



CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date

3/12/2021

First name	TATIANA		
Family name	GARCIA MUSE		
Gender (*)	WOMAN	Birth date	
ID number			
e-mail			
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-3195-2261		

(*) Mandatory

A.1. Current position

Position	Profesor Titular (Associate Professor)		
Initial date	3/11/2021		
Institution	Universidad de Sevilla		
Department/Center	Dpto.Genética-CABIMER		
Country	Spain	Teleph. number	
Key words	Meiosis, DNA damage response, C.elegans, Genomic instability		

A.2. Previous positions (research activity interruptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
19/06/2011- 18/05/2013	Postdoc de Excelencia/CABIMER/Spain
19/05/2013- 13/07/2015	Senior Postdoc /CABIMER/Spain
14/07/2015- 17/12/2020	Profesor Ayudante Doctor/ Universidad de Sevilla-CABIMER/ Spain
18/12/2020- 02/11/2021	Profesor Contratado Doctor/ Universidad de Sevilla-CABIMER/ Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Lcda. Biología	Universidad de Sevilla	1998
Dr. Biología Molecular	Universidad Autónoma de Madrid	2003

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

My scientific career has spanned working in three different laboratories and since 2019 in my own research group.

PhD (1998-2003). Upon graduating in Biology at the University of Sevilla in 1998, I joined Dr. Pérez-Martín laboratory at Centro Nacional de Biotecnología, Madrid. There I successfully defended my Thesis in 2003. I was the first person to join Dr. Pérez-Martín laboratory, hence we had to establish all the basic know-how from the beginning. In my years at CNB we were able to gain some knowledge in the cell cycle of the pathogen fungus *Ustilago maydis*. This period led to three first author publications in relevant journals. This work highlighted the relevance of cell cycle regulation during the pathogenesis and helped to define for the first time the connections between cell cycle and the pathogenesis program induction of *U. maydis*.

Postdoc: 2003-2008. Postdoc at Clare Hall Institute, CRUK London (UK), in the group of Dr. Boulton. To develop my expertise in other areas I was also interested in moving to an



alternative model system. For these reason I chose to do a postdoc in Dr. Boulton group that uses *Caenorhabditis elegans* as a model system to understand the DNA damage response. This period led to two research publications as first author, and a contribution into a third paper as well as one review. All contributing to the understanding of DNA damage response, being the more relevant my first author EMBO J. in which we described the role of ATR in DSB repair changing the accepted dogma.

Senior Postdoc: 2008-2018. In February 2008, with a JAE-doc contract, I joined Andres Aguilera's group, at Molecular Biology, CABIMER (Sevilla), to continue my research in DNA Damage Response and the mechanisms that lead to genomic instability. I have been in his laboratory ever since as a senior postdoc setting up the conditions to use *C. elegans*. My duties included the co-supervision of PhD students, M. Castellano-Pozo and M. San Martin, whose thesis were successfully defended in December 2013 and July 2019, respectively. M Castellano-Pozo's thesis led to three research publications; he then did a successful postdoc in UK, and now is back in Sapin as recipient of a MarieCurie fellowship. M SanMartin's thesis has led to a research publication in Nat. Comm. and another one in preparation; she is performing a postdoc in Holland. This entire works have contributed to the understanding of genomic instability associated to transcription using yeast and *C. elegans* as model organisms, with key discoveries to the field as the connection with chromatin and the importance of cell cycle. Additionally, I had taken part in five reviews all for relevant journals and with favourable reception on the field. Furthermore, in parallel I continued my own project uncovering the *in vivo* relevance of a DNA damage-dependent phosphorylation of SYP-11 (central element of the synaptonemal complex) identified by peptide array at the end of my stay of Boulton laboratory, published in Cell Reports. Importantly this work validated the data I obtained in my peptide array screening that is the base of my research to understand DNA damage during meiosis.

Emerging PI position at Cabimer: since 2019. After obtaining a project in the 2018 national call I had the opportunity to start my own research group, first joined by a Postdoc, and more recently formed by an US-Postdoc, an Empleo Juvenil and an internship student. We are addressing at the molecular level the biological relevance of the DNA damage-dependent phosphorylations at meiotic proteins to ensure genome stability. In this period we have contributed to another two publications, in both I am corresponding author. Published in MiMB, a describing the methods to detect DSB in *C. elegans*, and in J. Cell Sci. from the initial work of a previous Erasmus master student.

During my entire scientific career I have regularly presented my work at International Meetings. I have been selected for oral presentations at two EMBO conferences. In this regard, I also have been a member of the 4th Spanish Worm Meeting organization committee. In addition, I have regularly been invited to evaluate scientific articles in international journals as well as research projects in national and international calls (by the ANEP, World Wide Cancer Research and Wellcome Trust).

As a member of the Genetic Department at the Universidad de Sevilla since 2011, I had the opportunity be involved in teaching activities. I have lectured on different subjects both as part of the Biology Degree, as well as in the Master Genética Molecular y Biotecnología. In addition I have tutored 12 "Bachelor Final Projects" (TFG), and been a member of the evaluation committee for both Bachelor and Master Final Projects in two occasions each.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

Zheleva A, Camino LP, Fernández-Fernández N, García-Rubio M, Askjaer P, García-Muse T*, Aguilera A. 2021. THSC/TREX-2 deficiency causes replication stress and genome instability in *Caenorhabditis elegans*. *J Cell Sci.* 134(20):jcs258435. (*corresponding) IF(SJR): 2.3; Q1

San Martin-Alonso M, Soler-Oliva ME, García-Rubio M, García-Muse T*, Aguilera A. 2021. Harmful R-loops are prevented via different cell cycle-specific mechanisms. *Nat Commun.* 12(1):4451. (*co-corresponding) IF(SJR): 5.5; Q1

García-Muse T. 2020. Detection of DSBs in *C. elegans* Meiosis. *Methods Mol Biol.* 153:287-293.



- García-Muse T, Aguilera A. 2019. R Loops: From Physiological to Pathological Roles. *Cell*. 179:604-618. IF(JRC): 36.2; Q1
- García-Muse T*, Galindo-Díaz U, García-Rubio M, Martín JS, Polanowska J, O'Reilly N, Aguilera A, & Boulton SJ. 2019. A meiotic checkpoint alters repair partner bias to permit inter-sister repair of persistent DSB. *Cell Rep*. 15:775-787. (*co-corresponding) IF(JRC): 8.03; Q1
- García-Muse T, Aguilera A. 2016. Transcription-replication conflicts: how they occur and how they are resolved. *Nat Rev Mol Cell Biol*. 17(9):553-63. IF(JRC): 38.6; Q1
- Gaillard H, García-Muse T, Aguilera A. 2015. Replication stress and cancer. *Nat Rev Cancer*. 15(5):276-89. IF(JRC): 37.9; Q1
- Castellano-Pozo M., Santos-Pereira, JM., Rondón, AG., Barroso, S., Andújar, E., Pérez-Alegre M., García-Muse T. and Aguilera A. 2013. R-loops are linked to histone H3 Ser10 phosphorylation and chromatin condensation *Mol. Cell* 52: 583-590. IF(JRC): 14.2; Q1
- Aguilera A. and García-Muse T. 2013. Causes of genome stability. *Annu. Rev. Genet*. 47: 1-32. IF(JRC): 17.4; Q1
- Castellano-Pozo M., García-Muse T.* And Aguilera A. 2012. The *Caenorhabditis elegans* THO complex is required for the mitotic cell cycle and development. *PLoS One*. 7(12): e52447. (*corresponding). IF(JRC): 4.1; Q1
- Castellano-Pozo M., García-Muse T.* and Aguilera A.* 2012. R-loops cause replication impairment and genome instability during meiosis *EMBO Rep*. 13: 923-9. (*co-corresponding). IF(JRC): 7.3; Q1
- Aguilera A. and García-Muse T. 2012. R-loops: from transcription by-products to threats to genome stability. *Mol. Cell* 46: 115-24. IF(JRC): 14.2; Q1

C.2. Congress

Poster.

- T. García-Muse, U. Galindo y A. Aguilera (2015) DNA Damage Phosphorylation within the Synaptonemal Complex. *EMBO Meiosis*. Oxford, UK

Oral presentations

- M. Chacón-Rodríguez M, L. P. Camino, T. García-Muse, (2021) *C. elegans* Bloom a target of the DDR. Spanish Meiosis Meeting 2021. Online.
- T. García-Muse, U. Galindo, S. J. Boulton and A. Aguilera (2019) DNA damage Phosphorylation during meiosis. Spanish Meiosis Meeting 2019. El Escorial. Spain
- T. García-Muse, U. Galindo, S. J. Boulton and A. Aguilera (2017) DNA damage Phosphorylation within the synaptonemal complex. Red Española de Meiosis II. Miraflores de la Sierra. Spain
- A. Zheleva, T. García-Muse and A. Aguilera (2017) *C. elegans* THSC complex deficiency leads to replication stress and genome instability. 6th Spanish Worm Meeting. Valencia. Spain
- T. García-Muse, U. Galindo, S. J. Boulton and A. Aguilera (2015) DNA Damage Dependent Phosphorylation during Meiosis. 5th Spanish Worm Meeting. Salamanca. Spain
- T. García-Muse, U. Galindo, S. J. Boulton and A. Aguilera (2014) Phosphorylation within the synaptonemal complex. Red Española de Meiosis I. El Escorial. Spain
- T. García-Muse, M. Castellano-Pozo and A. Aguilera (2012) R-loop-dependent replication impairment and genome instability during meiosis. Recombination mechanisms and Genome Instability EMBO Workshop. Jerez de la Frontera. Spain

C.3. Research projects

- PROJECT TITLE: Fosforilaciones de ATM/ATR en respuesta al daño en el ADN durante la meiosis (PGC2018-101099-BI00)
FINANCING ENTITY: Ministerio de Ciencia, Innovación y Universidades
DURATION 3 years FROM: Jan 2019 TO: Dec 2021
PRINCIPAL INVESTIGATOR: Tatiana García Muse
- PROJECT TITLE: Ayudas para la gestión de la investigación y de la transferencia del conocimiento (2020/00000690)
FINANCING ENTITY: Universidad de Sevilla. Plan Propio
DURATION 24 months FROM: Jan 2020 TO: Dec 2021



PRINCIPAL INVESTIGATOR: Tatiana García Muse
PROJECT TITLE: Ayudas a proyectos precompetitivos “Fosforilaciones de ATM/ATR en respuesta al daño en el ADN” (2019/00000463)
FINANCING ENTITY: Universidad de Sevilla. Plan Propio
DURATION 6 months FROM: May 2018 TO: Dec 2018
PRINCIPAL INVESTIGATOR: Tatiana García Muse
PROJECT TITLE: Ayudas por captación de fondos “Fosforilaciones de ATM/ATR en respuesta al daño en el ADN” (2018/00000498)
FINANCING ENTITY: Universidad de Sevilla. Plan Propio
DURATION 3 years FROM: May 2019 TO: Dec 2021
PRINCIPAL INVESTIGATOR: Tatiana García Muse
PROJECT TITLE: Transcription y Replication Como Fuentes de Inestabilidad Genética (BFU2016-75058-P)
FINANCING ENTITY: Ministerio de Economía, Industria y Competitividad
DURATION 3 years FROM: 2016 TO: 2019
PRINCIPAL INVESTIGATOR: Andrés Aguilera López
PROJECT TITLE: R-loops as a major modulator of transcription-associated recombination and chromatin dynamics (TARLOOP). (ERC Advanced Grant)
FINANCING ENTITY: European Research Council.
DURATION 5 years FROM: 2016 TO: 2020
PRINCIPAL INVESTIGATOR: Andrés Aguilera López

C.4. Contracts, technological or transfer merits