MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE ABREVIADO (CVA)

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

Part A. PERSONAL INFORMATION

First name	Ralf Erik		
Family name	Wellinger		
Gender (*)	Male	Birth date	
ID number			
e-mail			
Open Researcher and Contributor ID (ORCID) (*)			

(*) Mandatory

A.1. Current position

Position	Full Professor			
Initial date	2021			
Institution	University of Seville			
Department/Center	Genetics	CABIMER – Genome Biology		
Country	Spain		Teleph. number	
Key words	Mitochondrial Plasticity and Replication, DNA damage and repair, Micronutrients and genome instability			

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

Period	Position/Institution/Country/Interruption cause
2009-2021	Associate Professor / Univ. of Seville
2007-2009	Assistant Professor / Univ. of Seville
2003-2007	Ramón y Cajal Fellow / Univ. of Seville
2001-2003	Marie Curie Fellow / Univ. of Seville
1997-2001	ETH Postdoc Fellow / ETH Zurich / Switzerland

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD sc. nat. ETH	ETH Zurich / Switzerland	1996
Dipl. Biologe	Univ. of Kaiserslautern / Germany	1992
Research Assistant	Glasgow Univ. / United Kingdom	1991

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

During my research carrier I made important contributions to establish high resolution mapping of DNA damage and repair, to study chromatin organization during replication, transcription-replication conflict driven genome instability, R-loop induced replication, and the role of micronutrients in genome instability and metabolism. The international prestige of the journals that published this work (EMBO J, DNA Repair, Molecular Cell, Journal of Biological Chemistry, ACS Nano, Molecular and Cellular Biology, Cell Reports, Nucleic Acids Research, PNAS or eLife) reflects quite well the interest in this work. Most of my basic research work is based on yeast and 'humanized' yeast as a model organism. However, we recently extended our research to human cells lines. Basic research projects that potentially lead to improved treatment of human disease are one of my motivations to channel my recent research activity into research focusing on metalloid (selenium) and metal (manganese/iron) driven genome instability and neurological disease.

Since 2006 I head the research group 'Mitochondrial Plasticity and Replication at CABIMER (Centro Andaluz de Biología Molecular y Medicina Regenerativa) and in 2021 I was promoted to Full Professor (Genetics) at the University of Seville. At the beginning of 2020, I was awarded an EMBO senior STFellowship to collaborate with Prof. Claudio De Virgilio (Univ. Fribourg, CH) to study TORC1 activation *in vitro*. In 2022, I was awarded Management Committee Member of the EU-COST action CA21115 Iron-sulphur (FeS) clusters: from chemistry to immunology (FeSImmChemNet).

Since my arrival in Spain, I participated in 9 research projects. I have been the Principal Investigator of 7 research projects including 4 national (Plan Nacional) and 3 local (Junta de Andalucia – European Union) research projects. I have been co-founder of 2 spin-off companies that have been awarded for its business plan (6° Concurso de iniciativas empresariales de la Universidad de Sevilla) as well as with national (NEOTEC) and local (Agencia IDEA de la Junta de Andalucía / Plan Proprio Univ. de Sevilla) research funding, and funding from the Anangu (EURO-FRED) investment group.

I published a total of 3 patents and 41 research works, 37 of them are scientific articles in international journals (92% in Q1) resulting in an h-index of 19 (22). Moreover, I have been first or corresponding author in 22 articles.

My teaching activities at the University of Sevilla started in 2003 and covered different fields of study including Genetics, Molecular Biology and Biochemistry. I am currently teaching Genetics at the 'Escuela Técnica Superior de Ingenería Informática' within 'Ingenería de Salud' and also participate in the Master Course 'Estructura y Dinámica de los Genomas'. Altogether I have been director of 4 PhD theses (all '*suma cum laude por unanimidad'*) and a total of 20 undergraduate research works (Master, Final Grade, ERASMUS).

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

De Oya I.G., Jiménez-Gutiérrez E., Gaillard H., Molina M., Martín H. and **Wellinger R.E.** CA: Wellinger R.E. 2022. Manganese Stress Tolerance Depends on Yap1 and Stress-Activated MAP Kinases. Int. J. Mol. Sci. 23, 15706. DOI: 10.3390/ijms232415706

Nicastro R., Gaillard H., Zarzuela L., ..., **Wellinger R.E.** CA: De Virgilio C. and Wellinger R.E. (author 10/10) 2022. *Manganese is a Physiologically Relevant TORC1 Activator in Yeast and Mammals*. eLife 11: e80497. DOI: 10.7554/ELIFE.80497

Zapatka M., Pociño-Merino I., Heluani-Gahete H., ..., Torres-Rosell J. CA: Torres-Rosell J. (author 12/14). 2019. Sumoylation of Smc5 Promotes Error-free Bypass at Damaged Replication Forks Cell Reports, 29: 3160-3172.e4. DOI: 10.1016/j.celrep.2019.10.123

Guintini L., Tremblay M., Toussaint M., D'Amours A., **Wellinger R.E.**, Wellinger,R.J. and Conconi A. CA: Wellinger R.J. and Conconi A. 2017. Repair of UV-induced DNA lesions in natural *Saccharomyces cerevisiae* telomeres is moderated by Sir2 and Sir3, and inhibited by yKu-Sir4 interaction. Nucleic Acids Research, 45: 4577-4589. DOI: 10.1093/nar/gkx123

Stuckey R., García-Rodríguez N., Aguilera A. and **Wellinger, R.E.** CA: Wellinger R.E. 2015. Role for RNA:DNA hybrids in origin-independent replication priming in a eukaryotic system. Proceedings of the National Academy of Sciences of the United States of America, 112: 5779-5784. DOI: 10.1073/pnas.1501769112

García-Rodríguez N., Manzano-López J., Muñoz-Bravo M., Fernández-García E., Muñiz M. and **Wellinger R.E.** CA: Wellinger R.E. 2015. Manganese redistribution by calcium-stimulated vesicle trafficking bypasses the need for P-type ATPase function. Journal of Biological Chemistry, 290: 9335-9347. DOI: 10.1074/jbc.M114.616334

Manzano-Lopez J., Perez-Linero A.M., Aguilera-Romero A., ..., Muñiz M. CA: Muñiz M. (author 11/12) 2015. COPII coat composition is actively regulated by luminal cargo maturation. Current Biology, 25: 152-162. DOI: 10.1016/j.cub.2014.11.039

Voisset C., García-Rodríguez N., Birkmire A., Blondel M. and **Wellinger, R.E.** CA: Blondel M. 2014. Using yeast to model calcium-related diseases: Example of the Hailey-Hailey disease. Biochimica et Biophysica Acta - Molecular Cell Research, 1843: 2315-2321. DOI: 10.1016/j.bbamcr.2014.02.011

García-Rodríguez N., Díaz De La Loza M.D.C., Andreson B., Monje-Casas F., Rothstein R. and **Wellinger, R.E.** CA: Wellinger R.E. 2012. Impaired manganese metabolism causes mitotic misregulation. Journal of Biological Chemistry, 287: 18717-18729. DOI: 10.1074/jbc.M112.358309

Díaz De La Loza M.D.C., Gallardo M., García-Rubio M.L., Izquierdo A., Herrero E., Aguilera A. and **Wellinger, R.E.** CA: Wellinger R.E. 2011. Zim17/Tim15 links mitochondrial iron-sulfur cluster biosynthesis to nuclear genome stability. Nucleic Acids Research, 39: 6002-6015. DOI: 10.1093/nar/gkr193

C.2. Congress

The next congress where I am invited to give a presentation is the 1st FeSImmChemNet meeting, 23. - 25. February 2023 in Carcavelos, Portugal.

In the last 10 years have participated in meetings including Ulysseus Researchers' Days (Aging & Wellbeing), EMBO/FEBS Conferences, Jacques Monod Conference, IFOM Meeting, CNRS Workshop, UNIA Workshops and REDIL (Red Española de Levaduras) meetings. My PhD students have been able to present their work in international meetings such as the 11th apoptosis meeting (Portugal), SEBBM meetings, RNaseH meeting (UK), FEBS-EMBO Conference (Paris) and UNIA meetings.

I have also been invited to give seminars at the University of Brest, the IBVF Sevilla, IRB Lleida and the Oslo University Hospital.

C.3. Research projects (active or finalized within the last 5 years)

COST action 2022-2026 CA21115 Iron-sulphur (FeS) clusters: from chemistry to immunology (FeSImmChemNet; CSO Approval date - 27/05/2022); MC Member

P20-01220 Un enfoque fosfoproteómico hacia la comprensión y el tratamiento de una enfermedad rara. PAIDI 2020: Proyectos I+D+i de la Junta de Andalucia-FEDER. Ralf Erik Wellinger. Universidad de Sevilla. 2021-2023. 75.000 Euros. Principal Investigator

BFU2015-69183-R. *Disección de la replicación genómica iniciada por R-loops al nivel genético y molecular*. MICINN (Plan Nacional 2015). Ralf Erik Wellinger. Universidad de Sevilla. 2016-2019. 147.000 Euros. Principal Investigator.

P11-CTS-7962. *Protección ante el Daño Celular Causado por la Luz Solar: Valoración de Nuevos Filtros UV*. Junta de Andalucía (Proyecto de Excelencia 2011). Ralf Erik Wellinger. Universidad de Sevilla. 2013-2018. 206.280 Euros. Principal Investigator.

C.4. Contracts, technological or transfer merits

1. Co-founder NanoSel S.L. (NIF B66576620) in 2015 (active till 2020).

1.1 Patent: **Wellinger, R.E.** and Khiar N. EP15382465.1 (2016) Nanoparticles for diagnosis and drug delivery. Consejo Superior de Investigaciones Científicas (CSIC)/Universidad de Sevilla. Licensed to NanoSel S.L. (https://patents.google.com/patent/WO2017050979A1/en)

2. Co-founder and scientific director Suntec Solar S.L. (CIF B91914143) in 2011 (active till 2016).

2.1. Patent: Manetsberger J., Gaillard H., **Wellinger, R.E.** and Walzel B. EP11152797.4. PCT/EP2012/051477 *Photoresponsive microcapsules and compositions containing the same.* European Patent Office. Priority date: 30/01/2011. Universidad de Sevilla. Licensed to Suntec Solar S.L. in 2011 (https://patents.google.com/patent/WO2012104262A1/en)

2.2. Patent: Gaillard H., **Wellinger, R.E.** and Walzel B. EP11155718.7 *Improved compartmentalised photoresponsive sunscreen compositions.* European Patent Office. Priority date: 24/02/2011. Universidad de Sevilla. Licensed to Suntec Solar S.L. in 2011.

3. First price '6° Concurso de iniciativas empresariales de la Universidad de Sevilla' (06/2011)

4. Responsible Investigator of the PAIDI group BIO-026 (DNA Metabolism) from 2011 to 2020.

C.5. Formation and teaching activities

- **Direction of Ph.D. thesis:** Hayat Heluani-Gahete. *Identification and Characterization of Factors involved in Sodium Selenite Toxicity*. Doctor en Biología de la Universidad de Sevilla. July 2021. Ruth Stucky. *Studies on the effects of persistent RNA priming on DNA replication and genomic stability*. Doctor en Biología de la Universidad de Sevilla. June 2014. Néstor García-Rodríguez. *Studies on the effect of manganese on DNA metabolism and cell cycle*. Doctor en Biología de la Universidad de Sevilla. October 2012. María del Carmen Díaz de la Loza (co-directed with A. Aguilera). *New factors and new systems in mitochondrial and nuclear genomic instability in yeast*. Doctor en Biología de la Universidad de Sevilla. June 2009.

- **Direction of Master/Diploma/ERASMUS final projects:** 5 TFG (Biology/Biochemistry/ Biomedicine)**.** 11 TFM (Biology/Biochemistry)**.** 5 ERASMUS (Netherlands/Lituania/Italy).

- **Teaching:** *Estructura y Dinámica de los Genomas* (Master in Molecular Genetics and Biotechnology, University of Seville). 2007/08-2022/23; *Biología Molecular y Genética* (Health Engineering degree, University of Seville). 2014/2015-2022/2023; *Genética Molecular e Ingeniería Genética* (Biochemistry degree, University of Seville), 2013/2014; *Genética Microbiana* (Biochemistry degree, University of Seville), 2011/2012- 2012/2013; *Genética* (Biology degree, University of Seville), 2008/09-2010/11.

C.6. Participación in evaluacion tasks

- **Grant reviewer for:** Netherlands Organization for Scientific Research (NWO), ANEP, BBSRC Genes & Developmental Biology (GDB) Committee (UK) Cancer Research, French National Research Agency (ANR), Fondo para la Investigación Científica y Tecnológica (FONCYT, Argentina).

- **International schientific journal reviewer for:** Cancer Research, Genome Research, Nucleic Acids Research, PloS ONE, Molecular Genetics and Genomics, Radiation and Environmental Biophysics, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, Plasmid, Journal of Cell Science, Folia Microbiologica, PLoS Genetics, Cell Calcium, Molecules, Oncotarget, Elife, Epigenetics & Chromatin, Mutation Research, Genes, International Journal of Molecular Sciences, Antioxidants, Journal of Funghi, Genes.

- **Editorial board member:** Genes

- **Ph.D. thesis comities:** 12 national thesis comities and 4 international thesis comities.

C.7. Recent short stay

Short stay in the laboratory of Prof. Claudio De Virgilio (Université de Fribourg, Switzerland)in 2020 to work on TORC1 activation by manganese. Awarded with an EMBO Short Term Fellowship.

C.8. Quinquenios / Sexenios

5 Quinquenios (teaching), 1 sexenio de transferencia (technological transfer), 4 sexenios de investigación (research; 5th presented in 2023)