



**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**

**CV date**

17/02/2025

First name	Lynne Paula		
Family name	Yenush		
Gender (*)	Female	Date of Birth (dd/mm/yyyy)	
NIF			
e-mail	lynne@ibmcp.upv.es	URL Web: http://www.upv.es/ficha-personal/lynne	
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-8589-7002		

(\*) Mandatory

**A.1. Current position**

Position	Full Professor (Catedrática)		
Initial date	16/12/2019		
Institution	Universitat Politècnica de València (UPV)		
Department/Center	Biotechnology	Inst. Biología Molecular y Celular de Plantas	
Country	SPAIN	Teleph. number	963879375
Key words	Abiotic stress, drought, salinity, potassium, biostimulants		

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

Period	Position/Institution/Country/Interruption cause
21/12/2016-15/12/2019	Professor “ <i>Profesor Titular Universidad</i> ” (UPV)
20/10/2006-20/12/2016	Professor “ <i>Profesor Contratado Doctor</i> ” (UPV)
07/07/2002-19/10/2006	Ramón y Cajal Fellow (UPV)

**A.3. Education**

PhD, Licensed, Graduate	University/Country	Year
PhD	Harvard Medical School/United States of America	1997
Bachelor's Degree	Wheaton College/United States of America	1992

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

**Scientific contributions:** I started my research career as a doctoral student at Harvard Medical School (1993-1997). During this period, I participated in several research projects focused on various aspects of insulin signal transduction that resulted in 18 publications, including 2 publications in JBC and Nature that have been cited more than 1000 and 740 times respectively. My primary contributions were to define the functions of the Insulin Receptor Substrate (IRS)-1 protein and its post-translational modifications and my participation in the cloning and characterization of the IRS-2 protein and its role in diabetes in mouse models. I carried out my postdoctoral period with Professor Ramón Serrano (IBMCP UPV/CSIC), funded by National Science Foundation, EMBO and Ramon y Cajal fellowships (1998-2006). During this period, I participated in several research projects that resulted in 13 publications, including two as the corresponding author. These studies focused on the role of different proteins in conferring halotolerance in yeast, as a proxy for higher eukaryotes. We resolved the 3D structure and determinants of the salt tolerance provided by an evolutionarily conserved in vivo target of lithium and sodium toxicity, Hal2. In addition, we characterized and solved the 3D structure of a mammalian homologue of Hal2, RnPIP and provided evidence for a potential role of the human homologue HsPIP, as a target for lithium therapy. I also discovered the major

function of a yeast protein phosphatase/regulatory subunit pair, Ppz1-Hal3, as negative regulators of the potassium transporter, Trk1 and as one of the first *in vivo* pH sensors. We established a novel mechanism of salt tolerance related to the accumulation of either protons or potassium ions, which is a conserved mechanism that alters the membrane potential and impedes toxic ion accumulation and cell cycle progression. I also contributed to the development of a mathematical model with predictive capacity for yeast potassium starvation. In 2009, I formed an independent group and got my first grants from the National Plan for R&D. My major contributions during these years were the characterization of the relationship between internal potassium concentrations and the stability of nutrient transporters and the effects of the TOR pathway and AMPK signaling. In 2016, I co-founded the Abiotic Stress group with Professor José Miguel Mulet. During these last years, we have been focused on the regulation of the KAT1 potassium channel and its influence on stomatal movement and drought stress and the characterization of the transcriptional response to potassium starvation in model and crop plants. We have identified a bona fide KAT1 regulators (BAG4, MEE31) and are characterizing several more.

Since I started my research career, my scientific activity has been focused on different fields of biochemistry and molecular biology in order to unravel signal transduction pathways in different experimental models responsible for the adaptation of living organisms to their environment. I have been the PI for 13 competitive research projects (total of 20) and have co-authored 60 publications in collaboration with many international scientists (i.e. Morris F. White (USA), Tom Blundell (UK), Robbie Loewith (Switzerland), Anne-Alienor Véry (France)), which have been cited more than 5500 times (h-Index = 34). *Quinquenios*: 3; *Sexenios*: 5

**Contributions to society:** I have actively collaborated with industry partners, carrying out R&D activities (ZETA BEER, Sakata, Sofeby and CALDIC (see projects and contracts below)). In terms of collaborations with public institutions, I served as the Vice Director of the Institute of Molecular and Cellular Biology of Plants from 2009-2022, a position that is elected by staff scientists. During these years, I was also responsible for the Master Degree in Plant Molecular and Cellular Biotechnology. I am currently the Director of the Doctoral School at the UPV (31 PhD programs and 2800 doctoral students).

**Teaching and Mentoring:** I began my teaching career in 2006 in the UPV Biotechnology Department and was appointed as the first female Full Professor (Catedrática) in Biochemistry in 2019. Between 2006 and 2022, I have taught more than 2000 class hours and at both the undergraduate and graduate level. I received the Teaching Excellence Award in 2022 from the UPV Social Council given to the top 6 out of 2500 UPV professors. I have directed 5 PhD theses (3 more in progress) and over 50 final year research projects (undergraduate and master, 5 international). Almost all of these students have continued in science and are carrying out masters or PhDs or are employed as university professors or investigators in research companies (ie Syngenta).

**Evaluations:** I have acted as a peer reviewer for many top-ranked journals (including Science, J. Cell Biol) and as an evaluator for research projects in Spain, Poland, and Czech Republic.

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

### **C.1. Selected Publications (last 10 years)**

1. PIF transcriptional regulators are required for rhythmic stomatal movements. Rovira A, Veciana N, Basté-Miquel A, Quevedo M, Locascio A, **Yenush L**, Toledo-Ortiz G, Leivar P, Monte E. **Nat Commun.** 2024 May 29;15(1):4540.
2. Maternal Embryo Effect Arrest 31 (MEE31) is a moonlighting protein involved in GDP-D-mannose biosynthesis and KAT1 potassium channel regulation. González-García A, Kanli M, Wisowski N, Montoliu-Silvestre E, Locascio A, Sifres A, Gómez M, Ramos J, Porcel R, Andrés-Colás N, Mulet JM, **Yenush L**. **Plant Sci.** 2024 Jan;338:111897. doi: 10.1016/j.plantsci.2023.111897.

3. Modulation of potassium transport to increase abiotic stress tolerance in plants. Mulet JM, Porcel R, **Yenush L**. **J Exp Bot**. 2023 Oct 13;74(19):5989-6005.
4. A fast method to evaluate in a combinatorial manner the synergistic effect of different biostimulants for promoting growth or tolerance against abiotic stress. Benito P, Ligorio D, Bellón J, **Yenush L**, Mulet JM. **Plant Methods**. 2022 Sep 15;18(1):111. doi: 10.1186/s13007-022-00943-6.
5. Identification of distinctive physiological and molecular responses to salt stress among tolerant and sensitive cultivars of broccoli (*Brassica oleracea* var. *Italica*). Chevilly S, Dolz-Edo L, Morcillo L, Vilagrosa A, López-Nicolás JM, **Yenush L**, Mulet JM. **BMC Plant Biol**. 2021 Oct 25;21(1):488. doi: 10.1186/s12870-021-03263-4.
6. Physiological and Molecular Characterization of the Differential Response of Broccoli (*Brassica oleracea* var. *Italica*) Cultivars Reveals Limiting Factors for Broccoli Tolerance to Drought Stress. Chevilly S, Dolz-Edo L, López-Nicolás JM, Morcillo L, Vilagrosa A, **Yenush L**, Mulet JM. **J Agric Food Chem**. 2021 Sep 8;69(35):10394-10404. doi: 10.1021/acs.jafc.1c03421.
7. BCL2-ASSOCIATED ATHANOGENE4 Regulates the KAT1 Potassium Channel and Controls Stomatal Movement. Locascio A, Marqués MC, García-Martínez G, Corratgé-Faillie C, Andrés-Colás N, Rubio L, Fernández JA, Véry AA, Mulet JM, **Yenush L**. **Plant Physiol**. 2019 Nov;181(3):1277-1294. doi: 10.1104/pp.19.00224.
8. FungalBraid: A GoldenBraid-based modular cloning platform for the assembly and exchange of DNA elements tailored to fungal synthetic biology. Hernanz-Koers M, Gandía M, Garrigues S, Manzanares P, **Yenush L**, Orzaez D, Marcos JF. **Fungal Genet Biol**. 2018 Jul;116:51-61. doi: 10.1016/j.fgb.2018.04.010. Epub 2018 Apr 20.
9. Reciprocal Regulation of Target of Rapamycin Complex 1 and Potassium Accumulation. Primo C, Ferri-Blázquez A, Loewith R, **Yenush L**. **J Biol Chem**. 2017 Jan 13;292(2):563-574. doi: 10.1074/jbc.M116.746982.
10. Regulation of the Yeast Hxt6 Hexose Transporter by the Rod1  $\alpha$ -Arrestin, the Snf1 Protein Kinase, and the Bmh2 14-3-3 Protein. Llopis-Torregrosa V, Ferri-Blázquez A, Adam-Artigues A, Deffontaines E, van Heusden GP, **Yenush L**. **J Biol Chem**. 2016 Jul 15;291(29):14973-85. doi: 10.1074/jbc.M116.733923.

## C.2. Selected Congresses

1. Root Phototropism 2 (RPT2) is a KAT1 potassium channel regulator required for its accumulation. XVI Reunión de Biología Molecular de Plantas (RBMP 2022) 16/09/2022 Poster
2. Identification of the Arabidopsis BCL2-Associated Athanogene (BAG) 4 protein as a KAT1 potassium channel regulator. 18th International Workshop on Plant Membrane Biology 12/07/2019 Poster
3. Invited lecture-The role of protein trafficking in ion and nutrient homeostasis 51-51 30th International Specialized Symposium on Yeast: "Cell Surface and Organelles in Yeasts: from Basics to Applications" 22/06/2013 Invited Conference
4. Improvement of the Split-Trp System: a versatile protein screening platform for the identification of protein-protein interactions in all cellular compartments. Yeast Genetics and Molecular Biology Meeting 2010 27/07/2010 Oral Presentation
5. A role for Ppz1p-mediated regulation of the Trk1p high affinity potassium transporter in cell cycle progression. XXII International Conference on Yeast Genetics and Molecular Biology 07/08/2005 Oral Presentation

6. The Role of Ppz1 and Hal3 in the Determination of Ion Homeostasis. Gordon Research Conference on Second Messengers & Protein Phosphorylation  
09/06/2002 Invited Conference

### **C.3. Selected Research projects** (last 10 years)

1. Identificación y caracterización de nuevos mecanismos reguladores que gobiernan los flujos de potasio en Arabidopsis (PID2022-137193NB-I00). AGENCIA ESTATAL DE INVESTIGACION. **PI: Lynne Yenush (Co-PI: José Miguel Mulet)**  
01/09/2023-31/08/2026. 106.250 €.
2. Nutricio de Potassi i Estres Abiotic en Brassica (AICO/2021/352). GENERALITAT VALENCIANA. **PI: Lynne Yenush**  
01/01/2021-30/12/2023. 90.000 €.
3. Estudio de Reguladores de Canales de Potasio en el Control de la Apertura Estomatica y de Resistencia a Sequia (PID2019-104054GB-I00). AGENCIA ESTATAL DE INVESTIGACION. **PI: Lynne Yenush (Co-PI: José Miguel Mulet)**  
01/06/2020-30/05/2023. 102.850 €.
4. Aproximaciones Moleculares para Incrementar la Tolerancia a Salinidad a Sequia del Brocoli (RTC-2017-6468-2-AR). AGENCIA ESTATAL DE INVESTIGACION. **PI: Lynne Yenush (Co-PI: José Miguel Mulet)**  
01/01/2018-30/10/2022. 197.454 €
5. Bioproducción Sostenible de Feromonas de Insectos para Control de Plagas (SUSPHIRE) (PCI2018-092893). MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES. Participant (**PI Diego Orzaez**)  
01/01/2019-31/21/2021. 200.000,00€
6. Caracteritzacio Molecular i Fisiologica de Dienes Per a l'Optimizacio de l'us d'Aigua en Plantes. (AICO/2018/300). GENERALITAT VALENCIANA. **PI: Lynne Yenush**  
01/01/2018-31/21/2020. 40.000 €
7. Descifrando la Regulación de Transportadores de Potasio en Plantas y Levaduras (BIO2016-77776-P). AGENCIA ESTATAL DE INVESTIGACION. **PI: Lynne Yenush**  
30/12/2016-31/12/2019. 121.000 €

### **C.4. Contracts, technological or transfer merits**

#### Contracts:

1. EVALUATION OF 11 DIFFERENT FORMULATIONS WITH POTENTIAL BIOSTIMULANT ACTIVITY USING YEAST (SACCHAROMYCES CEREVISIAE) AND ARABIDOPSIS THALIANA. SOFBEY SA. **PI: José Miguel Mulet Salort.** (Role: Participant)  
12/04/2022-09/01/2023. 25.000 €
2. DESARROLLO DE FORMULADOS BIOESTIMULANTES Y BIOFERTILIZANTES INNOVADORES DE ORIGEN NATURAL (CALBIO) DESTINADOS A LA AGRICULTURA CONVENCIONAL Y ECOLÓGICA. ESTUDIO CIENTÍFICO DE EFECTOS SINÉRGICOS ENTRE BIOACTIVOS MICROBIANOS Y NO MICROBIANOS  
CALDIC IBERICA, S.L. **PI: José Miguel Mulet Salort.** (Role: Participant)  
08/06/2021-06/06/2023. 100.000 €
3. AISLAMIENTO Y CARACTERIZACIÓN INICIAL DE CEPAS DE SACCHAROMYCES CEREVISIAE AUTÓCTONAS  
ZETA BEER S.L. **PI: Lynne Yenush**  
10/01/2018-20/12/2019. 8.000€