

Fecha del CVA	14/12/2025
---------------	------------

## Parte A. DATOS PERSONALES

Nombre	Esther		
Apellidos	Lizano González		
Sexo	No Contesta	Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email	esther.lizano@upf.edu		
Open Researcher and Contributor ID (ORCID)	0000-0003-3304-9807		

### A.1. Situación profesional actual

Puesto	Investigadora Distinguida Júnior (R3)		
Fecha inicio	2023		
Organismo / Institución	INSTITUT CATALÀ DE PALEONTOLOGIA		
Departamento / Centro			
País		Teléfono	
Palabras clave			

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

Periodo	Puesto / Institución / País
2016 - 2023	Personal docente e investigación / Universidad Pompeu Fabra
2014 - 2016	Staff Scientist / Centro Nacional de Análisis Genómico
2010 - 2013	Postdoc / Centro de Regulación Genómica
2007 - 2010	Postdoc / Max Planck Institute for Evolutionary Anthropology
2002 - 2007	Estudiante de doctorado / University of Leipzig

### A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Master en Asesoramiento Genético	Universidad Pompeu Fabra	2013
Licenciado en Ciencias Químicas	Universitat de Barcelona	2000

## Parte B. RESUMEN DEL CV

I am a Senior Researcher and Associate Professor with over 20 years of experience in genomic research, possessing a multidisciplinary profile that bridges evolutionary biology and applied biomedicine. Currently, I hold a dual academic position as a Junior Distinguished Researcher at the Institut Català de Paleontologia Miquel Crusafont (ICP) and as an Associate Professor at Universitat Pompeu Fabra (UPF). Complementing my academic tenure, I maintain a strategic link to the private sector as the Co-founder and Scientific Advisor of Flomics Biotech, S.L., established in 2018.

My career has focused on the study of RNA from multiple perspectives, underpinned by a solid foundation in biochemistry and chemistry. During my PhD at the Max Planck Institute for Evolutionary Anthropology (Germany), I focused on non-coding RNAs and the analysis of tRNA nucleotidyltransferases, key molecules in protein synthesis. I subsequently expanded my expertise to investigate translational changes in the brain as a postdoctoral researcher at the Centre for Genomic Regulation (CRG). A defining aspect of my trajectory is the development and optimization of Next-Generation Sequencing (NGS) methods. During my time as a Staff Scientist at the Centro Nacional de Análisis Genómico (CNAG), I transitioned from optimizing long-established technologies such as Illumina to implementing and refining third-generation long-read approaches like Oxford Nanopore.

This deep methodological expertise now drives my translational work. As a Scientific Advisor at Flomics, I guide the wet-lab innovation strategy, applying my expertise to the field of

liquid biopsy. My work focuses on the discovery of circulating RNA biomarkers for complex pathologies. My goal within this initiative is to bring to healthcare professionals a new method for diagnosis using a single, minimally invasive plasma sample, aiming for multi-disease detection panels in the long term.

My research impact is demonstrated by 49 total publications (h-index 23, 4798 citations). My output includes 3 papers as first author and 5 as senior author, alongside 2 reviews and 2 book chapters. Notable contributions include a European patent on cytosine modification detection and my role as Co-PI of an Industrial Doctorate grant (AGAUR).

I am also very passionate about mentoring, having co-directed five PhD theses (four completed, one ongoing), three master theses, and coordinated the subject Molecular Biology of the Cell II at UPF, fostering a culture of learning and interdisciplinary collaboration. I have also served on PhD defense tribunals and selection committees. My disciplined, hardworking nature and dedication to my goals and those of my team make me a valuable asset to any research or development team aiming to advance the field of applied genomics.

## 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 citas

- 1 Artículo científico.** Madupe, Palesa P.; Koenig, Claire; Patramanis, Ioannis; et al; Cappellini, Enrico; (23/38) Lizano, Esther. 2025. Enamel proteins reveal biological sex and genetic variability in southern African Paranthropus. *Science (New York, N.Y.)*. American Association for the Advancement of Science. 388, pp.969-969. ISSN 10959203.
- 2 Artículo científico.** Epifani, Florencia; Cabus, Lluc; Nolasco, Gregorio A.; et al; Serrano, Mercedes; (8/15) Lizano, Esther. 2025. Exploring a Circulating miRNA Signature for PMM2-CDG: Initial Insights Toward Diagnosis, Stratification, and Monitoring. *Journal of inherited metabolic disease*. John Wiley & Sons, Ltd. 48, pp.e70104-e70104. ISSN 15732665.
- 3 Artículo científico.** Ostridge, Harrison J.; Fontseré, Claudia; (3/84) Lizano, Esther; et al; Andrés, Aida M. 2025. Local genetic adaptation to habitat in wild chimpanzees. *Science*. American Association for the Advancement of Science. 387. ISSN 10959203.
- 4 Artículo científico.** Fong-Zazueta, Ricardo; Krueger, Johanna; M Alba, David; et al; Lizano, Esther. 2025. Phylogenetic Signal in Primate Tooth Enamel Proteins and its Relevance for Paleoproteomics. *Genome Biol. Evol.* 17.
- 5 Artículo científico.** Ringbauer, Harald; Salman-Minkov, Ayelet; Regev, Dalit; et al; Reich, David; (39/70) Lizano, Esther. 2025. Punic people were genetically diverse with almost no Levantine ancestors. *Nature*. *Nature Research*. 643, pp.139-139. ISSN 14764687.
- 6 Artículo científico.** Orkin, Joseph D.; F.K. Kuderna, Lukas; Hermsilla-Albala, Núria; et al; Marques Bonet, Tomas; (19/34) Lizano, Esther. 2024. Ecological and anthropogenic effects on the genomic diversity of lemurs in Madagascar. *Nature Ecology & Evolution* 2024 9:1. Nature Publishing Group. 9, pp.42-56. ISSN 2397-334X.
- 7 Artículo científico.** Hermsilla-Albala, Núria; Ennes Silva, Felipe; Cuadros-Espinoza, Sebastián; et al; Boubli, Jean P.; (12/21) Lizano, Esther. 2024. Whole genomes of Amazonian uakari monkeys reveal complex connectivity and fast differentiation driven by high environmental dynamism. *Communications Biology* 2024 7:1. Nature Publishing Group. 7, pp.1283. ISSN 2399-3642.
- 8 Artículo científico.** Alvarez-Estape, Marina; Pawar, Harvinder; Fontseré, Claudia; et al; Marques-Bonet, Tomas. 2023. Past Connectivity but Recent Inbreeding in Cross River Gorillas Determined Using Whole Genomes from Single Hairs. *Genes*. 14-3, pp.743-743. ISSN 2073-4425.

- 9 **Artículo científico.** F.K. Kuderna, Lukas; Gao, Hong; Janiak, Mareike C.; et al; Marques Bonet, Tomas; (55/75) Lizano, Esther. 2023. A global catalog of whole-genome diversity from 233 primate species. *Science. American Association for the Advancement of Science.* 380, pp.906-913. ISSN 10959203.
- 10 **Artículo científico.** Belmonte, S.; Cabus, L.; Tuñí, C.; et al; Sanders, P.; (6/9) Lizano, E.2023. An End-To-End cfRNA-Seq Pipeline for Early Cancer Detection From Liquid Biopsy. *The Journal of Liquid Biopsy. Elsevier BV.* 1, pp.100092-100092. ISSN 29501954.
- 11 **Artículo científico.** F.K. Kuderna, Lukas; Ulirsch, Jacob C.; Rashid, Sabrina; et al; Kai How Farh, Kyle; (66/92) Lizano, Esther. 2023. Identification of constrained sequence elements across 239 primate genomes. *Nature* 2023 625:7996. Nature Publishing Group. 625, pp.735-742. ISSN 1476-4687.
- 12 **Artículo científico.** Gao, Hong; Hamp, Tobias; Ede, Jeffrey; et al; Kai How Farh, Kyle; (71/97) Lizano, Esther. 2023. The landscape of tolerated genetic variation in humans and primates. *Science. American Association for the Advancement of Science.* 380. ISSN 10959203.
- 13 **Artículo científico.** Esteller-Cucala, Paula; Palmada-Flores, Marc; F.K. Kuderna, Lukas; et al; Marquès-Bonet, Tomàs; (16/18) Lizano, Esther. 2023. Y chromosome sequence and epigenomic reconstruction across human populations. *Communications Biology* 2023 6:1. Nature Publishing Group. 6, pp.623. ISSN 2399-3642.
- 14 **Artículo científico.** Cabús, Lluc; Lagarde, Julien; Curado, Joao; Lizano, Esther; Pérez-Boza, Jennifer. 2022. Current challenges and best practices for cell-free long RNA biomarker discovery. *Biomarker Research.* 10-1, pp.62-62. ISSN 2050-7771.
- 15 **Artículo científico.** Ferrández-Peral, Luis; Zhan, Xiaoyu; Alvarez-Estape, Marina; et al; Zhang, Guojie. 2022. Transcriptome innovations in primates revealed by single-molecule long-read sequencing. *Genome Research.* 32-8, pp.1448-1462. ISSN 1549-5469.
- 16 **Artículo científico.** Fontserè, Claudia; Kuhlwilm, Martin; Morcillo-Suarez, Carlos; et al; Marques-Bonet, Tomas. 2022. Population dynamics and genetic connectivity in recent chimpanzee history. *Cell Genomics.* 2-6, pp.None-None. ISSN 2666-979X.
- 17 **Artículo científico.** Melin, Amanda D.; Orkin, Joseph D.; Janiak, Mareike C.; et al; Higham, James P.2021. Variation in predicted COVID-19 risk among lemurs and lorises. *American Journal of Primatology.* 83-6, pp.e23255-e23255. ISSN 1098-2345.
- 18 **Artículo científico.** Fontserè, Claudia; Alvarez-Estape, Marina; Lester, Jack; et al; Lizano, Esther. 2021. Maximizing the acquisition of unique reads in noninvasive capture sequencing experiments. *Molecular Ecology Resources.* 21-3, pp.745-761. ISSN 1755-0998.
- 19 **Artículo científico.** Wang, Yifan; Bae, Taejeong; Thorpe, Jeremy; et al; Abyzov, Alexej. 2021. Comprehensive identification of somatic nucleotide variants in human brain tissue. *Genome Biology.* 22-1, pp.92-92. ISSN 1474-760X.
- 20 **Artículo científico.** Orkin, Joseph D.; Montague, Michael J.; Tejada-Martinez, Daniela; et al; Melin, Amanda D.2021. The genomics of ecological flexibility, large brains, and long lives in capuchin monkeys revealed with {fecalFACS}. *Proceedings of the National Academy of Sciences of the United States of America.* 118-7, pp.e2010632118-e2010632118. ISSN 1091-6490.
- 21 **Artículo científico.** Frandsen, Peter; Fontserè, Claudia; Nielsen, Svend Vendelbo; et al; Hvilsom, Christina. 2020. Targeted conservation genetics of the endangered chimpanzee. *Heredity.* 125-1-2, pp.15-27. ISSN 1365-2540.
- 22 **Artículo científico.** de-Dios, Toni; van Dorp, Lucy; Charlier, Philippe; et al; Lalueza-Fox, Carles. 2020. Metagenomic analysis of a blood stain from the French revolutionary Jean-Paul Marat (1743-1793). *Infection, Genetics and Evolution: Journal of Molecular Epidemiology and Evolutionary Genetics in Infectious Diseases.* 80, pp.104209-104209. ISSN 1567-7257.
- 23 **Artículo científico.** Gokhman, David; Nissim-Rafinia, Malka; Agranat-Tamir, Lily; et al; Carmel, Liran. 2020. Differential DNA methylation of vocal and facial anatomy genes in modern humans. *Nature Communications.* 11-1, pp.1189-1189. ISSN 2041-1723.
- 24 **Artículo científico.** Lizano, Esther; Kuderna, Lukas F. K.; Julià, Eva; et al; Marques-Bonet, Tomas. 2019. Selective single molecule sequencing and assembly of a human Y chromosome of African origin. *Nature Communications.* 10-1, pp.4-4. ISSN 2041-1723.

- 25 Artículo científico.** Kuderna, Lukas F. K.; Solís-Moruno, Manuel; Batlle-Masó, Laura; et al; Casals, Ferran. 2019. Flow Sorting Enrichment and Nanopore Sequencing of Chromosome 1 From a Chinese Individual. *Frontiers in Genetics*. 10, pp.1315-1315. ISSN 1664-8021.
- 26 Artículo científico.** Pantano, Lorena; Friedländer, Marc R.; Escaramís, Georgia; Lizano, Esther; Pallarès-Albanell, Joan; Ferrer, Isidre; Estivill, Xavier; Martí, Eulàlia. 2016. Specific small-RNA signatures in the amygdala at premotor and motor stages of Parkinson's disease revealed by deep sequencing analysis. *Bioinformatics (Oxford, England)*. 32-5, pp.673-681. ISSN 1367-4811.
- 27 Artículo científico.** Friedländer, Marc R.; Lizano, Esther; Houben, Anna J. S.; et al; Estivill, Xavier. 2014. Evidence for the biogenesis of more than 1,000 novel human microRNAs. *Genome Biology*. 15-4, pp.R57-R57. ISSN 1474-760X.
- 28 Artículo científico.** Lappalainen, Tuuli; Sammeth, Michael; Friedländer, Marc R.; et al; Dermitzakis, Emmanouil T. 2013. Transcriptome and genome sequencing uncovers functional variation in humans. *Nature*. 501-7468, pp.506-511. ISSN 1476-4687.
- 29 Artículo científico.** Alvarez-Mora, M. I.; Rodriguez-Revenga, L.; Madrigal, I.; et al; Milà, M. 2013. MicroRNA expression profiling in blood from fragile X-associated tremor/ataxia syndrome patients. *Genes, Brain, and Behavior*. 12-6, pp.595-603. ISSN 1601-183X.
- 30 Artículo científico.** Dannemann, Michael; Nickel, Birgit; Lizano, Esther; Burbano, Hernán A.; Kelso, Janet. 2012. Annotation of primate miRNAs by high throughput sequencing of small RNA libraries. *BMC genomics*. 13, pp.116-116. ISSN 1471-2164.
- 31 Artículo científico.** Dannemann, Michael; Prüfer, Kay; Lizano, Esther; Nickel, Birgit; Burbano, Hernán A.; Kelso, Janet. 2012. Transcription factors are targeted by differentially expressed miRNAs in primates. *Genome Biology and Evolution*. 4-4, pp.552-564. ISSN 1759-6653.
- 32 Artículo científico.** Giger, Thomas; Khaitovich, Philipp; Somel, Mehmet; et al; Pääbo, Svante. 2010. Evolution of neuronal and endothelial transcriptomes in primates. *Genome Biology and Evolution*. 2, pp.284-292. ISSN 1759-6653.
- 33 Artículo científico.** Lizano, Esther; Scheibe, Marion; Rammelt, Christiane; Betat, Heike; Mörl, Mario. 2008. A comparative analysis of CCA-adding enzymes from human and *E. coli*: differences in CCA addition and tRNA 3'-end repair. *Biochimie*. 90-5, pp.762-772. ISSN 0300-9084.
- 34 Artículo científico.** Lizano, Esther; Schuster, Jens; Müller, Martin; Kelso, Janet; Mörl, Mario. 2007. A splice variant of the human CCA-adding enzyme with modified activity. *Journal of Molecular Biology*. 366-4, pp.1258-1265. ISSN 0022-2836.

### C.3. Proyectos o líneas de investigación

- 1 Proyecto.** The Cenozoic primates from the Iberian Peninsula and their contribution to the reconstruction of the evolutionary history of the group (PRIMEVOL). CENTRO DE ACUSTICA APLICADA Y EVALUACION NO DESTRUCTIVA. (INSTITUT CATALÀ DE PALEONTOLOGIA). 2021-2024. 411.303.552,11 €.
- 2 Proyecto.** The interplay between epigenomics and nucleotide divergence in recent primate and mammalian evolution (EpiEvolution). (Universidad Pompeu Fabra). 2021-2024.
- 3 Proyecto.** Next generation liquid biopsy with circulating RNA for the early detection of complex diseases. AGENCIA DE GESTIO D'AJUTS UNIVERSITARIS I DE RECERCA. Cabús Fornàs Student. (Universidad Pompeu Fabra). Desde 19/02/2020. 14.400 €.

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

- EP2238259. Method to detect and discriminate cytosine modifications España. 2022. Universidad Pompeu Fabra.