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RESEARCH INTEREST

Cell biology at the molecular level, with a strong interest in the molecular mechanisms that promote correct cell division in mitosis and meiosis.

Key words: Chromosome segregation; Endomembranes, Nuclear envelope reformation; Mitotic Exit; Micronuclei; Chromosome Instability; Cancer Cells

EDUCATION

2007 PhD in Molecular Biology. Outstanding “Cum Laude” Faculty of Medicine (University of Cantabria).

2003 MSc in Biomedical Science. Outstanding “Cum Laude” Faculty of Medicine (University of Cantabria, Spain).

2002 BSc in Biochemistry. University of Valencia (Spain).

2000 BSc + MSc in Pharmacy. University of Valencia (Spain).

EMPLOYMENT

2017-present Senior Postdoctoral Position. Project: Role of chromosome-membrane interactions in chromosome missegregation. Centre for Mechanochemical Cell Biology, University of Warwick, UK. Supervisor: Prof. Stephen Royle.

Maternity Leaves: 2011, 2015 and 2019.

2010-2017 Postdoctoral Position. Project: Understanding the mechanisms that promote correct chromosomes segregation during the formation of oocytes. Dept of Epigenetics at MRC-LCS-Imperial College, (London, UK). Supervisor: Dr. Enrique Martínez-Pérez.

2009 Research Fellow. Project: Role of the p27 Y phosphorylation cyclin D-cdk4/6 on/off switch in the G0-G1 transition and the establishment of T cell energy. SUNY Downstate Medical Center, Depts. of Paediatrics and Cell Biology (New-York, USA). Supervisor: Prof. Stacy W. Blain.

2008-2009 Postdoctoral Fellow. Project: Functions of p21 in genetic regulation. Molecular Biology Department, Santander, University of Cantabria (Spain). Supervisor: Prof. Javier León.

2003-2007 PhD Fellow. Project: Functions of p21 in genetic regulation and apoptosis by tyrosine-kinase inhibitors. Studies in colorectal cancer model and leukaemia cells Molecular Biology Department, Santander, University of Cantabria (Spain). Supervisors: Prof. Javier León & Prof. Maria Dolores Delgado.

PUBLICATIONS

1. Lascarez Lagunas, L, Nadarajan, S, Martinez-García, Quinn, JN, Todisco, E, Thakkar, T, Berson, E, Eaford, D, Crawley, O, Faull, P, **Ferrandiz, N**, Barroso, C, Labella, S, Koury, E, Smolikove, S, Zetka, M, Martinez-Perez, E, Colaiacovo, M. ATM/ATR kinases link meiotic resynapsis and DNA double-strand break repair pathway choice (Press, *Curr. Biol.*, August 2022).
2. Dantas, M, Oliveira, A, Aguiar, P, **Ferrandiz, N**, Maiato, H, Ferreira, J.G. Mechanosensitive control of mitotic entry. *bioRxiv* 2022.
3. **Ferrandiz, N***, Downie L, Starling, GP, Royle S. J*. Endomembranes promote chromosome missegregation by ensheathing misaligned chromosomes. *J. Cell Bio.* 2022, Granted the Cover Journal-June 2022. (*Corresponding author).
4. **Ferrandiz, N**, Barroso, C, Telecan, O., Shao, N, Kim, H, Testori, S., Faull, P, Cutillas, P, Snijders, B, Colaiacovo, M, Martinez-Perez, E. Spatiotemporal regulation of Aurora B recruitment ensures release of cohesion during C. elegans oocyte meiosis. *Nature Communications*, 2018 Feb 26;9(1):834).

5. Nadarajan S, Mohideen F, Tzur YB, **Ferrandiz N**, Crawley O, Montoya A, Faull P, Snijders AP, Cutillas PR, Jambhekar A, Blower MD, Martinez-Perez E, Harper JW, Colaiacovo MP. The MAP kinase signaling pathway coordinates crossover designation with synaptonemal complex disassembly during meiosis. *eLIFE* 2016 Feb 27;5.
6. Crawley, O, Barroso, C, Testori, S, **Ferrandiz, N**, Silva, N, Castellano-Pozo, M, Jaso-Tamame, A, Martinez-Perez, E. WAPL-1 regulates meiotic chromosome structure and cohesion by antagonizing specific cohesin complexes. *eLIFE*, 2016 Feb 4;5.
7. Silva N, **Ferrandiz N**, Barroso C, Tognetti S, Lightfoot J, Telecan O, Encheva V, Faull P, Hanni S, Furger A, Snijders AP, Speck C, Martinez-Perez E. The fidelity of synaptonemal complex assembly is regulated by a signaling mechanism that controls early meiotic progression. *Dev Cell*. 2014 Nov;31(4):503-11.
8. Gomez-Casares MT, Garcia-Alegria E, Lopez-Jorge CE, **Ferrandiz N**, Blanco R, Alvarez S, Vaque JP, Bretones G, Caraballo JM, Sanchez-Bailon P, Delgado MD, Martin-Perez J, Cigudosa JC, Leon J. MYC antagonizes the differentiation induced by imatinib in chronic myeloid leukemia cells through downregulation of p27(KIP1). *Oncogene*. 2013 Apr 25;32:2239-46.
9. **Ferrandiz N**, Caraballo JM, García-Gutierrez L, Devgan V, Rodriguez-Paredes M, Lafita MC, Bretones G, Quintanilla A, Muñoz-Alonso MJ, Blanco R, Reyes JC, Agell N, Delgado MD, Dotto GP, León J. p21 as a transcriptional corepressor of S-phase and mitotic control genes. *PLoS One*. 2012;7(5): e37759.
10. Bretones G, Acosta JC, Caraballo JM, **Ferrandiz N**, Gómez-Casares MT, Albajar M, Blanco R, Ruiz P, Hung WC, Albero MP, Perez-Roger I, León J. SKP2 oncogene is a direct MYC target gene and MYC down-regulates p27(KIP1) through SKP2 in human leukemia cells. *J Biol Chem*. 2011 Mar18;286(11):9815-25.
11. **Ferrandiz, N**, Caraballo, JM, Albajar, M, Gomez-Casares, MT, Delgado, MD and Leon, J. p21Cip1 confers resistance to the tyrosine kinase inhibitor imatinib in human chronic myeloid leukemia cells. *Cancer Lett*. 2010 Jun1;292(1):133-9.
12. Leon J, **Ferrandiz N**, Acosta JC, Delgado MD. Inhibition of Cell Differentiation: A Critical Mechanism for MYC Mediated Carcinogenesis? *Cell Cycle*. 2009 Apr 15;8(8): 1148-57. (REVIEW).
13. Marques-Garcia F, **Ferrandiz N**, Fernandez-Alonso R, Gonzalez-Cano L, Herreros-Villanueva M, Rosa-Garrido M, Fernandez-Garcia B, Vaque JP, Marques MM, Alonso ME, Segovia JC, Leon J, Marin MC. p73 plays a role in erythroid differentiation through GATA1 induction. *J Biol Chem*. 2009 Aug 7; 284(32): 21139-56.
14. **Ferrandiz N**, Martin-Perez J, Donertas D, Weber A, Eilers M, Dotto P, Delgado MD and Leon J. HCT116 cells deficient in p21Waf1 are hypersensitive to tyrosine kinase inhibitors and adriamycin through a mechanism unrelated to p21 and dependent on p53. *DNA Repair* (Amst) 2009 Mar, 1;8 (3);390-9.
15. Acosta JC*, **Ferrandiz N***, Bretones G, Blanco R, Torrano V, Richard C, O'Connell B, Sedivy J, Delgado MD and Leon J. Myc inhibits p27-induced erythroid differentiation by repressing erythroid master genes master genes without reversing the proliferation arrest. *Molecular Cell Biology*, 2008 Dec, 24(28): 7286-95. (*Indicates first authors). DOI:10.1128/MCB.00752-08.
16. Vaque JP, Fernandez-Garcia B, Garcia-Sanz P, **Ferrandiz N**, Bretones G, Calvo F, Crespo P, Marin MC, Leon J. c-Myc inhibits Ras mediated differentiation of pheochromocytoma cells by blocking c-Jun up-regulation. *Molecular Cancer Research*, 2008 Feb, 6(2): 325-39.
17. Gomez-Casares MT, Vaque JP, Lemes A, Molero T, **Ferrandiz N**, Leon J. Antiapoptotic proteins Bcl2 and BclX do not protect chronicmyeloid leukemia cells from imatinib-mediated growth arrest. *Anales de la Real Academia Nacional de Farmacia*, 2006, Jan 72(1):27-36. ID: 46607

AWARDS AND FELLOWSHIPS

- 2022 Award for the **Promotion of Scientific Vocations**. Fundación Merck-Salud and Aseica.
- 2019 University of Warwick, **End of Year Special Award Scheme** (EY SAS).
- 2016 Imperial Institute of Clinical Science, **Mentoring Award**.
- 2015 Medical Research Council, **Recognition Award -Athena SWAN Program**.
- 2012-2014 Medical Research Council, **End of Year Special Award Scheme** (EY SAS).
- 2010-2013 Medical Research Council, **Career Development Fellowship**.
- 2008-2009 University of Cantabria, **Postdoctoral Fellowship**.
- 2006 Spanish Ministry of Education (F.P.U), **Short-term Fellowship, PhD programme (Harvard University)**.
- 2003-2007 Spanish Ministry of Education (F.P.U), **Predocctoral Fellowship**.

TEACHING EXPERIENCE

- 2020-2022 Assistant Lecturer. **Undergraduate and Postgraduate** students at the University of Warwick. Created online materials, delivered lectures and led case-based learning sessions for BSc in Health and Medical Sciences, University of Warwick. Delivered lectures and led journal clubs in the MSc in Interdisciplinary Biomedical.

2005-2009 Assistant Lecturer. **Undergraduate students** in Biochemistry course. Created and delivered practical Laboratory sessions, Medical School, Cantabria University, Spain.

SUPERVISION

2021-2022 Principal Supervisor: Joe Parham, **Masters Student**. MBio Biomedical Science. UW
2019-2022 Principal Supervisor: Laura Downie, **PhD Student**. BBSRC-funded Midlands Integrative Biosciences Training Partnership (MIBTP) programme. Warwick Medical School.
2018 Principal Supervisor: Tom White, **Undergraduate Student**. MRC-funded DTP in Interdisciplinary Biomedical Research (IBR) Summer School Programme. University of Warwick.
2013-2017 Assistant Supervisor: Oana Telecan, **PhD student**. MRC PhD Programme. Imperial College.
2012-2016 Assistant Supervisor: Daimona Kounde, **PhD student**. MRC PhD Programme. Imperial College.
2011-2012 Assistant Supervisor: Dorcas Amposen, **Master student**. MRC Interdisciplinary Programme. Imperial College.
2007-2009 Assistant Supervisor: Juan Manuel Caraballo, **PhD student**. University of Cantabria-IBBTEC.

FUNDING

2019-2024. Named-Investigator in the project: Mitotic spindle stability and chromosome missegregation in cancer. **Cancer Research UK**. Programmed Award 2018: £1.5 Million.
2015-2020. Named-Investigator in the project: Meiosis. **MRC**. Grant-Intramural: £1M.
2009-2014. Named-Investigator in the project: Meiosis. **MRC**. Grant-Intramural: £1M.
2007-2010. Named-Investigator in the Project: Red Cooperativa de Investigación en Cancer. **ISCIII-RETIC-RD06/0020**. Grant: 96.000 €.
2008-2009. Postdoctoral Fellowship, University of Cantabria. Ayuda de Investigación, Programa de Ayudas Postdoctorales de la **Universidad de Cantabria**. Grant: 18, 564 €.
2006-2007. Named-Investigator in the Project: Desarrollo y validación de nuevos sistemas de ensayo para la identificación de candidatos a fármacos en una colección de productos naturales. **MEC, PROFIT-CIT-090100-2007-7**. The project was coordinated with BIOMAR, S.A. Grant: 52,000 €.
2005-2007. Named-Investigator in the Project: Mecanismos transformantes del oncogén *MYC*: interrelaciones moleculares en diferenciación y papel en leucemia mieloide crónica. La comisión interministerial de ciencia y tecnología (**CICYT**) SAF05-00461. Grant: 200,000 €.
2005-2007. Named-Investigator in the project: El oncogene MYC en leucemia mieloide crónica y su papel en la respuesta a imantib. Fundación Marqués de Valdecilla (**IFIMAV**) API05-15. Grant: 11,000 €.
2003-2007. **F.P.U PhD Scholarship** from **Spanish Ministry of Education**.

INVITED SPEAKER

2022 **Centro de Investigación del Cáncer**. Invited by Dr. Xosé Bustelo.
2018 **Instituto de Biomedicina y Biotecnología de Cantabria**, invited by Prof. Javier Leon.
2018 **Instituto de Biología Funcional y Genómica**, Centro Superior de Investigaciones Científicas de Salamanca, invited by Dra. Cristina Martín Castellanos.

CONFERENCES

Lasttenyears

2022 **EMBO-Chromosome segregation and Aneuploidy** (May, Vienna). Oral Communication
2022 **CMCB Retreat** (Warwick, UK). Oral Communication.
2022 **Cell Cycle Meeting** (On-Line February). Oral Communication.
2021 **Cell La Vie Meeting** (On-Line). Poster Communication.
2021 **Salk Cell cycle meeting** (On-Line). Poster Communication.
2021 **CERFA Cancer symposium** (on-Line). Poster Communication (Award Best Poster).
2021 **Mitotic Spindle: From Living and synthetic systems to theory** (On-Line). Oral Communication.

2020 ASCB: Cell Bio Virtual 2020 (On-line). Poster Communication
2020 Trends in Genome Integrity and Chromosome Dynamics (Seville). Poster Communication.
2019 BSCB&BSDB Annual Spring Meeting (University of Warwick), UK. Oral and Poster Communication.
2017 9th BMM (Dundee), UK. Poster Communication.
2016 Meiosis Gordon Research Conference (New London), UK. Oral Communication.
2016 1st MioNet Meeting (Tarragona), Spain. Oral Communication.
2016 8th BMM (London), UK. Oral and Poster Communication.
2015 EMBO Conference on Meiosis (Oxford), UK. Poster Communication.
2015 7th BMM (Newcastle), UK. Oral Communication.
2014 Meiosis Gordon Research Conference (New London), USA. Poster Communication.
2014 C.elegans International Meeting (Berlin), Germany. Poster Communication.
2013 NEMBO Conference on Meiosis (Dresden), Germany. Poster Communication.
2013 5th BMM (Cambridge), UK. Oral Communication.
2012 AACR 103rd Annual Meeting (Chicago), USA. Poster Communication.
2012 22nd Biennial EACR Congress (Barcelona). Poster Communication.

FELLOWSHIP EVALUATION COMMITTEE

2016-2022 SRUK-Society of Spanish Researchers in UK
2015-2017 ANEP-Agencia Nacional de Evaluación y Prospectiva, Spain

OUTREACH

2021-2022 SRUK-Women Science Committee of the Society of Spanish Researchers in UK
2022 11F-CONÓCELAS. Aseica
2021 Biomedical Scientist Volunteer (Pandemic). University Hospital Coventry & Warwickshire, UK.
2019 Public Science Evening. “Bad Cell Service”. Warwick Medical School.
2018 British Science Week. Cancer Research UK. Microscopy used in social media campaign. Warwick Medical School.
2018 Public Engagement Evenings at the University of Warwick. How to build a Human.
2013-2014-2016 Primary & Secondary Schools. Microscopy workshop for gaining hands-on experience using high-resolution microscopes.

MEETING ORGANISER

2022 Lead organizer of the **Talks** in the Women in Science committer-SRUK.
2020-2022 Lead organizer the **weekly Centre for Mechanochemical Cell Biology Talks** at UW.
2016 Organizer of the 8th **British Meiosis Meeting**. Clinical Science Centre-MRC-Imperial College, London.

REVIEWING

Journals Ad-hoc review for prestigious journals on the field such as eLife, J. Cell Sci., PLoS Biology and Life Science Alliance.

PROFESSIONAL MEMBERSHIPS

2019-2022: BSCB in UK-British Society of Cell Biology.
2013-2022: SRUK-Society of Spanish Research in UK.
2003-2022: ASEICA-Asociación Española de Investigación sobre el Cáncer.
2003-2022: SEBBM-Biochemistry and Molecular Biology Spanish Association.

OTHER MERITS

2018 ANECA Accreditation (PAD). Associate Professor Doctor-Spanish Qualification for teaching at the University.
2007-2010 Honorary Collaborator of the Molecular Biology Department. University of Cantabria.