

CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	María de Lourdes
Family name	Moreno Amador
URL Web	https://investigacion.us.es/sisius/sis_showpub.php?idpers=11462
Open Researcher and Contributor ID (ORCID)	0000-0002-7490-2037

A.1. Current position

Position	Associate Professor	
Initial date	24/05/2021	
Institution	University of Seville	
Department/Center	Microbiology and Parasitology	Faculty of Pharmacy
Key words	Celiac disease, immunogenic gluten peptides, food-related pathologies, gastrointestinal disorders, immunology, prenatal stage	

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
01/01/2018-22/07/2020	Assistant Professor Doctor. University of Seville
23/07/2020-23/05/2021	Associate Professor Doctor. University of Seville

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Degree in Pharmacy	Sevilla/Spain	2005
Master's degree in Pharmaceutical Care and Welfare Pharmacy		2005
Expert in Pharmaceutical Specialties and Pharmaceutical Care		2006
Master's degree in Molecular Genetics and Microbial Biotechnology		2008
Doctor of Pharmacy. Doctorate Program in Molecular Biology and Biomedicine (RD. 56/2005)		2010

Part B. CV SUMMARY

My research activity is reflected in a total of **2 six-year periods in research**. I have participated in **20 research projects** (5 regional, 11 national, and 4 international, and PI in 3 of them) and **6 contracts** (Arts. 68/83 LOU) with companies. These projects have resulted in over **50 scientific publications, 14 book chapters** and **2 books**. I have presented more than **60 scientific contributions at national and international conferences**. I have participated in **3 clinical trials** and held **1 internationally extended and licensed patent** in the health sector. Throughout my career, I have received 15 scientific awards and served on the **organizing committees for 3 Congresses, 1 Symposium** and **1 Workshop**.

Over the past ten years, my research has focused on celiac disease (CD), yielding significant advancements in both fundamental and applied aspects. Key achievements include:

1. Evaluation of enzyme treatments for patients on a long-term gluten-free diet.
2. Development of a non-invasive urine biomarker to measure gluten intake, enabling dietary adherence monitoring in celiac patients.
3. Exploration of the prenatal environment to identify potential determinant on the coeliac exposome.

The results of my studies **have been published in leading international journals, including Food Chem (2016), Biosens Bioelectron (2016), Gut (2017) or BMC Medicine (2024)**, reflecting the global impact and scientific rigor of my work. The methods developed for monitoring CD **have been patented and further commercialized** by biomedical companies, including **Biomedal S.L. (Spain)**, which, in 2024, partnered with **Biohit (Finland)** for distribution across Europe. These advancements have led to the development of products like iVYDAL®, now used in hospitals worldwide. The iVYDAL In Vitro Diagnostics® product line includes both professional (IVD) and home-use (GlutenDetect) options, all CE-marked under Directive IVDD 98/79/EC and validated to ISO 13485 standards. These diagnostic and monitoring techniques have been integrated into protocols and clinical guidelines from the Ministry of Health, SEEC (Spain), AGA (USA), and ESPGHAN (Europe), and are now used by

biopharmaceutical companies like Sanofi and Novartis. Additionally, they have been introduced into more than fifty hospitals and European laboratories, including Synlab, Eurofins-Megalab, Echevarne, and Reference Laboratory, as well as the U.S.-based Labcorp. They are sold to hospitals, clinics, pharmacies, and laboratories, reducing the need for biopsies and lowering Health System costs. Additionally, they are being used by **companies like ImmunogenX (USA) for therapeutic development.** These advancements are recognized as key milestones in the study of CD and related conditions, as noted in a recent *Nat Rev Gastroenterol Hepatol* publication.

I have actively contributed to the academic training of undergraduate students in Pharmacy and master's programs across multiple disciplines, with over **1,609.9 hours of teaching experience at the University of Seville. I have supervised two PhD students** to completion, both now in prominent research positions, one with a Margarita Salas program contract and the other has founded the IDI company dedicated to the prevention, diagnosis, and treatment of digestive diseases, with three locations equipped with state-of-the-art technology. **I am currently mentoring a third-year PhD candidate.** Additionally, **I have guided 17 Bachelor's Degree Projects (TFG) and 26 Master's Degree Projects (TFM). I have mentored over 10 undergraduate and graduate students** in Pharmacy since 2006, **supervised students under 2 Collaboration Grants and 2 Research Initiation Grants, and provided mentorship to 6 French students** from the IUT of Biological Engineering at Université de La Rochelle (Francia). Beyond my academic responsibilities, I am committed to engaging with the public and fostering scientific enthusiasm. I collaborate with the Small World Initiative (SWI)-Sevilla: MicroMundo project on antibiotic discovering through crowdsourcing. Additionally, I also play an active role in academic evaluation, reviewing review articles for top journals like *Gastroenterology* and serve on doctoral thesis evaluation committees at the Universities of Sevilla and Córdoba.

I am leading a groundbreaking research line focused on the prenatal environment and its impact on food sensitivities. To support this work, I have secured funding through the prestigious Research Promotion Award from the Spanish Federation of Coeliacs. The first study in this line, published in *BMC Medicine* (2024), has already garnered two scientific awards, positioning my work at the forefront of global research in celiac disease and related food sensitivities.

Part C. RELEVANT MERITS

C.1. Publications

I am the author of **50 scientific publications** (1,204 citations, H-index:18, Scopus, 23/01/2024). Notably, 66.7% of my articles are ranked among the top **25% most cited globally. 10 selected publications.**

1. **Moreno ML.**, González-Rovira M., Martínez-Pancorbo C., et al. (AC: Sousa C). (1/14) 2024. Foetal gluten immunogenic peptides during pregnancy: a new determinant on the coeliac exposome. *BMC Medicine*. 22(1):295. <https://doi.org/10.1186/s12916-024-03495-9>. JCR: 7.10-D1. 1,506 Accesses.
2. Ruiz-Carnicer Á., Segura V., **Moreno ML.**, Coronel-Rodríguez C., Sousa C., Comino I. (3/6) 2024. Transfer of celiac disease-associated immunogenic gluten peptides in breast milk: variability in kinetics of secretion. *Frontiers of Immunology*. 15:1405344. <https://doi.org/10.3389/fimmu.2024.1405344>. JCR: 5.70-Q1. 1,442 Accesses.
3. **Moreno ML.**, Sánchez-Muñoz D., Sousa C. (1/3) 2022. Quality of life in teenagers and adults with coeliac disease: from newly Spanish coeliac disease questionnaire validation to assessment in a population-based study. *Frontiers in Nutrition*. 9:887573. <https://doi.org/10.3389/fnut.2022.887573>. JCR: 5.00-T1. Citations: 5 (Scopus)/5 (Dimensions).
4. **Moreno ML.**, Sánchez-Muñoz D., Sanders D., et al. (AC: Sousa C) (1/5) 2021. Verifying diagnosis of refractory celiac disease with urine gluten immunogenic peptides as biomarker. *Frontiers in Medicine*. 7:601854. <https://doi.org/10.3389/fmed.2020.601854>. JCR: 5.058-T1. Citations: 14 (Scopus)/16 (Dimensions).
5. Ruiz-Carnicer Á., Comino I., Segura V., et al. **Moreno ML.**, (AC: Sousa C) (5/9) 2019. Celiac immunogenic potential of α -Gliadin epitope variants from *Triticum* and *Aegilops* Species. *Nutrients*. 11(2):220. <https://doi.org/10.3390/nu11020220>. JCR: 4.5460-Q1. Citations: 19 (Scopus)/21 (Dimensions). Referenced in 1 patent.
6. **Moreno ML.**, Rodríguez-Herrera A., Sousa C., Comino I. (1/4) 2017. Biomarkers to monitor gluten-free diet compliance in celiac patients. *Nutrients*. 9(1):46. <https://doi.org/10.3390/nu9010046>. JCR: 4.1960-Q1. Citations: 64 (Scopus)/71 (Dimensions).
7. **Moreno ML.**, Cebolla Á., Muñoz-Suano A., et al. (AC: Sousa C). (1/9) 2017. Detection of gluten immunogenic peptides in the urine of patients with coeliac disease reveals transgressions in the gluten-free diet and incomplete mucosal healing. *Gut*. 66 (2), 250-257. [Pag 2 de 4](https://doi.org/10.1136/gutjnl-2015-</div><div data-bbox=)

- [310148](#). JCR: 16.658-D1. Citations: 247 (Scopus)/272 (Dimensions). Referenced in 2 patents and 3 clinical guidelines (AGA, AMG and WGO).
8. Soler M., Estévez MC., **Moreno ML.**, Cebolla A., Lechuga LM. (3/5) 2016. Label-free SPR detection of gluten peptides in urine for non-invasive celiac disease follow-up. *Biosensors and Bioelectronics*. 79:158-64. <https://doi.org/10.1016/j.bios.2015.11.097>. JCR: 7.780-D1. Citations: 61 (Scopus)/67 (Dimensions).
 9. **Moreno ML.**, Muñoz-Suano A., López-Casado MÁ., et al. (AC: Sousa C). (1/6) 2016. Selective capture of most celiac immunogenic peptides from hydrolysed gluten proteins. *Food Chemistry*. 205, 36-42. <https://doi.org/10.1016/j.foodchem.2016.02.066>. JCR: 4.529-D1. Citations: 29 (Scopus)/32 (Dimensions).
 10. Vallejo-Diez S., Bernardo D., **Moreno ML.**, et al. (AC: Arranz E). (3/10) 2013. Detection of specific IgA antibodies against a novel deamidated 8-mer gliadin peptide in blood plasma samples from celiac patients. *PLoS One*. 8(11):e80982. <https://doi.org/10.1371/journal.pone.0080982>. JCR: 3.5340-Q1. Citations: 9 (Scopus)/9 (Dimensions). Referenced in 1 patent.

C.2. Congresses

Relevant oral communications (OC) or invited conference (IC) in national and international congresses.

1. **Moreno ML.**, González-Rovira M., Martínez C., et al. Péptidos inmunogénicos del gluten en el entorno prenatal: un nuevo determinante en el exposoma celíaco. IX Congreso Nacional de la Sociedad Española de Enfermedad celíaca (SEEC). 2024. Bilbao, Spain. **OC**.
2. González-Rovira M., Sainz JA., Martínez C., et al. **Moreno ML.** New insights on microbial dynamics in the fetal environment. I Western Australia Microbiological Meeting. 2024. Perth, Australia. **OC**
3. **Moreno ML.** Patologías relacionadas con el gluten: evidencias científicas actuales. Conferencias impartidas en Congreso. IV Congreso Nacional de Estudiantes de Biociencias (CNEB) y I Congreso Iberoamericano de Estudiantes de Biociencias (CIEBI). 2023. Cáceres, Spain. **IC**.
4. **Moreno ML.** Nutricelipeptidoma del líquido amniótico: estudio de la exposición fetal al gluten y su implicación en el desarrollo de la enfermedad celíaca. III Jornadas de la enfermedad celiaca. 2019. Valladolid, Spain. **IC**.
5. **Moreno ML.** Label-Free Spr Monitoring of Gluten Immunogenic Peptides in urine for CD follow-up. 11 The Ibero-American Congress on Sensors. 2018. Barcelona, Spain. **IC**.
6. **Moreno ML.**, Iehisa J., Comino I., et al. Caracterización de las proteínas inmunotóxicas de la avena mediante genómica funcional y su relación con la enfermedad celiaca. VI Congreso de la Sociedad Española de Enfermedad Celiaca (SEEC). 2018. Cordoba, Spain. **OC**.

C.3. Research projects

1. Estudio del impacto de los péptidos del gluten en fluidos corporales: repercusión en los procesos inflamatorios sistémicos y en la inmunomodulación de la enfermedad celíaca y patologías asociadas. **Proyectos I+D+I (Junta de Andalucía)**. P18-RT-3004. **PI: Moreno ML** and Comino I. 01/01/2020-31/03/2023. 119.652€. **Researcher**.
2. Nuevos métodos de alta precisión para el diagnóstico de intolerancia al gluten (CELISIN). RTC2019-006806-1. **Ministerio de Ciencia e Innovación**. 01/02/2020-30/06/2023. 322.756,5€. **Researcher**.
3. Nutripeptidoma del líquido amniótico y sus implicaciones en las patologías relacionadas con el gluten. US-15332. **Junta de Andalucía (Consejería de Economía y Conocimiento)**. 01/01/2020-30/04/2022. 90.000 €. **Researcher**.
4. Metabolómica del gluten: caracterización y estudio de patrones de péptidos inmunogénicos del gluten excretados en orina de pacientes con patologías relacionadas con el gluten (METAGIP). SAF2017-83700-R. **MINECO**. 01/01/2018-30/09/2021. 144.716 €. **Researcher**.
5. Nutricelipeptidoma del líquido amniótico: estudio de la exposición fetal al gluten y su implicación en el desarrollo de la enfermedad celíaca. SUBN/2019/005. **Subvención Nacional de Apoyo a la investigación. Federación de Asociaciones de Celiacos de España**. **PI: Moreno ML**. 2019. 26.062,00 €. **Researcher**.
6. Métodos rápidos de análisis de péptidos inmunogénicos alimenticios en orina (URINETEST). RTC-2016-5452-1. **MINECO**. 01/09/2016-30/04/2019. 124.350€. **Researcher**.
7. Caracterización de las proteínas inmunotóxicas de la avena mediante análisis inmunológicos: obtención de nuevas variedades no tóxicas para ser consumidas por los enfermos celíacos. P12-AGR-1762. **Junta de Andalucía (Consejería de Innovación, Ciencia y Empresas)**. **PI: Sousa C**. 30/01/2014-01/02/2018. 184.000 €. **Researcher**.

8. Verificación de la adherencia a la dieta sin gluten en orina de pacientes celíacos. **Plan Propio de la Univ. de Sevilla Acciones especiales de internacionalización PP2016-6748. PI: Moreno ML.** 2016. 2.000,00 €.
9. Métodos para la monitorización de los péptidos inmunogénicos del gluten en muestras clínicas y alimenticias. IPT-010000-2010-026. **OPN-INNPACTO.** 21/06/2010-31/12/2012. 156.300€. **Researcher.**
10. Multigenome access technology for industrial catalysts (MGATECH). QLK3-CT-2002 01972. **5º Programa Marco U.E. Commission of the European Communities.** 01/10/2002-31/03/2006. 381.159 €. **Researcher.**

C.4. Contracts, technological or transfer merits.

Contracts

1. Desarrollo de anticuerpos recombinantes de aplicación en el diagnóstico, monitorización y terapia de la enfermedad celíaca. PI: C. Sousa. 15/02/2022-15/03/2024.
2. Desarrollo de métodos analíticos para la determinación de metabolitos de fármacos para el seguimiento de tratamientos (ATHAME). PI: C. Sousa. 10/06/2019- 30/11/2022.
3. Evaluación integral de la adherencia a la dieta y el estado de la mucosa mediante el análisis combinado de péptidos inmunogénicos de gluten (GIP) y calprotectina en muestras de heces de pacientes celíacos (GIPROTEC). PI: C. Sousa. 15/02/2018- 31/12/2019.
4. Test doméstico para la monitorización de la dieta sin gluten (GLUTENDETECT). PI: C. Sousa. 11/12/2017-24/11/2019.
5. Desarrollo e implementación de metodologías para la detección de alérgenos alimentarios y péptidos inmunogénicos mediante Inmunoensayos, PCR y espectrometría de masas (ALERGOTEST). PI: C. Sousa. 25/11/2016-25/11/2019.
6. Desarrollo Experimental de procesos de transformación de biomasa lignocelulósica y otras fuentes de carbono en diversos bioproductos en Andalucía Sostenible-Acrónimo: Bio-Andalus. (1823/0118). PI: C. Sousa. 01/06/2012-31/12/2015.

Patents:

Detección de péptidos del gluten en fluidos humanos. **Moreno ML.,** Sousa C., Rodríguez-Herrera A., Cebolla A. P201400569- PCT/ES2015/070536. Spain. 09/07/2014.

Transfer of technology:

Several products (**iVYDAL In Vitro Diagnostics®**) have been commercialized as a result of my research, significantly advancing the monitoring of celiac disease. These globally adopted products provide cost-effective, non-invasive solutions for the diagnosis and management of celiac disease:

- **iVYCheck GIP Urine (KT-6412, KT-6411):** A non-invasive LFIA (Lateral Flow Immunoassay) test developed for measuring gluten intake and diet adherence through urine analysis in celiac patients.
- **iVYCheck Reader (AP-5856):** A portable reader for real-time monitoring of gluten exposure, providing immediate results to both patients and healthcare professionals, complementing the iVYCheck GIP Urine test.

C.5. Clinical trials

I have participated in **3 national clinical trials**, conducted across different autonomous regions of Spain: LAMICROBIOME (0452-N-22, 2022), QOLCEL (0504-N-19, 2020) and CELIFLUID (2013).

C.6. Awards

I have received **15 scientific awards** (national and international): **1)** Bruker Award 20256; **2)** Best Scientific Publication Award of the Year 2024 in the Faculty of Pharmacy, December 2024; **3)** Best Oral Communication Award, IX SEEC Congress, November 2024; **4)** Best Short Oral Communication Award, LXXXII FEAD Congress, June 2022; **5)** Dr Argüelles Terán Award, December 2019; **6)** FACE Award for Promoting Research 2018, April 2019; **7)** Best Oral Communication Award, VI SEEC Congress, November 2018; **8)** Best Scientific Publication Award of the Year 2017 in the Faculty of Pharmacy, November 2017; **9)** University of Seville Award for Research Works of Special Relevance 2016, March 2017; **10)** SEEC Award for the Best Article Published on Celiac Disease by Young Researchers, January 2017; **11)** Special Mention-Young Award for Scientific Culture, November 2015; **12)** Professor Vicente Callao Foundation Award, January 2015; **13)** Extraordinary Doctorate Award. University of Seville. 2012; **14)** Young FENS Award, 11th European Conference on FENS, October 2011; **15)** 1st International Congress Best Poster Award, September 2007.