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	Felipe Xosé		
Family name	Pimentel Muiños		
Gender (*)	Male	Birth date	13/06/1965
ID number (DNI)	36064474Z		
e-mail	fxp@cbm.csic.es	URL:https://www.cbm.uam.es/fxpimentel	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-0258-2855	

(*) Mandatory

A.1. Current position

Position	Investigador Científico, CSIC		
Initial date	22/05/2023		
Institution	Agencia Estatal Consejo Superior de Investigaciones Científicas		
Department/Center	Department of Immune System Development and Function	Centro de Biología Molecular Severo Ochoa (CBMSO)	
Country	Spain	Phone	659399445
Key words	Unconventional autophagy, ATG16L1, immunogenic apoptosis, protein trafficking, risk polymorphisms, inflammation, pathology		

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

Period	Position/Institution/Country/
1988-1992	Predoctoral investigator. Center for Molecular Biology (CSIC-UAM). Madrid.
1993-1994	Postdoctoral investigator. Center for Molecular Biology (CSIC-UAM). Madrid.
1995-2000	Postdoctoral investigator. Dpt. Molecular Biology (Massachusetts General Hospital, MGH) / Dpt. Genetics (Harvard Medical School), Boston, MA. USA.
2001-2001	Scientist. GPC-Biotech, Inc (Boston, MA. USA).
2002-2006	Ramón y Cajal. Center for Cancer Research (CIC, CSIC-USAL). Salamanca.
2007-2020	Científico Titular (CSIC). Center for Cancer Research (CIC, CSIC-USAL). Salamanca.
2021-2022	Científico Titular (CSIC). Center for Molecular Biology (CSIC-UAM). Madrid.

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Bs. Biology	Universidad Autónoma de Madrid	1988
PhD Molecular Biology	Universidad Autónoma de Madrid	1992

(Include all the necessary rows)

Part B. CV SUMMARY *(NOTE: all article citations are first or corresponding author)*

Dr. Pimentel did his PhD in **Dr. Manuel Fresno's** group **(Center for Molecular Biology, CSIC-UAM, Madrid; 1989-92)** studying role of tumor necrosis factor (TNF) in T cells, with the description of a relevant autocrine role in the activation and proliferation of these cells **(*J. Immunol.*, 1994; *J. Biol. Chem.*, 1994; *Eur. J. Immunol.*, 1995)**. He did postdoctoral training in **Dr. Brian Seed's** lab **(Massachusetts General Hospital/Harvard Medical School, Boston, USA; 1995-2000)**, to study TNF receptor signaling, showing a critical role of RIPK1 in NF-kB activation **(*EMBOJ.*, 1996)** and apoptosis in the presence of TNFR2 **(*Immunity*, 1999)**. A one year stay in the company **GPC-Biotech (Boston, USA; 2001)** allowed him to develop antisense-based screenings to identify molecules whose absence causes apoptosis in tumor cells, and to acquire experience in applicable research programs.

In 2002, Dr. Pimentel obtained a **Ramón y Cajal** contract and joined the **Center for Cancer Research (CIC, CSIC-Univ. Salamanca)** as an independent researcher, and from 2007 as a **Científico Titular (CSIC).** In 2021, the lab moved to the **Center for Molecular Biology Severo Ochoa, Madrid** (https://www.cbm.uam.es/fxpimentel), which has recently been awarded with the **Severo Ochoa**

excellence accreditation (2023). During these years, the lab has worked on the regulation of apoptotic cell death and autophagy, describing new functions of the pro-apoptotic molecule BAK at the endoplasmic reticulum, like its ability to regulate its conformation **(*J. Cell Biol.*, 2005)** or a role in apoptotic routes unrelated to the mitochondrial pathway **(*EMBOJ.*, 2009)**. The group has developed a high-throughput screening system, based on robotics techniques, to identify molecules whose expression triggers cell death, leading to a collection of proteins that induce canonical (apoptosis) and atypical forms of cell demise **(*Oncogene*, 2008)**. One of the latter, TMEM59, was found to induce an unconventional autophagic process involved in innate immunity against invading bacteria **(*EMBOJ.*, 2013)**. This atypical process is mediated by the autophagic effector ATG16L1 through a domain (the WD40 domain) that is irrelevant for canonical autophagy, and is inhibited by a polymorphic allele of ATG16L1 (T300A) that increases the risk of Crohn disease **(*Nat. Commun.*, 2016)**, suggesting that TMEM59 mediates the pathological effects of the T300A allele **(*Autophagy*, 2016)**. Additional work showed that the WD40 domain binds the anti-inflammatory mediator A20 to control intestinal homeostasis **(*Nat. Commun.*, 2019)** and membrane receptors to regulate their signaling properties **(*Nat. Commun.*, 2020)**. All these results have contributed to solidify the idea that the WD40 domain is a signaling hub involved in a variety of physiological and pathological processes.

This work has been **communicated** to the scientific community through publications and congresses (see below C.1, C2), and to the general public through press notes, interviews, social media (Twitter) (see, for example: News and Twitter). The group has been continuously **funded** by public **(Plan Nacional, Junta Castilla y León)**, private **(AECC)** and international **(Crohn and Colitis Foundation, USA)** sources (see C.3), and has **collaborated** with international investigators: **Drs. C. Hetz** (Chile Univ. and Harvard Medical School, USA; 2012), **D. Boone** (Indiana Univ.; South Bend, USA; 2016), **R. Xavier** (Broad Institute; Cambridge USA; 2016), **M. Maurice** (Univ. Medical Center, Utrech, Holland; 2018), **G. Van Loo** (Ghent Univ.; Ghent, Belgium; 2019) and **T. Wileman** (Univ. East Anglia; Norwich, UK; 2020), with a **number of shared publications**. The lab has **trained** **4x postdoctoral fellows (A. Fleischer**, 2006-2009**; M. Letek**, 2009-2013**; JL. Cedillo,** 2018-2019; **P. Delgado,** 2022-2023**), 8x PhD students** (**M. Klee**, 30/05/2008; **S. Alcalá**, 24/07/2008; **K. Pallauf**, 08/07/2011; **E. Boada**, 20/03/2015; **I. Serramito**, 17/12/2019; **R. Villamuera**, 01/07/2022; **R. Taouil**, 17/07/2022; **A. Fernández**, 21/07/2023) and 3x more are developing their PhD theses in the lab, **9x TFMs** and **2x TFGs**. All **PhD graduates are following scientific careers**, one of them rather successfully: **Dr. Emilio Boada** is a postdoctoral investigator with Dr. Douglas Green (St. Jude Children's Hospital, Memphis, USA; 2016-2023). Dr. Pimentel is a **member of the Management Board and Treasurer of SEFAGIA** (Sociedad Española de Autofagia) since 2023, and was the president of the Organizing Committee for the 2022 National SEFAGIA Congress (Toledo, 9-11/11/2022). He is a **scientific evaluator** for the AEI and different journals, and was a member of the Comisión de Evaluación Plan Nacional, Immunity, Infection and New Therapies, IIT in 2018). **Teaching merits** include the courses **"Transcription Factors in Cancer"** (2003-2020) and **"Cell Death and Cancer"** (2016-2020) of the Official Master "Biology and Clinics of Cancer" (Univ. Salamanca), and the course **"Functional Genomic Screenings"** (2004-2009) of the PhD Program "Molecular Biology and Biotechnology" Univ. León.

Part C. RELEVANT MERITS

C.1. Publications *(Note: citations according to WOS, 2024; CA: corresponding author)*

1. Terraza-Silvestre, E; Villamuera, R; Bandera-Linero, J; Letek, M; Oña-Sánchez, D; **Pimentel-Muiños, FX (CA)**. (2023) An unconventional autophagic pathway that inhibits ATP secretion during apoptotic cell death. ***Nat. Commun.***, **Under second revision. Published in BiorXiv; link:** https://www.biorxiv.org/content/10.1101/2024.01.21.576513v1

2. Serramito-Gómez, I; Terraza-Silvestre, E; Fernández, A; Villamuera, R; **Pimentel-Muiños, FX (CA)**. (2022) ATG16L1 WD40 domain-dependent IL10R signaling is insensitive to the T300A Crohn disease risk polymorphism. ***Autophagy***, 18:3023-30. Q1. **Citations: 1**

3. Serramito-Gómez, I; Boada-Romero, E; Villamuera, R; [et al]; **Pimentel-Muiños, FX (CA)**. (2020). Regulation of cytokine signaling through direct interaction between cytokine receptors and the ATG16L1 WD40 domain. ***Nat. Commun***., 11:5919 (1-15). Q1. 12/12. **Citations: 11**

4. Slowicka, K; Serramito-Gómez, S; Boada-Romero, E; [et al]; **Pimentel-Muiños, FX(*; CA); van Loo, G(*; CA).** (2019). Physical and functional interaction between A20 and ATG16L1-WD40 domain in the control of intestinal homeostasis. ***Nat. Commun***., 10:1834 (1-15). Q1. **(*) Co-corresponding senior authors.** 14/15. **Citations: 32**

5. Boada-Romero, E; Serramito-Gómez, I; Sacristán, MP; Boone, DL; Xavier, RJ; **Pimentel-Muiños, FX (CA).** (2016). The T300A Crohn's disease risk polymorphism impairs function of the WD40 domain of ATG16L1. ***Nat. Commun***, 7:11821 (1-13). Q1. **Citations: 58**

6. **Pimentel-Muiños, FX (CA);** Boada-Romero, E. (2014). Selective autophagy against membranous compartments: ***Autophagy***, 10:397-407. Q1. **Citations: 21**

7. Boada-Romero, E; Letek, M; Fleischer, A; Pallauf, K; Ramón-Barros, C; **Pimentel-Muiños, FX (CA).** (2013). TMEM59 defines a novel ATG16L1-binding motif that promotes local activation of LC3. ***EMBO J.***, 32:566-582. Q1. **Citations: 100**

8. Klee, M; Pallauf, K; Alcalá, S; Fleischer, A; **Pimentel-Muiños, FX.(CA)** (2009). Mitochondrial apoptosis induced by BH3-only molecules in the exclusive presence of endoplasmic reticular Bak. ***EMBO J.***, 28:1757-1768. Q1. **Citations: 81**

9. Alcalá, S; Klee, M, Fernández, J; Fleischer, A; **Pimentel-Muiños, FX(CA)**. (2008). A high-throughput screening for mammalian cell death effectors identifies the mitochondrial phosphate carrier as a regulator of cytochrome c release. ***Oncogene***, 27:44-54 (2008). Q1. **Citations: 82**

10. Klee, M; **Pimentel-Muiños, FX(CA)**. (2005). Bcl-Xl specifically activates Bak to induce swelling and restructuring of the endoplasmic reticulum. ***J. Cell Biol.***, 168:723-734. Q1. **Citations: 58**

C.2. Congresses

1. Unconventional autophagy mediated by ATG16L1 regulates cytokine receptor trafficking and signaling. Serramito-Gómez, I; Boada-Romero, E; Villamuera, R; Fernández-Cabrera, A; Cedillo, JL; **Pimentel-Muiños, FX.** Meeting of the Spanish Society of Autophagy (SEFAGIA). Cáceres, 04/03/2020-06/03/2020. Oral presentation. **National meeting.**

2. Impaired function of the WD40 domain of ATG16L1 caused by the T300A Crohn's disease risk polymorphism. **Pimentel-Muiños, FX**; Serramito-Gómez, I. Meeting of the Transautophagy COST Action. Warsaw, Poland, 06/10/2016-07/10/2016. Poster. **International meeting.**

3. The function of the WD40 domain of ATG16L1 is inhibited by the T300A Crohn's disease risk polymorphism. **Pimentel-Muiños, FX**; Serramito-Gómez, I. XXXIX meeting of the SEBBM. Salamanca, 05/09/2016-08/09/2016. Oral presentation. **National meeting.**

4. Identification of novel ATG16L1 regulators involved in Crohn's disease. **Pimentel-Muiños, FX.** Annual Investigator Meeting of the Broad Medical Research Program (CCF). Newark, NJ (USA), 10/03/2016-11/03/2016. Oral presentation. **International meeting.**

5. New gene functions in apoptosis and autophagy identified by functional genomics. **Pimentel-Muiños, FX.** XXXVIII meeting of the SEBBM. Valencia, 07/09/2015-10/09/2015. Oral presentation. **National meeting; invited speaker.**

6. TMEM59 defines a protein motif that recognizes the WD-repeat domain of ATG16L1 and promotes local activation of LC3. **Pimentel-Muiños, FX**. Keystone Symposium on Autophagy and Inflammation. 17/02/2013-22/02/2013. Montreal, Canada. Poster. **International meeting.**

C.3. Research projects

1. **Title and reference:** Unconventional activities of the autophagic mediator ATG16L1 and their role in health and disease (Ref. PID2020-114699RB-100)
Funding agency: Ministry for Science and Innovation (Spain); 2020 call
Principal Investigator: Felipe X. Pimentel Muiños (Managing entity: CSIC)
Dates: 01/09/2021 – 31/08/2024
Funds: 280.000 Euros (direct costs) **Current state:** Granted (ongoing)

2. **Title and reference:** Mechanisms and manipulation of immunogenic cell death (Ref. IDEAS18093PIME)
Funding agency: Asociación Española Contra el Cáncer (AECC), "Ideas Semilla" program.
Principal Investigator: Felipe X. Pimentel Muiños (entity: FICUS foundation)
Dates: 01/09/2018 – 31/08/2020 (extended for 4 months)
Funds: 20.000 Euros (direct costs) **Current state:** Granted (finalized)

3. **Title and reference:** Novel activities of the autophagic regulator ATG16L1 and their relevance in health and disease (SAF2017-88390-R)

Funding agency: Ministerio de Economía, Industria y Competitividad; 2017 call
Principal Investigator: Felipe X. Pimentel Muiños (entity: CSIC)
Dates: 01/01/2018 – 31/12/2020
Funds: 170.000 Euros (direct costs) **Current state:** Granted (ongoing)

4. **Title and reference:** Genetic instability and autophagy in cancer and inflammatory diseases (Ref. SA042P17)
Funding agency: Junta de Castilla y León. Joint grant, Consolidated Research Unit (UIC-252).
Principal Investigator: Avelino Bueno/Felipe X. Pimentel-Muiños (entity: Univ. de Salamanca)
Participation as: Member of UIC-252
Dates: 01/01/2017 – 31/12/2019
Funds: 120.000 Euros (direct costs) **Current state:** Granted (finalized)

5. **Title and reference:** Transautophagy European Network (Ref. CA15138)
Funding agency: COST Action (European Union); 2015 call
Principal Investigator: Caty Casas/Patrice Codogno (entity: Univ. de Barcelona)
Participation as: Principal Investigator supporting the application
Dates: 01/01/2016 – 31/12/2019
Funds: 500.000 Euros (direct costs) **Current state:** Granted (finalized)

6. **Title and reference:** Role of unconventional autophagy in innate immunity, intestinal homeostasis and Crohn's disease (Ref. SAF2014-53320-R)
Funding agency: Ministerio de Economía y Competitividad; 2013 call
Principal Investigator: Felipe X. Pimentel Muiños (entity: CSIC)
Dates: 01/01/2015 – 31/12/2017
Funds: 110.000 Euros (direct costs) **Current state:** Granted (finalized)

7. **Title and reference:** Identification of novel ATG16L1 regulators involved in Crohn's disease (Ref. IBD-0369)
Funding agency: Broad Medical Research Program (Broad Foundation, Crohn and Colitis Foundation), Los Angeles, USA (2012 call)
Principal Investigator: Felipe X. Pimentel Muiños (entity: FICUS foundation)
Dates: 01/07/2013 – 30/06/2016
Funds: 174.000 Euros (direct costs) **Current state:** Granted (finalized)

8. **Title and reference:** Characterization of novel proteins and signaling routes involved in the regulation of autophagy in mammals (Ref. SAF2011-23714)
Funding agency: Ministerio de Ciencia e Innovación; 2011 call
Principal Investigator: Felipe X. Pimentel Muiños (entity: CSIC)
Dates: 01/01/2012 – 31/12/2014
Funds: 125.000 Euros (direct costs) **Current state:** Granted (finalized)

9. **Title and reference:** Role of autophagy in human pathology (Ref. SAN11)
Funding agency: Junta Castilla y León (Health Department; 2010 call)
Principal Investigator: Felipe X. Pimentel Muiños (entity: FICUS foundation)
Dates: 01/01/2011 – 31/12/2012
Funds: 24.000 Euros (direct costs) **Current state:** Granted (finalized)

10. **Title and reference:** Structural and functional study of a novel transmembrane protein that induces atypical cell death (CSI001A10-2)
Funding agency: Junta Castilla y León (Education Department; 2009 call).
Principal Investigator: Felipe X. Pimentel Muiños (entity: CSIC)
Dates: 01/01/2010 – 31/12/2012
Funds: 40.000 Euros (direct costs) **Current state:** Granted (finalized)

C.4. Contracts, technological or transfer merits

Patent: Inventors: Brian Seed, Felipe X. Pimentel-Muiños, Eun-Chung Park. **Reference:** U.S.S.N. 09/665,883. **Title:** Methods for potentiating antisense RNA techniques. **Country of priority:** USA. **Priority date:** 23/09/1999. **Entity:** Massachusetts General Hospital. **Countries:** Whole world (PCT/US00/25762)