Fecha del CVA	27/05/2025

Parte A. DATOS PERSONALES

Nombre	Adrián		
Apellidos	Fragoso Luna		
Sexo	No Contesta	Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email	ha.fragosoluna@gmail.com		
Open Researcher and Contributor ID (ORCID)	0000-0003-0325-7293		

A.1. Situación profesional actual

Puesto	Titulado superior de actividades técnicas y profesionales		
Fecha inicio	2022		
Organismo / Institución	Centro Andaluz de Biología del Desarrollo		
Departamento / Centro			
País	España	Teléfono	
Palabras clave			

A.2. Situación profesional anterior (incluye interrupciones en la carrera investigadora - indicar meses totales, según texto convocatoria-)

Periodo	Puesto / Institución / País
2021 - 2021	Titulado superior de actividades técnicas y profesionales / Centro Andaluz de Biología del Desarrollo
2020 - 2021	Titulado superior de actividades técnicas y profesionales / INSTITUTO DE BIOLOGIA FUNCIONAL Y GENOMICA
2016 - 2019	Titulado superior / INSTITUTO DE BIOLOGIA FUNCIONAL Y GENOMICA

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Doctorado en Biología Funcional y Genómica	Universidad de Salamanca / España	2020
Máster Universitario en Microbiología y Parasitología: investigación y Desarrollo	Universidad Complutense de Madrid	2015
Grado en Bioquímica	Universidad Complutense de Madrid	2014

Parte B. RESUMEN DEL CV

Ageing is one of the most challenging and fascinating process humans have ever faced. Understanding why we get older is key to eradicate age-associated diseases, like heart failures and neurodegeneration, among others. Pioneering works conducted in the soil nematode Caenorhabditis elegans demonstrate that we can delay ageing. Looking for long-lived mutant worms showed pathways that dictate our lifespan and are conserved in humans. In spite of this promising results, we are still far from conquering ageing, we need more knowledge.

A different approach to tackle the unknowns of ageing is researching on progerias, rare syndromes that seems to recapitulate accelerating ageing. Restoring healthspan in these patients will unveil more mysteries of ageing. Again, C. elegans provides a versatile tool. As a postdoctoral researcher associated to the Laboratory of “Nuclear Dynamics in Cell Biology and Development” leaded by Peter Askjaer (2021-present), we have created an avatar of progeria in worms. These mutants recapitulate important aspects of patients suffering progeria (DOI: 10.1038/s44318-024-00261-8). Molecular alterations in progeroid cells have been described for the nuclear envelope, where progeria-triggering proteins tend to locate. The main hallmark

of progeria is, precisely, irregular and malformed nuclei, instead of rounded nuclei from healthy donors. Such disrupted progeroid nuclei has been linked to also disformed nuclei from elder-donor cells (DOI: 10.1093/genetics/iyac166).

My hypothesis is that age-acceleratd disorders caused by progerias are explained not only from defects in nuclear envelope, but also from defects in cytoplasm. A collaboration with the group of Delphine Larrieu (Altos Lab) seems to support this notion, where cytoplasmic-associated proteins play an important role in the pathology (https://doi.org/10.1101/2022.10.07.509469). We hope these discoveries could be extrapolated to normal ageing.

Fine-tuning new tools to control gene expression in a spatio-temporal manner in the nematode is necessary for carrying on these investigations. We have developed, recently, such toolkits. Specifically, to get information on gene expression alteration at a tissue specific level (DOI: 10.1093/genetics/iyac166). Mutation causing Néstor-Guillermo progeria leads to alteration in gene expression.

PhD in Functional Biology and Genomics from University of Salamanca (2016-2020), financed by a Formación de Personal Investigador Grant (FPI, BES-2015-074479) in Dr. José Pérez Martín laboratory in Functional and Genomic Institute (IBFG), Salamanca. My thesis was devoted to study how cell cycle controls the differentiation programs in higher eukaryotes. Using C. elegans, we unveiled that APC/C with its co-activator Cdh-1/FZR-1 is a key factor coordinating cell division and differentiation.

In 2015 I was a visitor student in Dr. Carlos Briones Llorente's laboratory in Center of Astrobiology (CAB, CSIC/INTA, Madrid), where I developed RNA aptamers against the Core protein of the Hepatitis C virus (DOI: 10.1016/j.jmb.2022.167501).

In parallel to my research since 2023, I communicate our results and more ageing topics to the general public under the program Ciudad-Ciencia. My talk, entitled “Un viaje a los misterioso del envejecimiento”, is given throughout Spain.

From 2019 to 2021 I was part of Micromundo's Salamanca, a scientific dissemination project that tackles two different goals: create science vocations among high-school students and raise awarness in citizens on the growing problem of antibiotic resistance. To acomplish both purposes we developed scientific projects to discover new antibiotic-producer bacterias. Results from this project were presented in the international Congress “World Microbe Forum” in 2021.

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con “peer review” y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1. **Artículo científico**. Sophia Y Breusegem; Jack Houghton; Raquel Romero-Bueno; et al; Delphine Larrieu. 2025. A multiparametric anti-aging CRISPR screen uncovers a role for BAF in protein synthesis regulation. Nature Communications. 16-1681.
2. **Artículo científico**. Raquel Romero Bueno; Adrián Fragoso Luna; Cristina Ayuso García; Nina Mellmann; Alan Kavsek; Christian G. Riedel; Jordan D. Ward; Peter Askjaer. 2024. A progeria-associated BAF-1 mutation modulates gene expression and accelerates aging in C. elegans. The EMBO journal. 43(22), pp.5718-5746.
3. **Artículo científico**. Adrián Fragoso-Luna; Raquel Romero-Bueno; Michael Eibl; Cristina Ayuso; Celia Muñoz-Jiménez; Vladimir Benes; Ildefonso Cases. 2023. Expanded FLP toolbox for spatiotemporal protein degradation and transcriptomic profiling in C. elegans. Genetics. 223(1):iyac166.
4. **Artículo científico**. Beatriz Torres-Vázquez; Ana María de Lucas; Carlos García-Crespo; et al; Carlos Briones. 2022. In vitro selection of high affinity DNA and RNA aptamers that detect HCV core protein of genotypes 1 to 4 and inhibit virus production in cell culture. Journal of Molecular Biology. 434(7):167501.

5 **Capítulo de libro**. Fragoso-Luna; Peter. 2023. The Nuclear Envelope in Ageing and Progeria. Biochemistry and Cell Biology of Ageing: Part III Biomedical Science. Subcellular Biochemistry. 02:53-75.

C.2. Congresos

1 Fragoso-Luna; Romero-Bueno; Kennel; et al; Askjaer P. A progeria-associated BAF-1 mutation modulates ribosome expression and vesicular trafficking in C. elegans. Spanish worm meeting 2024. University of Seville. 2024. España. Congreso.
2 Fragoso-Luna; Romero-Bueno; Kennel; et al; Askjaer P. A progeria-associated BAF-1 mutation modulates ribosome expression and vesicular trafficking in C. elegans. European worm meeting 2024. University of Utrecht. 2024. Holanda. Congreso.
3 Fragoso-Luna; Romero-Bueno; Kennel; et al; Askjaer P. Knockdown of microtubule and lysosomal regulators alleviates embryonic lethality in a Nestor Guillermo Progeria C. elegans model. 24th International C. elegans Conference. Genetic Society of America. 2023. Reino Unido. Congreso.
4 Fragoso-Luna; Romero-Bueno; Kennel; et al; Askjaer P. Knockdown of microtubule and lysosomal regulators alleviates embryonic lethality in a Nestor Guillermo Progeria C. elegans model. 4th International Meeting on Laminopathies. FUNDACION CENTRO NACIONAL DE INVESTIGACIONES CARDIOVASCULARES CARLOS III. 2023. España. Congreso.
5 Fragoso-Luna; Romero-Bueno; Breusegem S; Rojas M; Ayuso C; Riedel C.G; Larrieu D; Askjaer P. C. elegans as a Nestor Guillermo Progeria Syndrome Model. 19th International Congress of Developmental Biology. International Society of Developmental Biology and Portuguese Society for Developmetnal Biology. 2022. Portugal. Congreso.
6 Fragoso-Luna; Romero-Bueno; Eibl M; Ayuso C; Muñoz-Jiménez C; Benes V; Cases I; Askjaer P. Expanded FLP toolbox for spatiotemporal protein degradation and transcriptomic profiling in C. elegans. European Worm Meeting 2022. University of Wien. 2022. Austria. Congreso.
7 Díaz M; Santamaría R; Sanchez de la Nieta; Fragoso A; Rodriguez-Vazquez; Santos B. A Service-learning Strategy To Teach Microbiology: Micromundo@Salamanca-Spain. An Active Search For New Antibiotic Producer Microorganisms. World Microbe Forum. American Society of Microbiology (ASM) and Federation of European Microbiological Societies (FEMS). 2021. Congreso.
8 Fragoso-Luna; Pérez-Martín J. APC/CFZR-1 participates in germline development in Caenorhabditis elegans. VII Spanish Worm Meeting. IDIBELL, UVIC-UCC, CRG, ICFO, ICMAB. 2019. España. Congreso.

C.4. Actividades de transferencia de tecnología/conocimiento y explotación de resultados

Ana María de Lucas Cerrillo; Adrián Fragoso Luna; Miguel Moreno Molina; María Fernández Algar; Ana García Sacristán; Víctor Manuel González Muñoz; Elena Marín Palma; Beatriz Torres Vázquez. EP21382710. APTAMERS AGAINST THE HEPATITIS C VIRUS CORE PROTEIN (solicitud de patente enviada) España. 29/07/2021. Consejo Superior de Investigaciones Científicas (CSIC), Instituto Nacional de Técnica Aeroespacial (INTA), Fundación para la Investigación Biomédica del Hospital Universitario Ramón y Cajal (FIBioHRC).