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Education and key qualifications

- 04/05/2022 **Doctorate of Philosophy in Natural Sciences Natural Sciences (Ph.D. Biomedicine)**
Grade: "summa cum laude" ("with highest honours")
USP28 regulates Squamous cell oncogenesis and DNA repair via Δ Np63 deubiquitination
Supervisor: Prof. Markus E. Diefenbacher.
Graduate School of Life Sciences, Biozentrum, Department of Biochemistry and Molecular Biology, Julius-Maximilians-Universität Würzburg, Würzburg, Germany.
- 2015 **Master of Science (M.Sc.) Biochemistry, Molecular Biology and Biomedicine**
Faculty of Chemical Sciences, Universidad Complutense Madrid, Madrid, Spain.
- 2014 **Postgraduate Courses. Regenerative Medicine and Craniofacial Sciences.**
Experimental Approaches and Project Design (30 ECTS credits)
Topics in Regenerative Medicine: Stem Cells and Cell Therapy (15 ECTS credits)
Craniofacial Sciences (30 ECTS credits).
Department of Craniofacial Development and Stem Cell Biology, Faculty of Dentistry, Oral & Craniofacial Sciences, King's College London, London, UK.
- 2014 **Veterinary Medicine degree.**
Faculty of Veterinary, Universidad de Córdoba, Córdoba, Spain
- 2011-2012 **Academic Internship Veterinary Medicine degree. Erasmus.**
Faculty of Veterinary Medicine, Università degli Studi di Milano, Milan, Italy.

Current position

- 2026-Present **Junior Group Leader / Ramon y Cajal Researcher (tenure track position)**
Instituto de Biomedicina de Sevilla (IBiS). Hospital Universitario Virgen del Rocío / CSIC / Universidad de Sevilla, Sevilla, Spain.
Department of Cellular Biology, Universidad de Sevilla, Sevilla, Spain.

Previous position(s)

- 2020 – 2025 **Researcher.**
IBCII, Universität Goethe Frankfurt, Frankfurt, Germany
Mentor: Prof. Ivan Đikić.
-Projects: (i) *Proteotoxic RNA splicing in Cancer and Retinitis Pigmentosa.*
(ii) *DNA-Protein Crosslinks Promote Pathogenic Innate Immunity.*
(iii) *Novel Liver Cancer Mouse Models to Study Host Immune Responses.*
(iv) *Generation of therapeutic Proteolysis Targeting Chimeras (PROTACs).*
(v) *Roles of lncRNAs and m6A-Modified RNAs in Stress and Oncogenesis*
- 2015 – 2020 **Ph.D. Researcher.**
Biozentrum, Julius-Maximilians-Universität Würzburg, Würzburg, Germany.
Mentors: Prof. Markus E. Diefenbacher and Prof. Martin Eilers.
-Projects: (i) *USP28- Δ Np63 axis in DNA repair and Squamous Tumors.*
(ii) *Lung Cancer Mouse Models for Interrogating Oncogene Function.*
(iii) *Efficacy of Novel USP28 Inhibitors in Preclinical Mouse Models.*

- 2014 – 2015 **M.Sc. Researcher.**
 CNIO, Madrid, Spain.
 Mentor: Prof. Francisco X. Real.
 -Project: *Clonal Analysis of Kras Mutant Cells in Murine Pre-Malignant Pancreas*.
- 2013 – 2014 **Research Internship**
 Department of Craniofacial Development and Stem Cell Biology, King's College
 London, London, UK.
 Mentor: Prof. Karen J. Liu.
 -Project: *The Function of Gsk3 in Neural Crest Derived Craniofacial Skeleton*.

RESEARCH ACHIEVEMENTS AND PEER RECOGNITION

PUBLICATIONS: *Main Author (First / co-First Author/ Corresponding):*

1. Tomaskovic, I. *, Prieto-Garcia, C. *, ... & Dikic, I. (2026). DNA-Protein Crosslinks Promote cGAS-STING-driven Premature Aging and Embryonic Lethality. ***Science***, (391). * **Equal contribution / Co-first author**.
2. Prieto-Garcia, C., ..., & Dikic, I. (2024). Pathogenic proteotoxicity of cryptic splicing is alleviated by ubiquitination and ER-phagy. ***Science***, 386(6723), 768–776.
3. Prieto-Garcia, C., ..., & Diefenbacher, M. E. (2022). USP28 enables oncogenic transformation of respiratory cells, and its inhibition potentiates molecular therapy targeting mutant EGFR, BRAF and PI3K. ***Molecular Oncology***, Volume16, Issue17, Pages 3082-3106.
4. Prieto-Garcia, C., ..., & Diefenbacher, M. E. (2021). Inhibition of USP28 overcomes Cisplatin-resistance of squamous tumors by suppression of the Fanconi anemia pathway. ***Cell Death & Differentiation***, 29(3).
5. Prieto-Garcia, C., ..., & Diefenbacher, M. E. (2020). Maintaining protein stability of ΔNp63 via USP 28 is required by squamous cancer cells. ***EMBO Molecular Medicine***, 12(4).
6. Prieto-Garcia, C., ..., & Diefenbacher, M. E. (2021). USP28: Oncogene or Tumor Suppressor? A Unifying Paradigm for Squamous Cell Carcinoma. ***Cells*** 10(10), 2652–2652.

Contributing-Author:

7. Abdul Azeez, K. R., Hayuningbudi, S., ..., Prieto-Garcia, C., ..., Krause, D. & Knapp, S. (2026). Discovery and Development of a Potent LIMK2 Isoform-Specific Degradar. ***ACS Chemical Biology***
8. Shah, V. J., Hartmann, O., Wegner M., Prieto-Garcia, C., & Dikic, I. (2026). Targeting Ubiquitin Signaling Vulnerabilities in KEAP1-Inactivated Lung Cancer. ***EMBO journal***.
9. Schäfer, D., Prieto-Garcia, C., ... Dikic, I. & Cheng, X. (2026). Targeting the Spliceosomal Protein USP39 Through Allosteric Ligands and PROTAC-Induced Degradation. ***Angewandte Chemie International Edition. Second Author.***
10. Ho-Xuan, H., Bruckmann, A., Natali, L., Prieto-Garcia, C., ..., & Stolz, A. (2025) YTHDF proteins and m6A-RNA clients undergo autophagic turnover during contact inhibition. ***Cell Reports*** 44 (9).
11. Suanes-Cobos, L., Prieto-Garcia, C., ... & Calzado, M. A. (2025) A novel feedback loop between DYRK2 and USP28 regulates cancer homeostasis and DNA damage signaling. ***Cell Death & Differentiation***.
12. Oo, J. A., Warwick, T., Katalin Pálfi, McNicoll, F., Cao, C., Prieto-Garcia, C., ..., & Leisegang, M.S. (2025). Long non-coding RNAs direct the SWI/SNF complex to cell-specific enhancers. ***Nature Communications***.
13. Herhaus, L., Gestal-Mato, U., Eapen, V. V., Mačinković, I., Bailey, H. J., Prieto-Garcia, C., ..., & Dikic, I. (2024). IRGQ-mediated autophagy in MHC class I quality control promotes tumor immune evasion. ***Cell***.
14. Reissland, M., Hartmann, O., Tauch, S., Bugter, J. M., Prieto-Garcia, C., ..., & Diefenbacher, M. E. (2024). USP10 drives cancer stemness and enables super-competitor signalling in colorectal cancer. ***Oncogene***.
15. Tomaskovic, I., Prieto-Garcia, C., & Dikic, I. (2025). Nucleophagy repairs toxic DNA lesions. ***Cell Research***.
16. Kew, C., Prieto-Garcia, C., ..., & Dikic, I. (2024). The aryl hydrocarbon receptor and FOS mediate cytotoxicity induced by *Acinetobacter baumannii*. ***Nature Communications. Second Author.***
17. Maier, C*. R., Hartmann, O.*, Prieto-Garcia, C., ..., & Schulze, A. (2023). USP28 controls SREBP2 and the mevalonate pathway to drive tumour growth in squamous cancer. ***Cell Death & Differentiation***.

18. Oo, J. A., Katalin Pálfi, Warwick, T., Wittig, I., Prieto-Garcia, C. ..., & Brandes, R. P. (2022). Long non-coding RNA PCAT19 safeguards DNA in quiescent endothelial cells by preventing uncontrolled phosphorylation of RPA2. **Cell Reports**.
19. Fischer, T., Hartmann, O., Reissland, M., Prieto-Garcia, C., ..., & Diefenbacher, M. E. (2022). PTEN mutant non-small cell lung cancer require ATM to suppress pro-apoptotic signalling and evade radiotherapy. **Cell & Bioscience**.
20. Diehl, V.*, Wegner, M.* Grumati, P.*, ..., Prieto-Garcia, C., ..., & Kaulich, M. (2021). Minimized combinatorial CRISPR screens identify genetic interactions in autophagy, **Nucleic Acids Research**.
21. Hartmann, O., Reissland, M., Maier, C. R., Fischer, T., Prieto-Garcia, C., ..., & Diefenbacher, M. E. (2021). Implementation of CRISPR/Cas9 Genome Editing to Generate Murine Lung Cancer Models That Depict the Mutational Landscape of Human Disease. **Frontiers in Cell and Developmental Biology**.

Accepted / Preprints / Revision:

22. Matkovic, V., Prieto-Garcia, C. , ... & Dikic, I. (2025). TRIM28 regulates pre-mRNA splicing via phosphorylation and SUMOylation networks. **bioRxiv**. *Second Author*.
23. Prieto-Garcia, C.*, ... & Dikic, I. (Under revision) Oncogenic Rewiring of RNA Splicing Sustains Malignant Proteostasis and Creates a Therapeutic Vulnerability. **Signal Transduction and Targeted Therapy**. *= **Corresponding author**.
24. Audrey, X., Kolling, M., Bourke, A. M., Mosler, T., Prieto-Garcia, C., ..., & Dikic, I. (Accepted; 2026) Programmed ribosomal frameshifting triggers translational stress to promote viral replication. **Cell**.

PATENTS AND TRANSLATION.

1. Modulators of USP39, **European Patent Application EP25216921.4** (Co-inventor; filed 19 Nov 2025, unpublished). Inventors: C. Prieto-Garcia, X. Cheng, D. Schäfer and I. Dikic.
2. **SpliceTACs Bio** Translational Research Venture. Founders: C. Prieto-Garcia, X. Cheng, D. Schäfer and I. Dikic.

AWARDS & RECOGNITIONS

1. **RMU-FFQM Award: Pharmaceutical Research & Innovative Medical Therapies** by Rhine-Main Universities (RMU): Goethe University Frankfurt, TU Darmstadt and Johannes Gutenberg University Mainz, 2025.
2. **EMBO poster award** at 46th Symposium on Hormones & Cell Regulation: Cancer Signaling 2024.
3. **Young Investigator Cancer Award** by AEK Germany, 2023.
4. First author article was **journal cover**: Molecular Oncology, Volume16, Issue17, 2022.
5. First author article was included in **2022 highlights** in journal: Molecular Oncology, 2022.

RESEARCH FUNDING AS PI / Leader.

1. **The Stephenson Global Scholar Grants: Advancing Pancreatic Cancer Treatment Through Next-Generation Splicing Inhibitors** (2026SGPCRISGS0000332700). Period: 2026–2029. Stephenson Global Pancreatic Cancer Research Institute (SGPCRI). Funding: \$400,000. Host: IBiS & FISEVI.
2. **5th Call for Research Projects “Por un mundo sin ELA” for Young Investigators FUNDELA**. Proteotoxic RNA Splicing Induced by the TDP-43 M337V Mutation in Human Motor Neurons: From Aberrant RNA Splicing to Protein Aggregation. Period: 2026–2027. FUNDELA. Funding: €15,000. Host: IBiS & FISEVI.
3. **Ramón y Cajal Researcher 2024**. Category: Biomedicine. Period: 2026–2030. Spanish Ministry of Science and Innovation. Funding: €257,200 (PI salary included). Ranked 4th out of 262 applicants in Biomedicine (final grant score: 99.4/100). *Host: University of Seville & IBiS*.
4. **beLAB2122: Targeting spliceosome machinery in cancer**. Funding period: 2022–2026. Bristol Myers Squibb (BMS) & Evotec. Funding: €684,204. Co-lead of the project with Ivan Đikić. *Host: University Frankfurt*.
5. **Generación de Conocimiento 2025 (Type A - Emerging Researcher): PROTECT** (Proteotoxic RNA Splicing Characterization for Cancer Therapy in Hepatocellular Carcinoma). Period: 2026–2029. Spanish Research Agency (AEI). Funding: €221,250 + FPI Predoctoral researcher (€134,615). *Host: University of Seville & IBiS*.

TALKS IN CONFERENCES & SYMPOSIUMS

1. Heinrich Wieland Prize Symposium. 11 December 2025, Munich, Germany. **Participation: Talk**.
2. Dubrovnik Conference on Cancer Mechanisms and Therapeutics. 5-9 September, 2025, Cavtat, Croatia. **Participation: Talk**.

3. 13. RMU-RNA Salon Mini-Symposium Genomics approaches in RNA biology. "Translation & Co-translational processes". 1 April 2025, Frankfurt am Main, Germany. **Participation: Talk.**
4. 46th Symposium on Hormones and Cell Regulation. "Cancer Signaling and Metabolism"., 9-12 October 2024, Mount Sainte Odile, France. **Participation: Talk and Poster (Best poster Award).**
5. FASEB Conference: "Protein Folding in the Cell", 07-11 July 2024, Southbridge, Massachusetts, USA. **Participation: Talk.**
6. Susan Lindquist School on Proteostasis, 3-6 October 2023, Ingelheim am Rhein, Germany. **Participation: Small Talk and Poster.**
7. 21st International AEK Cancer Congress. "Towards New Cancer Therapies: Mechanisms and Molecules", 15 -17 February 2023, Kassel, Germany. **Participation: Talk.**
8. EMBO Workshop: "Cancer cell signaling Linking molecular knowledge to cancer therapy". 16-20 September 2022, Cavtat, Croatia. **Participation: Talk.**

SELECTED INVITED SEMINARS

1. Departamento de Biología Celular, Universidad de Sevilla (**US**). 12/09/2025. Sevilla (Spain) Host: Manuel Antonio Muñiz Guinea.
2. Centro de Investigación del Cáncer Salamanca (**CIC**). 14/07/2025, Salamanca (Spain). Host: Xosé Bustelo.
3. Centro de Biología Molecular Severo Ochoa (**CBMSO**). 6/05/2025, Madrid (Spain).
Hosts: Crisanto Gutierrez and Emilio Lecona. Funded by ATRAE conexion Genoma CSIC.
4. Instituto de Biomedicina de Sevilla (**IBIS**). 11/04/2025, Sevilla (Spain). Host: Rafael Fernández Chacón.
5. Centro Andaluz de Biología del Desarrollo (**CABD**). 20/03/2025, Sevilla (Spain). Host: Peter Askjaer.
6. Centro Nacional de Investigaciones Oncológicas (**CNIO**). 19/03/2025, Madrid (Spain).
Host: Guadalupe Sabio.
7. Centro Andaluz de Biología Molecular y Medicina Regenerativa (**CABIMER**). 25/02/2025, Sevilla (Spain). Hosts: Jose Carlos Reyes and Andres Aguilera.
8. Instituto Maimónides de Investigación Biomédica de Córdoba (**IMIBIC**). 23/01/2025, Córdoba (Spain). Host: Manuel D. Gahete.
9. Universitätsklinikum Heidelberg, **DKFZ**. Belab2122 Science Day 2024. 4/07/2024. Heidelberg (Germany). Host: Friedrich Reinhard.

OTHER CONTRIBUTIONS TO THE RESEARCH COMMUNITY

TEACHING

- 2026-Now Fundamentals of Life Sciences (Bachelor's Degree in Primary Education). Universidad de Sevilla. Sevilla (Spain). Total number of hours: 46h.
- 2020-2025 Biochemistry and Molecular Biology (Medicine and Dentistry Degrees). Universität Goethe Frankfurt. Frankfurt (Germany). Total number of hours: 72h.
- 2015-2020 Biochemistry and Molecular Biology (Medicine and Dentistry Degrees). Universität Würzburg, Würzburg (Germany). Total number of hours: 500h.
- 2017-2025 I have mentor several Bachelor and Master students, and Ph.D. students at Universität Würzburg and Universität Goethe Frankfurt (Germany)

DIFUSSION AND MEDIA

1. **Radio:** e.g., Canal Sur Radio <https://www.canalsur.es/multimedia.html?id=2107147>
e.g., RNE: <https://www.rtve.es/play/audios/el-laboratorio-de-jal/laboratorio-jal-desde-geneshasta-retinitis-pigmentosa/16466942/>
2. **Press:** e.g., cover in Diario SUR (Spain) <https://www.diariosur.es/malaga/malaga-casa-flores-regentaba-familia-publicar-science-20241122103143-nt.html>
e.g., HRT (Croatia) <https://magazin.hrt.hr/znanost-tehnologija/dikicev-tim-otkrio-novi-mehanizam-kljucan-za-proizvodnju-stanicih-proteina-11861852?utm>
e.g, Frankfurter Allgemeine Zeitung (Germany) <https://www.faz.net/aktuell/rhein-main/frankfurt/erkenntnisseueber-spleissen-koennten-krebstherapie-nuetzen-110133738.html>
3. **TV:** e.g., Fuengirola TV <https://fuengirolatv.com/un-investigador-brillante/>
4. **Public engagement:** talks at high schools in Spain (Eg. Gamarra / San José de la Montaña; Málaga, Andalucía) and science outreach events in Germany/Spain.

OTHER SCIENTIFIC ACTIVITIES

1. Reviewer in journals such as *Signal Transduction and Targeted Therapy*, *Molecular Cancer*, *Oncogene*, *Cancers*, *Cellular & Molecular Biology Letters*.
2. Member of scientific societies, including the RNA Society, CERFA, RAICEX, ASEICA, and SEBBM.
3. Accredited expert evaluator in the expert's database of the Spanish State Research Agency (AEI).