CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	Federico		
Family name	Lucantoni		
Gender (*)	Male	Birth date (dd/mm/yyyy)	25/06/1987
Social Security, Passport, ID number			
e-mail	flucantoni@cipf.es	URL Web: https://www.cipf.es/science/research/cancer/cellular-stress-and-cell-death-pathways	
Open Researcher and Contributor ID (ORCID) (*)		0000-0001-5173-7836	

(*) Mandatory

A.1. Current position

Position	Ramon y Cajal fellow		
Initial date	01/01/2023		
Institution	Centro de Investigación Príncipe Felipe (CIPF)		
Department/Center	Cancer Program		
Country	Spain	Teleph. number	
Key words	Cell death, Entosis, Cell-in-cell, BCL2 proteins, microscopy, Cancer		

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

Period	Position/Institution/Country/Interruption cause
12/2021-12/2022	AECC postdoctoral researcher/Spain/CIPF
09/2019-11/2021	APOSTD Postdoctoral researcher/FISABIO-Universitat de Valencia/Spain
03/2019-07/2019	Postdoctoral researcher/INCLIVA-Universitat de Valencia/Spain
08/2017-08/2018	Postdoctoral researcher/Royal College of Surgeons in Ireland – Centre for Systems Medicine/Ireland
09/2013-07/2017	PhD student/Royal College of Surgeons in Ireland – Centre for Systems Medicine/Ireland
03/2013-07/2013	Research technician/CIPF/Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Oncology	National University of Ireland – Royal College of Surgeons in Ireland	2017
Master's degree in Cell and Molecular Boiology	Università degli Studi di Roma "Tor Vergata"	2012
Bachelors's degree in Cell and Molecular Boiology	Università degli Studi di Roma "Tor Vergata"	2010

(Include all the necessary rows)

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

I have successfully completed a PhD and Postdoc, funded by the Irish Cancer Society Collaborative Cancer Research Centre BREAST-PREDICT, in the dept. of Physiology and Medical Physics (Royal College of Surgeons in Ireland - RCSI) and Centre for Systems Medicine, under the supervision of prof. Jochen Prehn. My work focused on combining dynamic-mathematical modelling, "omics" techniques and imaging approaches to address cell death resistance and metabolism adaptation of triple negative breast cancer. I have substantially contributed to the cell death and bioenergetics fields with several important findings. Considering my PhD and Postdoc time combined in RCSI, my work led to 7 publications of which 5 were first author papers in highly relevant journals (three Q1 and one D1). We were among the first groups in describing that BCL2 proteins inhibitors inhibit mitochondrial metabolism (published in Oncotarget and with a total of 30 citations to date), mitochondrial dynamics (BBA Molecular Cell Research), and that BCL2 and BCL(X)L protein overexpression contribute to metabolic resistance in breast cancer (Cell Death and Differentiation). We were also the first group in successfully implement biological data on BCL2 protein interaction network in a mathematical model, which is able to predict chemotherapy outcome in breast cancer. This work, published in Cell Death and Disease, accumulated a total of 26 citations and was highlighted with an interview from RTE Ireland (the National TV news program), during the evening–time news, and spotlighted in several newspaper articles to the public.

My time in Ireland allowed me to obtain relevant skills in high-end fields such as mathematical biology, live cell imaging and advanced imaging quantification techniques and to establish important international collaboration with Prof. Jochen Prehn, an international authority on the single-cell analysis and the molecular control of cell death. I also had the chance to collaborate with several other researchers in the field of systems Biology (such as Dr. Andreas Lindner and Dr. Manuela Salvucci) and advanced microscopy techniques (Dr Heiko Duessmann). More importantly, I was able to develop my own scientific independence as I led these projects (in conjunction with Prof. Prehn) from the beginning to the end of the scientific process.

My experience allowed me to obtain a postdoctoral fellowship through a competitive call from the Generalitat Valenciana in the Lab of Prof. Juan Vicente Esplugues Mota (FISABIO) where I focused on studying how to block the progression of liver fibrosis and the role of autophagy in the activation of hepatic stellate cells. We have obtained original data that led to two first author papers (one in Cell Death and Disease and a second one in preparation). Moreover, I also published a review on the role of autophagy in hepatic stellate cells activation during liver fibrogenesis in the journal of Pathology, which has been awarded the editor's choice of the month. During this fellowship I have also participated in a project (in collaboration with Prof Francisco Galindo) aimed to develop new fluorescent dyes to visualize mitochondria (with a second author paper in the Org Biomol Chem journal). This allowed me to obtain a second highly prestigious postdoctoral fellowship from the Asociacion Española Contra el Cancer for a total of 4 years, to continue my work in the field of breast cancer, BCL2 proteins and mitochondrial metabolism. Finally, in 2021, I have obtained a Ramon y Cajal fellowship to start my path to independence and my own research group: The Cellular Stress and Cell Death Pathways lab. In 2023, I have obtained my first grant as principal investigator to understand the role of entosis in the context of cancer biology; the work developed so far on entosis, has been positively accepted by the scientific community as I won a poster award at the 2023 ECDO conference. Furthermore, my impact in the field of cell death is increasingly recognized, evidenced by my invitations to give a talk to a prestigious scientific conference in Turkey and a medical-scientific meeting in Spain, in 2023. Finally, in 2024 I have obtained my first grant from the "ministerio" to carry on my independent scientific research.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

1. Neto JC.; et al (2/6). 2025. Introducing TAPY as a Versatile Alternative to TPP for Selective Mitochondrial Targeting in Cancer Cells. Bioconjug Chem. 2025 Apr 16;36(4):697-706. doi: 10.1021/acs.bioconjchem.4c00554.
2. Lucantoni, F.; et al. (1/8). 2022. Implication of autophagy in the antifibrogenic effect of Rilpivirine: when more is less. Cell Death Dis. 2022 Apr 20; 13(4):385.

3. Lucantoni, F.; et al. (1/4). 2021. BCL(X)L and BCL2 increase mitochondrial dynamics in breast cancer cell: Evidence from functional and genetic studies. Biochim Biophys Acta Mol Cell Res. 2021 Sep;1868(10):119095.
4. Lucantoni, F.; et al. (1/8). 2021. Understanding the implication of autophagy in the activation of hepatic stellate cells in liver fibrosis: are we there yet? J Pathol. 2021 Jul;254(3):216-228. doi: 10.1002/path.5678. Epub 2021 May 25.
5. Lucantoni, F.; et al. (1/6). 2020. BCL(X)L and BCL2 increase the metabolic fitness of breast cancer cells: a single cell imaging study. Cell Death Differ. 2021 May;28(5):1512-1531.
6. O'Farrell, A.; et al. (10/ 23). 2020. Implementing Systems Modelling and Molecular Imaging to Predict the Efficacy of BCL-2 Inhibition in Colorectal Cancer Patient-Derived Xenograft Models. Cancers (Basel). 2020 Oct 14;12(10):2978.
7. Lucantoni, F.; et al. (1/3). 2018. Metabolic Targeting of Breast Cancer Cells With the 2-Deoxy-D-Glucose and the Mitochondrial Bioenergetics Inhibitor MDIVI-1 Frontiers in Cell and Developmental Biology. Front Cell Dev Biol. 2018 Sep 11;6:113.
8. Lindner, A.; et al. (2/ 9). 2018. Low cleaved caspase-7 levels indicate unfavourable outcome across all breast cancers. J Mol Med (Berl). 2018 Oct;96(10):1025-1037.
9. Lucantoni, F.; et al. (1/4). 2018. BCL2 and BCL(X)L selective inhibitors decrease mitochondrial ATP production in breast cancer cells and are synthetically lethal when combined with 2-deoxy-D-glucose. Oncotarget. 2018 May 25;9(40):26046-26063.
10. Lucantoni, F.; et al. (1/5). 2018. Systems modelling accurately predicts responses to genotoxic agents and their synergism with BCL-2 inhibitors in triple negative breast cancer cells. Cell Death Dis. 2018 Jan 19;9(2):42.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

1. 14th EWCD meeting: ROCK1 activation enhances the occurrence of cellular cannibalism via entosis. Oral presentation. 11-16 May, Fiuggi.
2. 11º Congreso de Oncología Médica, Hematología y Farmacia Oncohematológica Tendiendo puentes: Otras vías de destrucción celular con vocación de Supernova. Federico Lucantoni. **Invited presentation**. 23-25 November 2023, Toledo.
3. EMK26 (Ulusal Elektron Mikroskopi Kongresi): On the Use of Microscopy to Dedect Entosis in Cells: The Case of Palbociclib Induced Senescence. Federico Lucantoni. **Invited presentation**. 20-23 September 2023, Eskişehir.
4. ECDO-EATI 2023: Palbociclib induced senescence increases the cell cannibalism programme entosis in cancer. Federico Lucantoni, Emir Bozkurt, Alberto Hernàndez Cano, Mario Soriano, Jochen HM Prehn and Mar Orzàez. Poster Presentation. 28-30 June 2023, Paris
5. 44º Congreso Nacional de la SEBBM: Metabolic rewiring of colon cancer cells with physiological nutrients conditions contributes to treatment resistance and increased clonogenic potential. Federico Lucantoni, Alicia Belén García-Jareño, Salvador Meseguer Llopis, Mónica Sancho, Mar Orzaez Calatayud. Oral presentation. 6-9 September 2022, Malaga.
6. The International Workshop on Liver and Gut Fibrosis 2021: Rilpivirine and simvastatin exert a synergistic antifibrogenic effect in vitro on hepatic stellate cells through oxidative stress regulation. Federico Lucantoni, David-Verdú Coloma, Alberto MartíRodrigo, Aleksandra Gruevska, Ángela B. Moragrega, Jordi Gracia-Sancho, Juan V. Esplugues, Nadezda Apostolova and Ana Blas-García. Poster presentation. 7-8 October 2021, Valencia.
7. International Liver Congress™ 2021 (EASL): The hepatoprotective role of the antiretroviral drug Rilpivirine is associated with altered autophagy in in vitro and in vivo models of liver fibrosis. Federico Lucantoni, Ana M. Benedicto, Aleksandra Gruevska, Ángela B. Moragrega, Alberto Martí-Rodrigo, Juan Vicente Esplugues, Ana Blas-García and Nadezda Apostolova. Poster presentation. 23-26 June 2021, Online congress.

8. 12th Cold Spring Harbor Laboratory Cell Death Meeting; “BCL2 and BCL(X)L Regulates Bioenergetics Efficiency of Breast Cancer Cells”. Federico Lucantoni, Manuela Salvucci, Heiko Duessmann and Jochen HM Prehn. Poster presentation. 15-17 August 2017, Hungtinton (NY).
9. American Association for Cancer Research Annual Meeting 2016: “System-based BCL2 family protein signature as predictive biomarkers in triple negative breast cancer”. Federico Lucantoni, Andreas U. Lindner, Norma O’Donovan, Damir Vareslija, Lance Hudson, Arnold DK Hill, Michael Kerin, Roisin Dwyer, Leonie Young and Jochen HM Prehn. Poster presentation. 16-19 April 2016, New Orleans (USA).
10. 11th Cold Spring Harbor Laboratory Cell Death Meeting: “System-based BCL2 family protein signature as predictive biomarkers in triple negative breast cancer”. Federico Lucantoni, Andreas U. Lindner, Norma O’Donovan, Damir Vareslija, Lance Hudson, Arnold DK Hill, Michael Kerin, Roisin Dwyer, Leonie Young and Jochen HM Prehn. Oral presentation. 15-18 September 2015, Hungtinton (USA).

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

1. APOSTD/050/2019 – “New therapeutic targets for NAFLD: autophagy, cellular senescence and mitochondrial bioenergetics in 3D models of the disease”. Generalitat Valenciana. Dr Federico Lucantoni – FISABIO. 01/2019 – 11/2021. 90.000 €. Principal Investigator.
2. POSTD21898LUCA – “DiscoMito - Discovering new therapies for TNBC: modulating cell death at the mitochondrial membrane”. Asociacion Española Contra el Cancer. Dr Federico Lucantoni – Centro de Investigacion Principe Felipe. 12/2021 – 12/2024. 160,000 €. Principal Investigator.
3. MFA/2022/065 – “Nanoplataforma Polipeptídica Multimodal de Precisión para el Tratamiento y Monitorización de Tumores Metastásicos”. Programa de I+D+I de materiales avanzados. Dr Maria Jesus Vicent Docon. Centro de Investigacion Principe Felipe. 2021-2024. 299.805 €. Team member.
4. RYC2021-034092-I – “BCL2 proteins interactions and metabolic rewiring as treatment points for colon and breast cancer”. Ministerio de Ciencia e Innovacion. Dr Federico Lucantoni. 01/2023 – 12/2027. 236.350 €. Principal Investigator.
5. CIGE/2022/87 – “Ento-cancer: Estudio de la entosis en cáncer humano. Relevancia del canibalismo celular en la agresividad de los tumores sólidos. Conselleria d'Innovació, Universitats, Ciència i Societat Digital. 01/2023 – 12/2024. 20.000€. Principal Investigator.
6. PT23/00177 - PLATAFORMAS ISCIII DE APOYO A LA LA I+D+I EN BIOMEDICINA Y CIENCIAS DE LA SALUD. Instituto de Salud Carlos III. 2023-2025. 490,680€. Team member.
7. PID2023-152599OA-I00 - Exploring Entosis in Cell Biology: A Quest for Novel Modulators in Cellular Cannibalism (ENTO-SCAN). Ministerio de Ciencia e Innovacion. Dr Federico Lucantoni. 09/2024 – 09/2027. 137,500 €. Principal Investigator.

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any.

1. **Patent** - EP23383243. Orzáez M, Sancho Medina M; Leiva Yuste D, Lucendo E, Lucantoni F. THIENO[2,3D]PYRIMIDINE COMPOUNDS USEFUL AGAINST CANCER.