CV Date	05/05/2021

Part A. PERSONAL INFORMATION

First and Family name	Fernando Gómez Herreros		
ID number	28634522M	Age	41
Researcher codes	Researcher ID	F-2674-2016	
	ORCID	0000-0002-5693-3489	

A.1. Current position

Institution	University of Sevilla		
Department	Genetics		
Address	Manuel Siurot s/n 41013 Seville, SPAIN		
Phone number	+34 652335260	e-mail	fgomezhs@us.es
Current position	Ramon y Cajal Fellow	From	10/04/2016
Spec. UNESCO code	240701, 240702, 240990, 240902, 241501		
Key words	DNA Repair, transcription, Chromosomal translocations, Cancer		
Webpage	http://grupo.us.es/gomezherreroslab/gomezherreroslab/Home.html		
Twitter	@FGH_Lab		

A.2. Education

Qualification	University	Year
Degree in Biology	University of Sevilla	2003
PhD in Molecular biology	University of Sevilla	2010

A.3. Scientific scores

Supervised Thesis: 3 (in progress)
Total citations: 543 **Average citations per year (last 5, 2021 not included):** 68
Publications: 16 **Q1 publications:**12
First author publications: 7
Corresponding author publications: 3
H index: 11 *Source: Web of Science*

Part B. CV SUMMARY *(max. 3500 characters, including spaces)*

Dr. Fernando Gómez-Herreros is a Junior Group Leader (Ramón y Cajal Fellow) at the Institute of Biomedicine of Sevilla. He got his PhD in 2010 supervised by Proff. Chávez de Diego and Dr Muñoz-Centeno at the University of Sevilla. During his PhD he described the deleterious effects of transcriptional stress and the associated cellular response. These works have implications from the molecular basis of gene expression to the effects generated by drugs that alter intracellular nucleotide pools, commonly used as immunosuppressants.

After his PhD he moved to the *Genome Damage and Stability Center* of the University of Sussex in the United Kingdom. The GDSC is a prestigious institute with relevant contributions to the field of genomic instability and associated human disease. He joined the prestigious group of Professor Keith W. Caldecott, internationally renowned for uncovering the impact of impaired DNA single strand break repair in neurodegenerative disease. In this group, Dr. Gómez-Herreros focused on the study of DNA breaks generated by DNA topoisomerases. Dr. Gómez-Herreros established with his studies the current repair model of this type of damage. On top of that, using a mouse system, he demonstrated the relevance of specific enzymes as etiological factors in topoisomerase 2 poison-based chemotherapy. In 2014 he got his maximum achievement by discovering the source and consequences of the abortive cycles of type II DNA topoisomerases in mammals. This discovery was a milestone in the field since the endogenous origin of this type of lesions was unknown. Moreover, this spontaneous damage, when not repaired properly, generates a human syndrome characterized by mental retardation, epilepsy, and progressive ataxia. In his work, published in Nature Genetics in 2014, Dr Gómez-Herreros described for the first-time affected patients. In addition to these works, Dr. Gómez-Herreros collaborated in studies related to proteins

involved in amyotrophic lateral sclerosis and their function in the repair of transcription-associated DNA damage.
In 2015 he received one of the prestigious Ramón y Cajal fellowships aimed at promoting the incorporation of outstanding researchers to Spanish research institutes. Thanks to this contract, he joined the Department of Genetics of the University of Seville in April 2016 stablishing his own lab at the Institute of Biomedicine of Seville as an emergent PI. He currently directs a group dedicated to the study of the connection between gene expression, genome instability and human disease. Current studies in his lab are focused on the repair of DNA lesions generated by DNA topoisomerases during transcription and their implication in cancer development. As a result of these studies Gómez Herreros laboratory has recently described the repair mechanism by which oncogenic chromosomal translocations, common in secondary and infant acute leukemias, are formed. Gómez Herreros laboratory has also recently described which cellular processes promote the formation of these oncogenic reorganizations. These results have important implications like that combination therapy of topoisomerase 2 poisons with transcription inhibitors can potentially result in reduced mutagenic side effects without significant loss in antineoplastic efficacy. Apart from basic-science projects, Dr. Gómez Herreros laboratory maintains a close collaboration with clinical-research groups addressing the cellular response and tumor resistance to genotoxic agents commonly used in chemotherapy.

Part C. RELEVANT MERITS
C.1. 10 selected publications from last 10 years (by date) *Corresponding Author

1.Article* (3/3) Olmedo-Pelayo et al, **2020** Canonical Non-Homologous End-Joining Promotes Genome Mutagenesis and Translocations Induced by Transcription-associated DNA Topoisomerase 2 Activity **Nucleic Acids Research** doi.org/10.1093/nar/gkaa640 **IF: 11.147 D1**

2.Review* (1/1) Gómez-Herreros **2019.** DNA Double Strand Breaks and Chromosomal Translocations Induced by DNA Topoisomerase II. **Frontiers in Molecular Bioscience.** 10;6:141. doi: 10.3389/fmolb.2019.00141. *Corresponding Author **IF: 3.565 Q2 (Review)**

3.Article* (1/7) Gómez-Herreros et al, **2017**. TDP2 suppresses chromosomal translocations induced by DNA topoisomerase II during gene transcription. **Nature Communications**. 10;8(1):233. doi: 10.1038/s41467-017-00307-y. *Corresponding Authors. **IF:12.124 D1**

4.Article (1/12) Gómez-Herreros et al, **2017**. The ribosome assembly gene network is controlled by the feedback regulation of transcription elongation. **Nucleic Acids Research**. 19;45(16):9302-9318. doi: 10.1093/nar/gkx529. **IF:10.162 D1**

5.Article (4/7) Maciejewski et al, **2015**. Divergent requirement for a DNA repair enzyme during enterovirus infections. **MBIO**. 7(1):e01931-15. doi: 10.1128/mBio.01931-15. **IF:6.975 Q1**

6.Article (1/17) Gómez-Herreros et al, **2014** TDP2 protects transcription from abortive topoisomerase activity and is required for normal neural function. **Nature Genetics**. 46-5, pp.516-537. ISSN 1546-1718. **IF:29.352 D1**

7.Article (6/8) Rulten et al, **2014** PARP-1 dependent recruitment of the amyotrophic lateral sclerosis-associated protein FUS/TLS to sites of oxidative DNA damage. **Nucleic acids research**. 42-1, pp.307-321. ISSN 1362-4962. **IF:9.112 D1**

8.Article (1/8) Gómez-Herreros et al, **2013** Balanced production of ribosome components is required for proper G1/S transition in Saccharomyces cerevisiae. **The Journal of biological chemistry**. 288-44, pp.31689-32389. ISSN 1083-351X. **IF:4.6 Q1**

9. Article (1/11) Gómez-Herreros et al, **2013** TDP2-dependent non-homologous end-joining protects against topoisomerase II-induced DNA breaks and genome instability in cells and in vivo. **PLoS Genetics**. 9-3, pp.e1003226. ISSN 1553-7404. **IF:8.167 D1**

10. Article (1/6) Gómez-Herreros et al, **2012** TFIIS is required for the balanced expression of the genes encoding ribosomal components under transcriptional stress. **Nucleic acids research**. 40-14, pp.6508-6527. ISSN 1362-4962. **IF:8.278 D1**

C.2. Research projects and grants as PI (by granting date).

1. Role: **Principal investigator**
Reference: PID2019-105212GB-I00
Name of the project: Chromosomal Translocations and Genome Mutagenesis Induced by DNA Double Strand Breaks Promoted During Gene Transcription
Principal investigator: Fernando Gómez Herreros (Universidad de Sevilla, SPAIN)
Funding body: **MINECO (Spain)**
Call: Proyectos de I+D+I Start-End date: 2020-2022 Funding: **133,100.00€**

2. Role: **Principal investigator**
Reference: P18-HO-2560
Name of the project: Mejora del Proyecto TRANSTRESS.
Principal investigator: Fernando Gómez Herreros (Universidad de Sevilla, SPAIN)
Funding body: **FEDER, Junta de Andalucía (Spain)**
Call: H2020 Start-End date: 2020 - 2021 Funding: **40,000.00€**

3. Role: **Co-investigator**
Reference: 636134
Name of the project: Translational assessment of predictive factors of response of Ewing sarcoma to genotoxic therapy.
Principal investigator: Enrique de Álava (Universidad de Sevilla, SPAIN)
Funding body: **Sarcoma Fundation of America (USA)**
Start-End date: 2019 - 2020 Funding: **50,000.00€**

4. Role: **Principal investigator**
Reference: BFU2016-76446-P
Name of the project: Estudio de los mecanismos moleculares que dan lugar a las reorganizaciones cromosómicas de origen transcripcional
Principal investigator: Fernando Gómez Herreros (Universidad de Sevilla, SPAIN)
Funding body: **MINECO (Spain)**
Call: Excelencia (Frontera)
Start-End date: 2016-2019 Funding: **145,200.00€**

C.3. Contracts (by granting date)

1. Contracts for young researchers from *Sistema Nacional de Garantía Juvenil y del Programa Operativo de Empleo Juvenil*.
Reference: EJ-234 Funding body: Junta de Andalucía/Universidad de Sevilla
Start-End date: 15/01/2018-15/07/2019
2. Ramón y Cajal fellowships 2014
Reference: RYC-2014-16665 Funding body: MINECO
Start-End date: 09/04/2016-09/04/2021 Funding: 308,600.00€

C.4. Oral presentations in international conferences *(by presenting date)***.**

1. Source and Consequences of Abortive DNA Topoisomerase II Activity During Transcription**.** DNA topology and topoisomerases in genome dynamics, **EMBO Meeting**. Les Diablerets, Switzerland, **2019**
2. Transcription as a source of abortive TOP2 activity. Chromosome Architecture and Topological Stress, **UNIA Workshop**. Baeza, Spain. **2018**
3. Oncogenic Chromosomal Translocations Induced by DNA topoisomerase II During Gene Transcription. Chromosomal Instability: From Molecular Mechanisms to Disease, **UNIA Workshop**. Baeza, Spain. **2017**
4. The Role of Tdp2 in Chromosome Rearrangements and Translocations. **EMBO Meeting** DNA Topoisomerases, DNA topology and human health. Les Diablerets, Switzerland. **2015**

C.5. Other research references

1. I3 Certificate of Research Excellence (Spanish Ministry of Science and Universities 2020)
2. Reviewer for peer-review international journals: Nature Communications, PLoS Genetics, Molecular Oncology, Genes, Frontiers, Cell Cycle, ACS Chemical Biology.
3. Reviewer for national and international funding bodies: Agencia Estatal de Investigación, Spain. AECC predoc 2018, AECC postdoc 2018, AECC predoc 2019. Juan de la Cierva Incorporación 2019 (Comission). CRIS Research Program Projects 2020. Agence Nationale de la Recherche, France. National call 2019 & 2021.

C.6. Supervision

1. Doctoral thesis 2017-2021 (ongoing) PhD student: Diana Rubio Contreras
Title: "Role of transcription in the formation of oncogenic chromosomal translocations"
2. Doctoral thesis 2019-2023 (ongoing, cosupervised by Proff. Enrique de Álava) PhD student: J. Joaquín Olmedo Pelayo
Title: " Mecanismos Moleculares de Resistencia a Agentes Genotóxicos y Su Aplicación al Diseño de Nanovehículos Terapéuticos en El Sarcoma de Ewing"
3. Doctoral thesis 2019-2023 (ongoing) PhD student: Esperanza L. Granado de la Calle
Title: "Mecanismos moleculares de respuesta al estrés transcripcional inducido por lesiones en el DNA"
4. Master thesis (finished): 3 Final Degree Projects (finished): 8

C.7. Teaching (degree and master)

1. *Molecular Genetics* (Degree in Biology). Years 16/17,17/18, 18/19, 19/20, 20/21 (Completed): 5.3 teaching credits per year.
2. *Cell cycle and differentiation* (Master's Degree in Genetics and Biotechnology) Years 16/17,17/18 & 18/19 (Completed): 0.8 teaching credits per year. Coordinator in 2019.
Gene expression(Master's Degree in Genetics and Biotechnology) Year 20/21(Completed).

C.8. Educational activities

1. European Researchers' Night. "Azar y cáncer, juega tus cartas" 2018 & 2019.

2. Summer scientific campus "Genetics: from the laboratory to society". FECYT / University of Seville. 2017 & 2018