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Part A. PERSONAL INFORMATION

CV date 07/09/2023

First name	Clara		
Family name	González de los Reyes-Gavilán		
Gender (*)	Female	Birth date	14/03/1959
Social Security, Passport, ID number	10594470A		
e-mail	greyes_gavilan@ipla.csic.es		
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-9396-6311		

(*) Mandatory

A.1. Current position

Position	Profesora de Investigación		
Initial date	January 1, 2018		
Institution	Consejo Superior de Investigaciones Científicas (CSIC)		
Department/Center	Microbiología y Bioquímica de Productos Lácteos/ IPLA-CSIC		
Country	Spain	Teleph. number	985892131
Key words	<i>Bifidobacterium</i> , intestinal microbiota, probiotics, prebiotics, diet, colorectal cancer, obesity		

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

Period	Position/Institution/Country/Interruption cause
February 6, 2012-March 17, 2016	Director/IPLA-CSIC, Spain
April 30, 2009 –February 5, 2012	Deputy Director/IPLA-CSIC, Spain
November 20, 2006 – April 30, 2009	Head of the Department of Microbiology and Biochemistry of Dairy Products/IPLA-CSIC, Spain
May 25, 2007 –December 31, 2017	Investigadora Científica / IPLA-CSIC, Spain
6 Mayo 1991 - 24 Mayo 2007	Científico Titular/ IPLA-CSIC Spain
January 1990 - April 1991	“Reincorporación a España” postdoctoral FPI fellowship. MEC /IPLA-CSIC, Spain
September 1988 -January 1990	“Perfeccionamiento de doctores y tecnólogos en el extranjero” fellowship. FPI Program (MEC)/ Laboratoire de Microbiologie Laitière. INRA. Jouy-en-Josas (France)
January 1, 1984-December 31, 1987	Predocctoral fellowship FPI (MEC)/(University of Oviedo, Spain)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD Biology	University of Oviedo	1987
Licenciada en Biología	University of Oviedo	1983

Part B. CV SUMMARY (max. 5000 characters, including spaces)

Author/co-author of 186 scientific articles and 19 book chapters. I have an h-index of 57, with 10.489 citations (source:WOS). Principal Investigator of 13 projects/Actions financed by the Spanish System of Science and Technology (9 of them are research projects of the National Plan of Science) as well as 8 Projects/Actions of the Regional Research Plan of the Principality of Asturias, 3 CSIC Actions and 11 contracts with companies. I have participated in various projects at regional, national and European level as well as in contracts with companies led by other researchers. The main milestones of my work were: 1) description and characterization of the first defense restriction-modification system against



bacteriophages in lactic acid bacteria of the species *L. helveticus* 2) First published proteome of bifidobacteria under gastrointestinal stress conditions and characterization of adaptation and response to bile salt stress in the genus *Bifidobacterium* 3) first experimental demonstration of a cross-feeding mechanism between intestinal microorganisms *Bifidobacterium adolescentis* and *Faecalibacterium prausnitzii* 4) demonstration of the prebiotic function of exopolysaccharides produced by intestinal bifidobacteria 5) characterization of the intestinal microbiota of preterm children, the elderly and obese people 6) launch of the research line on the effect of xenobiotics formed during food processing on the intestinal microbiota and its relationship with colorectal cancer and integration of the diet with the gut microbiota in this context. Leader of the Probiotics and Prebiotics group at IPLA-CSIC, integrated in the Diet, Microbiota and Health Group (DIMISA) of the Health Research Institute of the Principality of Asturias (ISPA), an interdisciplinary group bringing together researchers from the University of Oviedo, IPLA-CSIC, HUCA and Cabueñes Hospitals and Primary Care from SESPA. We maintain collaboration with national and international research groups. I was Chair of the 3rd International Symposium on Propionibacteria and Bifidobacteria: Dairy and Probiotic Applications, held in Oviedo from June 1 to 4, 2010. I have participated in numerous contracts with national and foreign companies, highlighting the BIOLACT project with the company Naturebiogas (Blue Zones Biotech) and contracts with the company Lallemand Health Solutions Ltd. I have participated in various outreach activities within the Science Week, Cycle of Scientific Controversies organized by CSIC, Transfer de la Cámara organized by CSIC in collaboration with the Oviedo Chamber of Commerce, and I am the author of around 20 outreach articles in technical magazines, or newspapers. I have supervised 9 Doctoral PhD Theses, of which 5 have received the International Doctorate Mention, and 4 received the Extraordinary Doctorate Award by the University of Oviedo. I am currently supervising two PhD Theses, one of them through an international cotutelle agreement between the University of Oviedo and the University of Monastir (Tunisia). From the 9 doctors that I have trained, 5 are currently staff researchers at IPLA-CSIC (one of them, Dr. Borja Sánchez, is the Counselor of Science and Innovation of the Principality of Asturias), other two passed successfully the exams to access the position of *Científico Titular* at IPLA-CSIC in the last call and another is the Head of the IPLA-CSIC Pilot Plant, after have been working for a few years in the food industry. Since 2014 I am member of the Academic Committee of the Doctorate Program in Chemical, Environmental and Bioalimentary Engineering at the University of Oviedo. Editor of three peer-reviewed journals (Applied and Environmental Microbiology, Frontiers in Nutrition, and Biomed Research International), and Guest editor for several special issues in these and other relevant journals.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications

1. S. Ruiz-Saavedra (AC), C. González del-Rey, A. Suárez,**C. G. de los Reyes-Gavilán** S. González (9/10). 2023. Associations of dietary factors and xenobiotics intake with faecal microbiota composition according to the presence of intestinal mucosa damage. *Food & Function* (accepted)
2. N. Salazar, M. Ponce-Alonso, M. Garriga.....**C. G. de los Reyes-Gavilán**(AC), R. del Campo(AC)(13/14). 2022. Fecal metabolome and bacterial composition in severe obesity: impact of diet and bariatric surgery. *Gut Microbes* 14(1) art. e2106102.
3. S. Ruiz-Saavedra, A. Zapico, C. González del Rey, C. González, A. Suárez, Y. Diaz-Solís, **C. G. de los Reyes-Gavilán**(AC), Sonia González(AC). 2022. Dietary xenobiotic derived from food processing: association with faecal mutagenicity and gut mucosal damage. *Nutrients* 14, art. 3482.
4. Zapico, S. Arbolea, S. Ruiz-Saavedra.....**C. G. de los Reyes-Gavilán**(AC), S. González(AC) (8/9). 2022. Dietary xenobiotics, (poly)phenols and fibers: exploring associations with gut microbiota in socially vulnerable individuals. *Frontiers in Nutrition* 9 art. 1000829.
5. S. Ruiz-Saavedra, H. García-González, S. Arbolea.....**C.G. de los Reyes-Gavilán**(AC) (9/9). 2021. Intestinal microbiota alterations by dietary exposure to chemicals from food cooking and processing. Application of Data Science for risk prediction. *Computational and Structural Biotechnology Journal* 19: 1081-1091.
6. M. Nogacka, **C. G. de los Reyes-Gavilán**, C. Martínez-FaedoN. Salazar(AC)(2/11). 2021. Impact of extreme obesity and diet-induced weight loss on the fecal metabolome and gut microbiota. *Molecular Nutrition and Food Research* 65 art. e2000030.



7. A. M Nogacka, S. Arboleya, N. Nikpoor**C. G. de los Reyes-Gavilán**(AC) (11/11). 2021. Influence of 2'-fucosyllactose on the microbiota composition and metabolic activity of fecal cultures from breastfed and formula-fed infants at two months of age. *Microorganisms* 9 art. 1478.
8. D. Rios-Covian(AC), S. Gonzalez-Solares, A. M. Nogacka, S. Arboleya, N. Salazar, M. Gueimonde, **C. G. de los Reyes-Gavilán**. 2020. An overview on fecal branched short chain fatty acids along human life and as related with body mass index: dietary and anthropometric factors associated. *Frontiers in Microbiology* 11 art. 973.
9. M. Nogacka, M. Gómez-Martín, A. Suárez, O. González-Bernardo, **C. G. de los Reyes-Gavilán**(AC), S. González(AC). 2019. Xenobiotics formed during food processing: their relation with the intestinal microbiota and colorectal cancer. *International Journal of Molecular Sciences* 20 art. 51.
10. D. Rios-Covián, N. Salazar, M. Gueimonde, **C. G. de los Reyes-Gavilán**(AC). 2017. Shaping the metabolism of intestinal *Bacteroides* population through diet to improve human health. *Frontiers in Microbiology* 8 art. 376.

C.2. Congress* Author presenting communication/conference

1. S. Ruiz Saavedra *, C. González Del Rey, A. Suárez, Y. Díaz, A. Zapico, **C.G. de Los Reyes-Gavilán**, S. González. Impact of xenobiotics derived from food processing and colorectal cancer risk. Oral Communication (Award to the "Best Oral Presentation"). 3rd International Conference of Food Bioactives and Health (<https://www.fbhc2020.com/Web/39/Scientific-Programme.aspx>). Publication: BHC 2022 ABSTRACT BOOK. Parma, Italy. June 21-24, 2022.
2. **C. G. de los Reyes-Gavilán***, S. González, N. Salazar, M. Gueimonde. Can nutritional strategies improve the microbiome and health status at the advanced age?. Invited conference. Food for Healthy Ageing: maintaining health throughout the lifespan. Published: book of abstracts. Amsterdam, (Hotel Casa Amsterdam), The Netherlands. October 23-25, 2017.
3. **C. G. de los Reyes-Gavilán***, D. Rios-Covian, N. Salazar, M. Gueimonde. *Bacteroides fragilis*. Invited conference. Probiotics, Prebiotics and New Foods, Nutraceuticals and Botanicals: for nutrition, and human and microbiota health. Publication: Book of Abstracts (<http://www.probiotics-prebiotics-newfood.com/media/programme.pdf>). Università Urbaniana, Rome, Italy. September 10-12, 2017.
4. **C. G. de los Reyes-Gavilán***, N. Salazar, M. GueimondeP. Ruas-Madiedo(1/14). Exopolysaccharides produced by bifidobacteria and putative functionality in the gastrointestinal ecosystem. Invited conference. Microbial Polysaccharides of Medical, Agricultural and Industrial Importance. FASEB (Federation of American Societies of Experimental Biology) Summer Research Conferences. Publication: book of abstracts. Carefree, Arizona, USA. June 5-10, 2011.
5. **C. G. de los Reyes-Gavilán***, N: Salazar, S. Arboleya.....M. Gueimonde. Probióticos y Microbiota Intestinal. De dónde venimos y a dónde vamos. Invited Conference. XIX Congreso Nacional de Microbiología de los Alimentos. Publicación: libro de resúmenes del congreso. Zaragoza, Spain. September 24-26, 2014.
6. **C. G. de los Reyes-Gavilán***. Efectos terapéuticos de los probióticos. Interacción probiótico-huésped. Invited conference. XLII Congreso Nacional de Empresas Farmacéuticas. Publication: book of abstracts. Cancún, México. October 18-22, 2009.
7. **C. G. de los Reyes-Gavilán***, P. Ruas-Madiedo, A. Margolles, L. Noriega, B. Sánchez. Effect of the acquired resistance to bile salts on enzymatic activities involved in the utilisation of carbohydrates by bifidobacteria. Invited conference. 1st International Symposium on propionibacteria and bifidobacteria: dairy and probiotic applications. Publication: book of abstracts, special issue in the journal *Le Lait*. Saint-Malo, France. June 2004.

C.3. Research projects

1. Personalized strategies target to intestinal microbiota modulation based on the reduction of toxic compounds derived from diet. Funding Entity: Ministerio de Ciencia, Innovación y Universidades. Reference: PID2022-140410OB-I00. Duration: 2023-2025. Funding: 225.000 euros. IPs: Sonia González Solares (IP1)/**Clara González de los Reyes-Gavilán** (IPLA-CSIC) (IP2).



2. Grupo Microbiota Humana, Alimentación y Salud. Ayudas a organismos públicos para apoyar las actividades de I+D+I de sus grupos de investigación. Funding Entity: Plan Regional de Investigación del Principado de Asturias (cofinanciado con fondos FEDER). Referencia: AYUD/2021/50981. Duration: 2021-2023. Funding: 208,800 euros. Coordinator: **Clara González de los Reyes-Gavilán** (IPLA-CSIC).
3. Effect of diet and exposure to xenobiotics generated during food processing on the genotoxic/cytotoxic capacity of the intestinal microbiota (MIXED). Funding Entity: Ministerio de Ciencia, Innovación y Universidades. Reference: RTI2018-098288-B-I00. Duration: January 2019-December 2022. Funding: 242,726. IPs: **Clara González de los Reyes-Gavilán** (IPLA-CSIC) (IP1) / Sonia González Solares (IP2).
4. Contribution to the study of the role of *Lactobacillus* species associated to the intestinal microbiota of children diagnosed with autism spectrum disorder (ASD) in Tunisia. Reference: COOPA20229. Funding Entity: CSIC, projects i-COOP+ (call 2018). Duration: April 2019-December 2021. Funding: 27,400 euros. IP: **Clara González de los Reyes-Gavilán**.
5. Grupo Microbiota Humana, Alimentación y Salud. Ayudas a Grupos de Investigación que desarrollen su actividad en el Principado de Asturias. Funding Entity: Plan Regional de Investigación del Principado de Asturias (cofinanced by FEDER funds). Reference: GRUPIN14-043. Duration: January 2014-December 2017. Funding: 206,400 euros. Coordinator: **Clara González de los Reyes-Gavilán**.
6. Impact of early life diet on microbiome development & later health (JPI HDHL Microbiomics). Reference: PCIN-2015-233. Funding Agency: Programa Estatal de I+D+I Orientada a los Retos de la Sociedad 2015-2, Convocatoria de Acciones de Programación Conjunta Internacionales. Duration: January 1, 2016-December 31, 2018. Funding: 108,000 euros. IP and coordinator: Miguel Gueimonde Fernández. Participation: Researcher.
7. Modelos de interacción microbiota-hospedador en el entorno intestinal y su aplicación en el desarrollo de productos probióticos y prebióticos. Reference: AGL2013-43770-R. Funding Entity: Plan Estatal de Investigación. MINECO. Duration: 2014-2016. Funding: 205,700 euros. IPs: Miguel Gueimonde Fernández (IP1) / **Clara González de los Reyes-Gavilán** (IP2).
8. Mecanismos de interacción entre bifidobacterias y sus exopolisacáridos con poblaciones microbianas intestinales humanas. Reference: AGL2010-16525. Funding Entity: Plan Nacional de Investigación. MICINN. Duration: January 2011-December 2013. Funding: 130,000 euros. IP: **Clara González de los Reyes-Gavilán**.
9. Bacterias probióticas para productos lácteos funcionales: nuevos aspectos de interés vinculados al mejoramiento de su valor probiótico y resistencia biológica. Reference: 2005AR0047. Funding Entity: CSIC-CONICET (Argentina). Duration: January 2006-December 2007. Funding: 5,370 euros. IPs: **Clara González de los Reyes-Gavilán** (CSIC) / Jorge Alberto Reinheimer (CONICET).

C.4. Contracts, technological or transfer merits

1. Technological support contract: Análisis de descartes de la industria láctea in the frame of the project BIOLACT. Company: Blue Zones Biotech SL. Reference CSIC: 227647. Duration: Octubre 4 2021-August 31, 2021. IP: **Clara González de los Reyes-Gavilán**. Funding : 56.014,53 euros.
2. Technological support contract: Influence of the probiotic strains *Bifidobacterium bifidum* Rosell®-71 and *Bacteroides uniformis* CECT 7771 on the metabolic activity and composition of the fecal microbiota of slow and fast 2'-fucosyllactose degrader infants fed formula milk at 2 months of age. Company: Lallemand Health Solutions, Inc. (Canadá). Reference CSIC: 220016. Duration: March 8, 2021-March 7, 2022. IP: **Clara González de los Reyes-Gavilán**. Funding: 11.728 euros.
3. Technological support contract: Influence of the probiotic mixture Probiokid and human milk oligosaccharides on the metabolic activity and composition of the fecal microbiota of infants from 1 to 3 months. Company: Lallemand Health Solutions, Inc. (Canadá). Reference CSIC: 201266. Duration: September 16, 2019-December 15, 2020. IP: **Clara González de los Reyes-Gavilán**. Funding: 25.700 euros.