MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

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

CV date	20/09/2024

Part A. PERSONAL INFORMATION

First name	Michael		
Family name	Hackenberg		
Gender (*)	Male		
Social Security, Passport, ID number			
e-mail	hackenberg@ugr.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0003-2248-3114	

(*) Mandatory

A.1. Current position

Position	Catedrático de Universidad		
Initial date	30/06/2022		
Institution	University of Granada		
Department/Center			
Country	Spain	Tel. number	
Key words	Bioinformatics, microRNA, DNA methylation		

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

Period	Position/Institution/Country/Interruption cause
2017-2022	Profesor Titular de Universidad
2013-2017	Profesor Contratado Doctor
2011-2013	Profesor Ayudante Doctor

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licenciado en Física	FAU Erlangen-Nürnberg	2000
Doctor en Biología	Universidad de Granada	2005

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

Sexenios: 4 (uno de ellos de transferencia) último del 2021
JCR papers: 94
Citations: 3118 (WoS); 5543 (Google Scholar)
H: 28.0 (WoS); 37 (Google Scholar)

Currently I am a Full Professor at the Genetics Department of the University of Granada (Spain) were I also obtained my PhD in 2005 working on human retrotransposons under the supervision of Prof. José Oliver. For this PhD thesis I obtained the Excellence Award from the University of Granada in 2010. After post-

doctoral stays at the Chair of Genome Oriented Bioinformatics of the Technical University of Munich (2006/2007) and at the Research Centre CIC bioGune (Derio, Spain; 2007-2009) I went back to the University of Granada in 2009 after obtaining a Juan de la Cierva grant from the Spanish Ministry of Science and Innovation. In 2011 I was appointed an Assistant Professor. Between 2013 and 2022 I was an Associate Profesor and since June 2022 I am a Full Professor at the Department of Genetics of the University of Granada. Furthermore, since 2020 I am the coordinator of the Genómica Evolutiva y Bioinformática group (BIO-162 (PAI)). I authored 94 JCR papers, 6 book chapters and edited one book. These publications received a total of 3051 citations in WoS (h=28) and 4864 in Google Scholar (h=35).
My main research lines are about DNA methylation and small RNAs being the main focus over the last years on the data analysis and interpretation of high-throughput sequencing experiments. I contributed to this field by coediting the book "Bioinformatics for High Throughput Sequencing" which was published by Springer and by developing several, highly used tools and databases. Among those, miRanalyzer (published in 2009 and 2011 in Nucleic Acids Research) and its successor sRNAbench are of particular success with hundreds of users and over 1000 citations in the Web Of Science. I filed three patent applications and in 2014, together with collaborators from the University Medical Center in Amsterdam I founded ExBiome, a company dedicated to the development of next generation non-invasive biomarkers. Currently I am maintaining several highly successful collaborations with research groups from Spain, The Netherlands, Czech Republic, United States, Israel and Australia covering several topics of small RNA research including the small RNA response to abiotic stress in plants or the secretion of small RNAs into (cancer) exosomes.
I am teaching both, genetics (classical and molecular genetics in the Biology Degree) and subjects related to bioinformatics both at degree (Biochemistry Degree) and master level (Genetics and Evolution, and Biotechnology Master Programs). I supervised 5 PhD thesis at the University of Granada and I was a co-director for one thesis at the University of Rijeka.

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

C.1. Publications *(see instructions)*

1 Assessing the complementary information from an increased number of biologically relevant features in liquid biopsy-derived RNA-Seq data. Stavros Giannoukakos, Silvia D'Ambrosi, Danijela Koppers-Lalic, Cristina Gómez-Martín, Alberto Fernandez, Michael Hackenberg. Heliyon Volume 10, Issue 6e27360. 2023

2: Reassessment of miRNA variant (isomiRs) composition by small RNA sequencing. Cristina Gómez-Martín, Ernesto Aparicio-Puerta, Monique AJ van Eijndhoven, José M Medina, Michael Hackenberg, D Michiel Pegtel. Volume 3, Issue 5100480. 2023

3: sRNAbench and sRNAtoolbox 2022 update: accurate miRNA and sncRNA profiling for model and non-model organisms. Aparicio-Puerta E, Gómez-Martín C, Giannoukakos S, Medina JM, Scheepbouwer C, García-Moreno A, Carmona-Saez P, Fromm B, Pegtel M, Keller A, Marchal JA, ***Hackenberg M****. Nucleic Acids Res. 2022 May 12;50(W1):W710-7. doi: 10.1093/nar/gkac363. 2022*

4: Functional characterization of the tomato HAIRPLUS gene reveals the implication of the epigenome in the control of glandular trichome formation. Fonseca R, Capel C, Yuste-Lisbona FJ, Quispe JL, Gómez-Martín C, Lebrón R, ***Hackenberg M****, Oliver JL, Angosto T, Lozano R, Capel J. Hortic Res. 2022 Jan 18;9 doi: 10.1093/hr/uhab015.*

5. geno5mC: A Database to Explore the Association between Genetic Variation (SNPs) and CpG Methylation in the Human Genome, Cristina Gómez-Martín, Ernesto Aparicio-Puerta, JM

Medina, Guillermo Barturen, JL Oliver, Michael Hackenberg. Journal of Molecular Biology 2021 volume 433. https://doi.org/10.1016/j.jmb.2020.11.008

6. Ernesto Aparicio-Puerta David Jáspez Ricardo Lebrón Danijela Koppers-Lalic Juan A Marchal Michael Hackenberg. (2018) liqDB: a small-RNAseq knowledge discovery database for liquid biopsy studies. Nucleic Acids Research, gky981, https://doi.org/10.1093/nar/gky981

7. M Hackenberg, M Kotsyfakis. Exosome-Mediated Pathogen Transmission by Arthropod Vectors. Trends in parasitology (2018)

8: Differential expression of microRNAs and other small RNAs in barley between water and drought conditions. ***Hackenberg M****, Gustafson P, Langridge P, Shi BJ.*
Plant Biotechnol J. 2015 Jan;13(1):2-13. doi: 10.1111/pbi.12220.

9 Koppers-Lalic, Danijela; et al. 2014. Nontemplated Nucleotide Additions Distinguish the Small RNA Composition. Cell reports. 2014

10: NGSmethDB: a database for next-generation sequencing single-cytosine-resolution DNA methylation data. ***Hackenberg M****, Barturen G, Oliver JL. Nucleic Acids Res. 2011 Jan;39(Database issue):D75-9. doi: 10.1093/nar/gkq942.*

C.2. Congress

General introduction to miRNA and data analysis
Name: ADVANCES IN MOLECULAR PHYSIOLOGY. "FROM BENCH TO BEDSIDE"
Participation: 3 talks (1h each)
Place/date: Kuwait City, 17-19 marzo 2019
Organizer: Faculty of Medicine, Kuwait University

The small RNA content of exosomes and bodily fluids
Name: Epigenetics, coding and non-coding RNAs: Challenging NGS data
Participation: Keynote lecture
Place/date: Bari (Italia), 25/06/2014-27/06/2014
Organizer: Instituto di Tecnologie Biomediche di Bari

Expression profiling of small RNAs in high-throughput sequencing experiments
Name: NGS and non-coding RNA data analysis workshop II
(COST action BM 1006)
Participation: Keynote lecture
Place/date: Plovdiv (Bulgaria), 15/05/2014-16/05/2014
Organizer: University of Plovdiv

What the clustering of entities might tell us
Name: Les Jeudis des Sciences Colloquium Generale
Participation: Invited talk:
Place/date: Luxembourg (Luxemburgo), 10/03/2011
Organizer: Universite du Luxembourg

C.3. Research projects

Title: **Aplicaciones Biomédicas de los componentes de la saliva de la garrapata Ixodes Ricinus**
PI: Michael Hackengberg
Financing agency: FEDER/UGR
Duration: 01/01/2024-31/12/2026
Financing: 15.000,00

Title: Efecto combinado de miRNAs: importancia en la interfaz entre parásitos y huésped y sus aplicaciones biomédicas ACRÓNIMO: combiMiR
PI: Michael Hackengberg
Financing agency: FEDER/UGR
Duration: 01/01/2020-30/06/2022
Financing: 31.565,90

Title: ELBA - European Liquid Biopsies Academy project - Towards widespread clinical application of blood- based diagnostic tools
Reference: H2020-MSCA-ITN-2017 (765492)
PI: Tomas Würdinger (Coordinator), Michael Hackenberg IP of WP 3 (Computational data analysis).
Financing agency: European Union
Duration: 01/01/2018-30/09/2022
Financing: 3,727,722.96 Euros para consorcio, UGR: 495,745.92

Title: CARACTERIZACION BIOINFORMATICA DE LA FORMACION DE TRICOMAS Y LA RESISTENCIA A PLAGAS EN TOMATE: EPIGENOMICA Y EPITRANCRIPTOMICA
Reference: AGL2017-88702-C2-2-R
PI: Michael Hackenberg / José L Oliver
Financing agency: Ministerio de Economía, Industria y Competitividad
Duration: 01/01/2018-30/09/2021
Financing: 114.950,00 Euros

Title: Epi-transcriptomic small RNA modifications as predictive signatures for therapy response in Diffuse Large B cell Lymphoma
PI: Danijela Koppers-Lalic (Lead scientist), Michael Hackenberg (PI of WP3)
Financing agency: Dutch Cancer Society
Duration: 01/03/2017-28/02/2020
Financing: 547890 Euros

Title: Roles of non-coding RNAs in regulation of herpes simplex virus 1 latency
Reference: IP-2014-09-8790
PI: Igor Jurak
Financing agency: Croatian science foundation
Duration: 30/04/2015-30/04/2019
Financing: 130,000 Euros

C.4. Contracts, technological or transfer merits

Cofounder of exBiome (exbiome.com)
Patents:
1) Pegtel Michiel; Danijela Koppers-Lalic; Rom Wurdinger; Irene Bijnsdorp; Michael Hackenberg.
Title: Small ncRNAs as biomarkers
Referencia: PCT/EP2015/058614.
2) Michael Hackenberg, Michalis Kotsyfakis, Juan Antonio Marchal, Houria Boulaiz, Gonzalo Martínez
Title: COMPOSICIÓN QUE COMPRENDE MIRNAS PARA SU USO COMO MEDICAMENTO
Referencia: PCT/ES2018/070325