **Dominguez M§**. 2018. PI3K/Akt Cooperates with Oncogenic Notch by Inducing Nitric Oxide-Dependent Inflammation. **Cell Rep**. 22(10):2541-2549. doi: 10.1016/j.celrep.2018.02.049. 10/10

8. Vallejo DM#, Juarez-Carreño S#, Bolivar J, Morante J§, **Dominguez M**§. 2015. A brain circuit that synchronizes growth and maturation revealed through Dilp8 binding to Lgr3. **Science** 350(6262):aac6767. Selected by F1000 (http://f1000.com/prime/725824093)

9. Reiff T, Jacobson J, Cognigni P, Antonello ZA, ….. **Dominguez M§**, Miguel-Aliaga I§. 2015. Endocrine remodelling of the adult intestine sustains reproduction in *Drosophila.* **eLife** 4:e06930. Doi: 10.7554/eLife.06930. Cover. Selected by F1000 (http://f1000.com/prime/725678897) 9/8

10. Garelli A#, Gontijo A#, Miguela V, Caparros E, **Dominguez M§**. 2012**. I**maginal discs secrete insulin-like peptide 8 to mediate plasticity of growth and maturation time. **Science** 336(6081): 579-582. Selected by F1000 (http://f1000.com/prime/715847806).

11. Ferres-Marco D, Gutierrez I, Vallejo DM, Bolivar J, Gutierrez-Aviñó FJ, **Dominguez M§**. Epigenetic silencers and Notch collaborate to promote malignant tumours by Rb silencing. **Nature.** 2006 Jan 26;439(7075):430-436. PMID: 16437107 Selected by F1000 https://f1000.com/prime/1030489

C.2. Congress, invited conferences, and organization

Invited speaker, chairwoman, and/or organizer

1. Obesity and the growth spurts. Speaker and **Organizer** of the Workshop UNIA 2022: Fat sensing and the brain control of puberty, Baeza. Oct 24 –26, 2022.
2. Amino acid-restriction in cancer: from friend to foe. 3rd Nordic Meeting on Developmental Biology, Stem Cells and Regeneration. Copenhagen, Denmark. Oct 5 – 7, 2022.
3. Resilience. 2nd European Drosophila Board Meeting. Paris, France. Sept 26 – 27, 2022.
4. The very hungry Caterpillar. EMBO WORKSHOP-The Molecular and Developmental Biology of Drosophila. Crete, Greece. June 19-25, 2022.
5. Scientific Program 6. 2nd Annual IN Retreat. Alicante May 16-17, 2022.
6. Molecular bases of growth control and cancer in Drosophila. 14th IN Progress Report Workshop. San Juan de Alicante. Oct 14, 2021.
7. Body Symmetry and Size: What are the costs of perfection and developmental homeostasis?". Champalimaud Research Symposium. Lisbon. Oct 8-10, 2019.
8. Delta-Notch signalling in the adult intestine: A deathly dialogue keeps cell numbers in check. Gordon Research Conference. Lewiston, ME, US. July 22-27, 2018.
9. Antagonistic cooperation between Notch and Hedgehog signalling pathways in cancer. Invited Speaker and **Chairman.** 23rd European Drosophila Research Conference 2013. Barcelona. Oct 16-19, 2013.
10. Symmetry and the control of body size by Drosophila ILP8. Conference Jacques Monod 2012. Roscoff (Brittany), France. April 25-29, 2012.
11. Outreach activity. Girls4STEM Professional. May 13, 2021.
12. Women and Science at the XXXVI National Congress of Medical Studies, XIV International Edition. Alicante. Oct 26, 2018

Plenary talks

1. Academic Conference Institute of Neurobiology in Queretaro, Mexico. "Body Symmetry, Why Is It Important and How to Achieve It". Sept 20, 2021.
2. A body fat sensor in the prothoracic gland controls insect reproductive maturation". Opening talk. Institute de Biologie Valrose, Nice, France. October 31, 2018.
3. Addressing the complexity of Notch in cancer: When less is more. 56th Annual Drosophila Research Conference. Chicago, US. March 4-8, 2015.

4. A genetic screen in the Drosophila eye unveils a link between Notch and PI3K-Akt pathways. 20th European Drosophila Research Conference. Vienna, Austria. September 12-14, 2007.

C.3. Research projects (2006-2023)

Funding grants acquired in 2006–2022 (16) amount a total of 7,500 million euros.

1. AVI Projects 2023 INNVA1/2023/25 "FrAIlty. Valorization of an automated AI-based platform to accelerate frailty marker and drug discovery" . € 500.000. Coordinator: **MD** (01/12/2023 – 31/12/2025) CSIC
2. MICCIN Projects Proof of Concept 2022 ref: PDC2022-133387-I00. From the flyGear prototype to a marketing product and a market analysis. € 149.500. PI: **MD** (01/12/2022 – 30/11/2024) CSIC
3. FGCSIC Programme COMTE Innovation 2022. "flyGear -A patented automated animal counting solution R. Santoro, S. Greco, and **MD** (01/07/2022 – 30/06/2024)
4. FGCSIC ComFuturo Third Edition. "Harnessing new programmed cell death processes for safer cancer therapy. Dr Mary L. Uribe Rios. PI. **MD** (01/03/2023-28/02/2025)
5. IN.Pulse of the Valencian Agency for Innovation of the Generalitat Valenciana-AVI. "Artificial intelligence (AI) and automation to accelerate the development of geroprotective agents". PI. **MD** (CSIC) (2022-2023) €30.000
6. Maria Zambrano UMH ref: 2022/PER/00001 "Mood and Cancer and the Cancer-related fatigue: From mechanism to interventions" Dr Mario Aguilar. PI. **MD**. € 96.000 (01/03/2022 – 28/03/2024)
7. Crowdfunding Precipita. "CancerFree" Dr I Adrados. PI **MD** (CSIC) €30.000 (01/2022)
8. AECC Scientific Foundation grant (CICPF116001DOMÍ) "Developing Safe and Effective Strategies for Notch-PI3K/Akt High-Risk Childhood Cancers" PI. **MD** (01/12/2017–31/12/2021).
9. Three Excellence Grants from GV. Current: PROMETEO/2021/027 "Bridging the gap between early-life disease-induced inflammation and health outcomes and frailty". PI. **MD** (01/11/2021-2024)
10. National grants: EIN2020-112246 (2020-2022) and PID2019-106002RB-I00 (2020-2023), "Genetic **R**obustn**e**ss, **Syst**emic and Local Effectors, and their Implications in Cancer (RESYST)" PI. **MD** (CSIC) From 01/06/2021 to 30/06/2023
11. Botín Foundation Award. "Mechanisms of growth control and cancer". PI. **MD** (CSIC) From 11/11/2008-2013.
12. European Union grant FP7-HEALTH-F2-2008-201666. "Cancer Pathways" Coordinator: M. Boutros (DKFZ, Germany). (2008–2011)

MD applied for a grant called "EUPHiles" for the 2022 HORIZON-RIA call and received the second-highest score (12.5, cut-off threshold: 10. MD is a lead researcher and board member (1 of 10) on the 'Severo Ochoa Excellence Awards' (SEV-2013-0317, SEV-2017-0723) from 2018 to 2022 and CEX2021-001165-S from 2023 to 2026 at the IN.

C.4. Technological or transfer merits

1. Automated High Resolution Pupal Counting Device. International Patent PCT/ES2020/070670/ (published May, 2023). Inventors: R. Santoro, V. Rodriguez, M. Dominguez.
2. Modulation of the EGFR receptor in the regulation of body weight. Patent. P201930530/ref: ES1641.1454. Inventors: J. Morante, M. Dominguez.

MD has participated in the Entrepreneur Acceleration Program from CSIC-Dinamiza (6 months from 2021-2022). The flyGear technology project was selected for the FGCSIC COMTE-Innova 2022 two-years mentoring program (2022-2004). A budget was secured for the flyGear project from the Valencian Innovation Agency and MCINN PoC2022 for the next two years.