CV Date	29/02/2024

Part A. PERSONAL INFORMATION

First Name *	Laura		
Family Name *	Senovilla		
Sex *	Not Specified	Date of Birth *	
ID number Social Security, Passport *		Phone Number *	
URL Web	http://www.ibgm.med.uva.es/investigacion/fisiologia-celular-y-molecular/estres-celular-e-inmunovigilancia/		
Email Address			
Researcher's identification number	Open Researcher and Contributor ID (ORCID) *	0000-0001-6887-2436	
	Researcher ID	AAX-5599-2021	
	Scopus Author ID	7801523764	

* Mandatory

A.1. Current position

Job Title	Senior Researcher of Excellence (Beatriz Galindo Programme)		
Starting date	2021		
Institution	Universidad de Valladolid		
Department / Centre	Instituto de Biología y Genética Molecular / Instituto de Biología y Genética Molecular		
Country	Spain	Phone Number	(+34) 983184804
Keywords	320101 - Cancerology		

A.2. Previous positions

Period	Job Title / Name of Employer / Country
2013 - 2014	Research Engineer / Institut Gustave Roussy
2011 - 2012	Postdoctoral Fellow / INSERM
2009 - 2011	Postdoctoral Fellow / Paris Sud XI University
2007 - 2009	Postdoctoral Researcher / INSERM
2006 - 2006	PhD student / Instituto de Biología y Genética Molecular
2002 - 2006	PhD student / Ministerio de Ciencia e Innovación

A.3. Education

Degree/Master/PhD	University / Country	Year
Habilitation à diriger des recherches (Acreditación de Cátedra)	Université de Paris-Saclay	2020
Doctor by Universidad de Valladolid	Universidad de Valladolid / Spain	2006
DEA in Biotechnology: Biomedical Applications	Universidad de Valladolid	2004
Licenciado en Biología Rama Biología Molecular	Universidad SEK / Spain	2002

Part B. CV SUMMARY

My scientific work has been focused on endocrine physiology during my thesis and on cancer from my postdoctoral studies to the present (more than 15 years). The studies performed during my thesis at the University of Valladolid contributed significantly to the knowledge of endocrine physiology by **fully characterizing for the first time** the anterior pituitary cell populations. This made it possible to describe **the multifunctional adenohypophyseal cells**, as well as their modulation in physiological and pathophysiological situations. The plasticity of these

multifunctional cells explains the adaptation of the organism to different physiological situations. And their presence in human adenohypophyseal tumors explains the characteristic paradoxical secretion in these patients. Attracted by the study carried out on human adenohypophyseal tumor samples, I decided to continue my studies in the field of cancer. Over the past 15 years, my work has contributed to expanding knowledge in cancer treatment resistance, cancer immunology, and cancer development. Specifically, we have identified a **synergistic effect of vitamin B6 and cisplatin** in the treatment of colon cancer. Moreover, **this effect depends somewhat on the stimulation of the immune system** to eliminate colon cancer cells. On the other hand, **I have been the first to describe the control exerted by the immune system on tumor cell ploidy**. In particular, the immune system is capable of recognizing and eliminating tetraploid (double DNA-containing) tumor cells. However, cells that escape this immune system control are those that have lost DNA content, giving rise to aneuploid cells characteristic of aggressive cancers. Recently, **I have led a work describing how cells deficient in** Bax and Bak (**proapoptotic proteins** whose absence confers resistance to cell death) **paradoxically are not capable of proliferate after tetraploidy induction**.

All the works carried out in relation to these 4 axes have been published in a total of 102 indexed scientific articles (91% in Q1). They have been cited over 14000 times and I have an H-index of 57 (Google Schoolar). The quality of these works has allowed me to be awarded two scientific prizes (Extraordinary doctorate award and Prix Institut Necker – Fondation Tourre) and the R3 accreditation. I have obtained 4 research projects as IP or Co-IP (Total 930000€), two of them in 2022. I have participated in national conferences (SEBBM) and international conferences (Keystone Conference) to disseminate my work, as well as in informative talks. In 2014 I obtained a tenured position as a Scientist at the INSERM in France. Since 2021, this position is on leave of absence (but with double affiliation) to occupy a distinguished researcher position at the University of Valladolid. Until that time, I had supervised the work of two postdoctoral researchers, two thesis students and five master's students in France. Currently, I am the Principal Investigator of the Cellular Stress and Immunosurveillance (CSI) Group at the Instituto de Biomedicina y Genética Molecular (Universidad de Valladolid), which is composed of three researchers (Dr. Omar Motiño, Dra. Lucía González-Gutiérrez and Dr. Roberto Palacios Ramírez), two PhD students (Daniel Barriuso Palacios and Lucía Álvarez Frutos), two Master Students (Juan de la Puente Aldea, Sara de Santos de Pablo), two undergraduate students (Ángel Ugarte and Pablo Miñambres), and one technician (Sandra Güemes).

Finally, I'm Associate Editor at the Editorial Board of Cancer Immunity and Immunotherapy (specialty section of Frontiers in Immunology and Frontiers in Oncology). I have participated in the evaluation of projects for the INCa and AEI, as well as evaluation of personnel for the AECC. Finally I have formed (and I form) part of thesis juries. I also carry out teaching activities for both degree and master's degrees or doctorate courses (120 h/year).

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Publications

AC: corresponding author. (nº x / nº y): position / total authors. If applicable, indicate the number of citations

1 **Scientific paper**. Deng J; Gutiérrez LG; Stoll G; et al; (17/17) Senovilla L (AC). 2021. Paradoxical implication of BAX/BAK in the persistence of tetraploid cells.Cell Death & Disease.
2 **Scientific paper**. Aranda F; Chaba K; Bloy N; et al; (10/10) Senovilla L (AC). 2018. Immune effectors responsible for the elimination of hyperploid cancer cells.Oncoimmunology. SCOPUS (6)
3 **Scientific paper**. N Bloy; A Sauvat; K Chaba; et al; (10/10) L Senovilla (AC). 2015. Morphometric analysis of immunoselection against hyperploid cancer cells. Oncotarget. IMPACT JOURNALS LLC. 6-38, pp.41204-41215. SCOPUS (11)

4 **Scientific paper**. F Aranda; N Bloy; J Pesquet; et al; (14/14) L Senovilla (AC). 2015. Immune-dependent antineoplastic effects of cisplatin plus pyridoxine in non-small-cell lung cancer. Oncogene. NATURE PUBLISHING GROUP. 34-23, pp.3053-3062. SCOPUS (51)
5 **Review**. G Kroemer; (2/5) L Senovilla; L Galluzzi; F André; L Zitvogel. 2015. Natural and therapy-induced immunosurveillance in breast cancer. Nature Medicine. NATURE PUBLISHING GROUP. 21-10, pp.1128-1138. SCOPUS (185)
6 **Review**. F Aranda; N Bloy; L Galluzzi; G Kroemer; (5/5) L Senovilla (AC). 2014. Vitamin B6 improves the immunogenicity of cisplatin-induced cell death. Oncoimmunology. TAYLOR & FRANCIS INC. 3-9, pp.e955685. WOS (1)
7 **Review**. (1/4) L Senovilla; F Aranda; L Galluzzi; G Kroemer. 2014. Impact of myeloid cells on the efficacy of anticancer chemotherapy. Curr Opin Immunol. Science Direct. 30, pp.24-31. WOS (15)
8 **Scientific paper**. Omar Motiño; Flavia Lambertucci; Gerasimos Anagnostopoulos; et al; Guido Kroemer. 2022. ACBP/DBI protein neutralization confers autophagy-dependent organ protection through inhibition of cell loss, inflammation, and fibrosis. Proc Natl Acad Sci U S A. 119-41, pp.e2207344119.
9 **Scientific paper**. Deng J; Tian AL; Pan H; et al; Keep O; (12/15) Senovilla L. 2021. Everolimus and plicamycin specifically target chemo-resistant colorectal cancer cells of the CMS4 subtype. Cell Death & Disease.
10 **Scientific paper**. Buqué A; Bloy N; Perez-Lanzón M; et al; Galluzzi L; (15/30) Senovilla L. 2020. Immunoprophylactic and immunotherapeutic control of hormone receptor-positive breast cancer. Nat Commun. SCOPUS (28)
11 **Scientific paper**. Tripathi R; Modur V; (3/5) Senovilla L; Kroemer G; Komurov K. 2019. Suppression of tumor antigen presentation during aneuploid tumor evolution con-tributes to immune evasion.Oncoimmunology. SCOPUS (12)
12 **Scientific paper**. Xie W; Forveille S; Iribarren K; et al; Kepp O; (5/12) Senovilla L. 2019. Lurbinectedin synergizes with immune checkpoint blockade to generate anticancer immunity. Oncoimmunology. SCOPUS (17)
13 **Scientific paper**. Liu P; Zhao L; Pol J; et al; Kroemer G; (11/34) Senovilla L. 2019. Crizotinib-induced immunogenic cell death in non-small cell lung cancer.Nat Commun. SCOPUS (78)
14 **Scientific paper**. Bezu L; Sauvat A; Humeau J; et al; Kroemer G; (11/13) Senovilla L. 2018. eIF2α phosphorylation is pathognomonic for immunogenic cell death. Cell Death Differ. SCOPUS (74)
15 **Scientific paper**. Bloy N; Garcia P; Laumont CM; et al; Kroemer G; (22/23) Senovilla L (AC). 2017. Immunogenic stress and death of cancer cells: Contribution of antigenicity vs adju-vanticity to immunosurveillance.Immunol Rev. SCOPUS (48)
16 **Scientific paper**. Semeraro M; Adam J; Stoll G; et al; Kroemer G; (8/18) Senovilla L. 2016. The ratio of CD8+/FOXP3 T lymphocytes infiltrating breast tissues predicts the re-lapse of ductal carcinoma in situ. Oncoimmunology. SCOPUS (37)
17 **Scientific paper**. F Pietrocola*; J Pol*; E Vacchelli; et al; G Kroemer; (11/30) L Senovilla. 2016. Caloric Restriction Mimetics Enhance Anticancer Immunosurveillance. Cancer Cell. Elsevier Inc.. 30-1, pp.147-160. SCOPUS (246)
18 **Scientific paper**. S Ladoire*; D Enot*; (3/16) L Senovilla; et al; G Kroemer. 2016. The presence of LC3B puncta and HMGB1 expression in malignant cells correlate with the immune infiltrate in breast cancer. Autophagy. Taylor & Francis. 12-5, pp.864-875. SCOPUS (68)
19 **Scientific paper**. S Ladoire*; (2/12) L Senovilla*; D Enot*; et al; G Kroemer. 2016. Biomarkers of immunogenic stress in metastases from melanoma patients: Correlations with the immune infiltrate. Oncoimmunology. Taylor & Francis. 5-6, pp.e1160193. SCOPUS (10)
20 **Scientific paper**. H Zhou; S Forveille; A Sauvat; et al; G Kroemer; (5/14) L Senovilla. 2016. The oncolytic peptide LTX-315 triggers immunogenic cell death. Cell Death Disease. NATURE PUBLISHING GROUP. 7, pp.e2134. SCOPUS (52)

21 **Scientific paper**. S Ladoire*; F Penault-Llorca*; (3/20) L Senovilla; et al; G Kroemer. 2015. Combined evaluation of LC3B puncta and HMGB1 expression predicts residual risk of relapse after adjuvant chemotherapy in breast cancer. Autophagy. TAYLOR & FRANCIS INC. 11-10, pp.1978-1890. WOS (14)

22 **Scientific paper**. AQ Sukkurwala; S Adjemian; (3/11) L Senovilla; et al; G Kroemer. 2014. Screening of novel immunogenic cell death inducers within the NCI Mechanistic Diversity Set. Oncoimmunology. Taylor & Francis. 3:e28473. WOS (16)

23 **Scientific paper**. G Mariño; F Pietrocola; T Eisenberg; et al; G Kroemer; (18/31) C Bauvy. 2014. Regulation of autophagy by cytosolic acetyl-coenzyme A. Molecular Cell. Elsevier Inc.. 53-5, pp.710-725. WOS (74)

24 **Scientific paper**. D Lissa; (2/15) L Senovilla; S Rello-Varona; et al; G Kroemer. 2014. Resveratrol and aspirin eliminate tetraploid cells for anticancer chemoprevention. Proc Natl Acad Sci U S A. 111-8, pp.3020-3025. WOS (17)

25 **Scientific paper**. AQ Sukkurwala; I Martins; Y Wang; et al; G Kroemer; (8/18) L Senovilla. 2014. Immunogenic calreticulin exposure occurs through a phylogenetically conserved stress pathway involving the chemokine CXCL8.Cell Death & Differentiation. Nature Publishing Group. 21-1, pp.59-68. WOS (8)

26 **Scientific paper**. F Pietrocola; SA Malik; G Mariño; et al; G Kroemer; (5/10) L Senovilla. 2014. Coffee induces autophagy in vivo.Cell cycle. 13-12, pp.1987-1994. WOS (5)

27 **Book chapter**. Bravo-San Pedro JM; Kepp O; Sauvat A; Rello-Varona S; Kroemer G; (6/6) Senovilla L (AC). 2021. Clonogenic Assays to Detect Cell Fate in Mitotic Catastrophe. Methods Mol Biol.

28 **Book chapter**. Liu P; Zhao L; (3/5) Senovilla L; Kepp O; Kroemer G. 2021. In Vivo Imaging of Orthotopic Lung Cancer Models in Mice. Methods Mol Biol.

29 **Book chapter**. Humeau J; Bezu L; Kepp O; (4/6) Senovilla L; Liu P; Kroemer G. 2021. Quantification of eIF2α Phosphorylation Associated with Mitotic Catastrophe by Immunofluorescence Microscopy. Methods Mol Biol.

30 **Book chapter**. (1/5) L Senovilla* (AC); Y Demont*; J Humeau; N Bloy; G Kroemer. 2017. Image Cytofluorometry for the Quantification of Ploidy and Endoplasmic Reticulum Stress in Cancer Cells.Methods in Molecular Biology. Springer. 1524, pp.53-64. SCOPUS (7)

31 **Review**. Lucia; Daniel; Mercedes; Mar; Guido; Roberto; Laura. 2023. Multiomics insights on the onset, progression, and metastatic evolution of breast cancer. Frontiers in Oncology. 13, pp.1292046.

32 **Review**. Daniel Barriuso; Lucia Alvarez Frutos; Lucia Gonzalez Gutierrez; Omar Motino; Guido Kroemer; Roberto Palacios Ramirez; Laura Senovilla. 2023. Involvement of Bcl-2 Family Proteins in Tetraploidization-Related Senescence. International Journal of Molecular Science. MDPI. 24-7, pp.6374.

33 **Review**. Humeau J; Bravo-San Pedro JM; Vitale I; Nuñez L; Villalobos C; Kroemer G; (7/7) Senovilla L (AC). 2018. Calcium signaling and cell cycle: Progression or death.Cell Calcium. SCOPUS (83)

34 **Review**. S Ladoire; D Enot; (3/6) L Senovilla; M Chaix; L Zitvogel; G Kroemer. 2016. Positive impact of autophagy in human breast cancer cells on local immunosurveillance.Oncoimmunology. Taylor & Francis. 5-6, pp.e1174801. SCOPUS (8)

35 **Review**. O Kepp; M Semeraro; JM Bravo-San Pedro; et al; L Galluzzi; (8/10) L Senovilla. 2015. eIF2? phosphorylation as a biomarker of immunogenic cell death. Semin Cancer Biol.ACADEMIC PRESS LTD- ELSEVIER SCIENCE LTD. 33, pp.86-92. SCOPUS (69)

36 **Review**. L Galluzzi; E Vacchelli; JM Bravo-San Pedro; et al; G Kroemer; (5/88) L Senovilla. 2014. Classification of current anticancer immunotherapies. Oncotarget. IMPACT JOURNALS LLC. 5-24, pp.12472-12508. WOS (70)

37 **Review**. O Kepp; (2/83) L Senovilla; I Vitale; et al; L Galluzzi. 2014. Consensus guidelines for the detection of immunogenic cell death.Oncoimmunology. TAYLOR & FRANCIS INC. 3-9, pp.e955691. WOS (83)

38 **Review**. O Kepp; (2/3) L Senovilla; G Kroemer. 2014. Immunogenic cell death inducers as anticancer agents. Oncotarget. IMPACT JOURNALS LLC. 5-14, pp.5190-5191. WOS (12)

C.2. Conferences and meetings

1 Laura Senovilla. Implication of pro-apoptotic proteins of the Bcl2 family in the persistence of tetraploid cells. 44º Congreso Nacional de la Sociedad Española de Bioquímica y Biología Molecular (SEBBM). SEBBM. 2022. Spain. Participatory - invited/keynote talk. Conference.
2 Laura Senovilla. Paradoxical Implication of BAX / BAK in cancer. Onco-Immunology Conference Day. Learn to Win, AAS & Sfax University. 2022. Tunisia. Participatory - invited/keynote talk. Conference.
3 N Bloy; L Senovilla. Morphometric analysis of immunoselection against hyperploid cancer cells. Keystone Symposia Conference. Cancer Vaccines: Targeting Cancer Genes for Immunotherapy. 2016. Canada.

C.3. Research projects and contracts

1 **Project**. Extracellular HSP110 pour une approche théranostique du cancer colorectal: rôle des exosomes et design de drogues immunothérapeutiques. INCa. Carmen Garrido. (INSERM). 01/01/2023-31/12/2026. 662.904 €. Co-IP.
2 **Project**. Role of proapoptotic proteins BAX and BAK in atypical teratoid rhabdoid tumors. Ministerio de Ciencia e Innovación. Laura Senovilla. (Universidad de Valladolid). 01/09/2022-31/08/2026. 181.500 €. Principal investigator.
3 **Project**. Colon cancer heterogeneity measured at single cell level (COCAHEMSICLE). INSERM. PL Puig. (Centre de Recherche des Cordeliers). 2019-2022. 584.820 €. Management of the project.
4 **Project**. Novel roles of the unfolded protein response (UPR) in cancer. Programme de coopération ECOS-Chili. G Kroemer. (Centre de Recherche des Cordeliers). 2017-2021. Management of the project.
5 **Project**. Determination of the molecular and cellular factors involved in the immunogenicity of cancer. Fondation ARC pour la recherche sur le cancer. L Senovilla. (Centre de Recherche des Cordeliers). 01/01/2016-31/12/2017. 50.000 €. Principal investigator.
6 **Project**. Determination of the molecular and cellular factors involved in the immunogenicity of cancer polyploidy.. INSERM. L Senovilla. (Centre de Recherche des Cordeliers). 01/01/2015-31/12/2016. 40.000 €. Principal investigator.

C.5. Stays in public or private R&D centres

1 Institut Gustave Roussy. Institut Gustave Roussy. France. Villejuif. 03/01/2013-31/10/2014. 1 year - 10 months. Contracted.
2 INSERM. Institut Gustave Roussy. France. Villejuif. 01/06/2011-31/12/2012. 1 year - 7 months. Contracted.
3 Université Paris Sud XI. Institut Gustave Roussy. France. Villejuif. 01/06/2009-31/05/2011. 2 years. Post-doctoral.
4 INSERM. Institut Gustave Roussy. France. Villejuif. 01/02/2007-31/05/2009. 2 years - 4 months. Post-doctoral.
5 Universidad de Valladolid. Instituto de Biología y Genética Molecular. Spain. Valladolid. 01/07/2002-31/01/2007. 4 years - 7 months. Doctorate.
6 Katholieke Universiteit Leuven. School of Medicine. Belgium. Leuven. 04/2005-06/2005. 2 months. Doctorate.
7 University of Liverpool. Department of Physiology. United Kingdom. Liverpool. 07/2003-09/2003. 2 months. Doctorate.
8 Universidad de Valladolid. Instituto de Biología y Genética Molecular. Spain. Valladolid. 01/07/2001-28/02/2002. 8 months. Internship student.
9 Universidad de Valladolid. Instituto de Biología y Genética Molecular. Spain. Valladolid. From 01/03/2021. 8 months. Contracted.
10 INSERM. Centre de Recherche des Cordeliers. France. Paris. From 01/11/2014. 7 years. Scientist Tenure Position.