***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**

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| --- | --- | --- | --- |
| First name | Pilar | | |
| Family name | Cubas Domínguez |  |  |
| Gender (\*) | Female | Birth date (dd/mm/yyyy) | 02/01/1964 |
| Social Security, Passport, ID number | 50704468W |  |  |
| e-mail | pcubas@cnb.csic.es | URL Web https://www.cnb.csic.es/index.php/en/research/research-departments/plant-molecular-genetics/genetic-control-of-shoot-branching-patterns-in-plants | |
| Open Researcher and Contributor ID (ORCID) (\*) | | 0000-0003-4679-2173 | |

(\*) Mandatory

**A.1. Current position**

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| --- | --- | --- | --- | --- |
| Position | Investigadora científica del CSIC | | | |
| Initial date | Marzo 2010 | | | |
| Institution | Consejo Superior de Investigaciones Científicas | | | |
| Department/Center | Plant Molecular Genetics | Centro Nacional de Biotecnología | | |
| Country | Spain | | Teleph. number | 915854905 |
| Keywords | Molecular plant genetics, dormancy, plant architecture, TCP, branching patterns | | | |

**A.2. Previous positions**

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| Period | Position/Institution/Country/Interruption cause |
| May 2002-March 2010 | Research Scientist/CNB-CSIC/España |
| March 2001-May 2002 | Ramón y Cajal Researcher /CNB-CSIC/España |
| January 1999-March 2001 | Postdoctoral contract del Min.Ed./INIA/España |
| January 1998-December 1998 | Postdoctoral Fellow Comunidad Madrid/INIA/España |
| January 1997-Dic.1997 | Postdoctoral Contract Gatsby Fundation/John Innes Centre/RU |
| January 1995- January 1997 | Postdoctoral Fellow Marie Curie/ John Innes Centre/RU |
| January 1994- January 1995 | Postdoctoral Fellow EMBO/John Innes Centre/RU |
| 1992-1993 | Postdoctoral Fellow Fundación Rich/CBMSO-CSIC/España |
| 1988-1992 | Predoctoral Fellow Comunidad de Madrid/CBMSO-CSIC/España |

**A.3. Education**

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| --- | --- | --- |
| PhD, Licensed, Graduate | University | Year |
| Bachelor in Biological Sciences | Universidad Autónoma de Madrid | 1987 |
| PhD in Biological Sciences | Universidad Autónoma de Madrid | 1992 |

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

I have a PhD in Biological Sciences from the Autónoma University of Madrid (1992). In 2002 I became Senior Scientist at the CSIC and since 2010 I am Research Scientist at the CNB-CSIC. During my career I have published scientific articles in prestigious general scientific journals (Science, Nature, Nature Plants, EMBO, Current Biology, PNAS, PLoS Biology, PLoS Genetics, Genes & Development) and have a total of 11311 citations and an H-index of 37 (WoS, January 2024). Throughout my career I have made important contributions to the understanding of angiosperm development and evolution. In my first stage I identified the TCP domain, a protein domain typical of a family of plant-specific transcription factors, whose members played key roles in plant evolution. I proposed that it had DNA binding and dimerisation functions (Plant Journal, 1999), which have subsequently been confirmed. I elucidated the role of several TCP genes key in the evolution of floral morphology: CYCLOIDEA, responsible for floral asymmetry in *Linaria vulgaris* (Nature, 1999) and African violet and for inflorescence (flower head) dimorphism in *Senecio vulgaris* (Science, 2008). *CYCLOIDEA* is asymmetrically expressed in floral meristems even in Arabidopsis that predates the evolution of zygomorphic flowers (Current Biology, 2011). A heritable epialele of *CYCLOIDEA* led us to propose that epigenetic modifications could have evolutionary impact (Nature, 1999). Back to Spain, I studied the molecular mechanisms controlling axillary bud dormancy, a decision controlled by TCP transcription factor BRANCHED1 (BRC1), a genetic integrator of signals that induce bud dormancy (Plant Cell, 2007, Plant Cell 2013, PNAS 2017, New Phytologist 2023). I have studied the control of bud dormancy in Solanaceae, and the evolution and function of *BRC1* genes in these species (Plant Journal 2011, Current Biology 2015). In *Solanum tuberosum* (potato), I described a new function for *BRC1b* during tuberisation (Nature Plants, 2022). I have also found that axillary bud dormancy consists of a carbon starvation syndrome in both perennial and annual plants phylogenetically distant from each other (Front. Plant Sci., 2017). I have participated in the characterization of a negative regulator of BRC1, TIE1 (PLoS Genetics, 2018) and isolated and studied for the first time the receptor for strigolactones, describing a novel negative feedback based on receptor destabilisation by the hormone (Plant Cell 2014, BioRxiv 2024). I have been principal investigator (PI) of 7 consecutive National Research Plan projects, I have participated in a Consolider project and I have obtained funds for international collaborations (CONICET, FAPESP, CEPLAS). I have been PI in 2 Trilateral ERANET projects, participated in 2 COST actions, and I have contracts and collaborations with companies (Fitó, Ramiro Arnedo S.A.). I am **EMBO member** (since 2023), **CSIC representative and board member of the European Plant Science Organization (EPSO), expert evaluator of the European Food Safety Authority (EFSA)**, advisor of the National Biosafety Commission (Ministry of Ecological Transition) for the European legislation on gene editing, and CSIC representative in the G6 task force of gene editing. I have collaborated in the analysis of this legislation on behalf of COSCE. Since 2024 I am **President of the Bioscience area in the AEI**, was assistant collaborator of the ANEP (2015-19, Area BFS, subarea Plants) and have participated in numerous project evaluation commissions of the National Research Agency. I have been Associate Editor of Plant Molecular Biology (2007-20) and Handling Editor of J. Exp. Bot. (2020-2023) and Review Editor of Front Plant Sci. I am a reviewer of numerous scientific articles (Nature Comm, Nature Plants, PNAS, Mol Plant, Plant Cell, Curr Biol, PLoS Biology etc. ), evaluator of international (NSF, HSFP, ALW, BBSRC, ISF, ANR, CONICET, ITN, Marie Curie) and national projects (Caixa, SO-CRAG, Plan Nacional) and I have participated in Evaluation committees of Ramón y Cajal, Juan de la Cierva, thesis tribunals and I have been jury of research awards. Until 2022 I was treasurer of the **SEBD Board of Directors** and I am currently a member of the CNB Equality Commission. I have participated in the organisation of numerous national and international congresses and symposia. I have supervised 3 doctoral theses (plus 6 in progress), 15 TFM and 8 TFG. I have taught undergraduate, graduate, doctoral and Master's degree courses for national and international universities (Paris XI Orsay, Milan, Helsinki). I have participated in the Master in Plant Biotechnology (International University of Andalusia) and the National Genetics Course (2006, 2019). I have given numerous invited lectures at academic and research institutions and at national and international conferences. I collaborate with leading international groups in the study of the control of branching and signalling by strigolactones and have spent several stays at international centres (John Innes Centre, NCSU, University of Düsseldorf).

**Part C. RELEVANT MERITS**

**C.1. Publications (last 10 years)** *(OA, original article; BC, book chapter, R, review; Citations from Web of Science)*

**1.** Sánchez Martín-Fontecha E, et al. **Cubas P©**. Novel Mechanisms of Strigolactone-Induced DWARF14 Degradation in Arabidopsis thaliana. **BioRxiv (2024)** 10.1101/2024.01.10.574527. (Submitted to Plant Communications). OA

**2.** Mammarella MF, et al. Federico Ariel©. Long noncoding RNA-mediated epigenetic regulation of auxin-related genes controlling shade avoidance syndrome in Arabidopsis thaliana EMBO J (2023). 42:e113941.10.15252/embj.20231139 (14/15) OA

**3.** Van Es S\* et al. **Cubas P©.** A gene regulatory network critical for axillary bud dormancy directly controlled by Arabidopsis BRANCHED1. **New Phytologist (2023)** 10.1111/nph.19420. OA

**4.** Barrera-Rojas CH, et al. Fabio TS Nogueira©. Tomato miR156-targeted SlSBP15 represses shoot branching by modulating hormone dynamics and interacting with GOBLET and BRANCHED1b J Ex Bot (2023) (13/14) 10.1093/jxb/erad238 (A) OA. Citations 3.

**5.** Mora CC, et al. Cubas P, Raquel Lía Chan©. AtHB40 modulates primary root length and gravitropism involving CYCLINB and auxin transporters. Plant Science (2022) 324, 111421. 10.1016/j.plantsci.2022.111421. OA article. Citations 4

**6.** Nicolas M©, et al. **Pilar Cubas©.** Spatial control of potato tuberisation by the TCP transcription factor BRANCHED1b Nature Plants (2022) 8, 281–294. [10.1038/s41477-022-01112-2](https://doi.org/10.1038/s41477-022-01112-2). OA, Cit. 26. PORTADA

**7.** Li Q, et al. Cubas P and Nelson D. Degradation of SUPPRESSOR OF MAX2 1 (SMAX1) by the strigolactone receptor D14 in Arabidopsis thaliana Plant communications (2022) 3, (2)10030. 10.1016/j.xplc.2022.100303 OA. Citations, 25 (7/8)

**8.** Confraria A. et al. **Cubas P©.** Shoot Branching Phenotyping in Arabidopsis and Tomato. Meths Mol. Biol. Environmental Responses in Plants. (2022) Duque P, Szakonyi D. (eds) 2494. Humana, NY. [10.1007/978-1-0716-2297-1\_5](https://doi.org/10.1007/978-1-0716-2297-1_5) BC. Citations 5

**9.** Fichtner F, et al. Beveridge C. Plasticity of bud outgrowth varies at cauline and rosette nodes in Arabidopsis thaliana Plant Physiology (2022). 188 (3)1586-1603. OA. Citations 5 (5/8)

**10.** Muñoz A, Pillot JP, **Cubas P©,** Rameau C. Methods for phenotyping shoot branching and testing strigolactone bioactivity for shoot branching in Arabidopsis and pea. Meth. Mol. Biol. Strigolactones: Methods and Protocols (2021) 2309:115-127. Eds Prandi & Cardinale. Springer. 10.1007/978-1-0716-1429-7\_10 BC Cit. 3

**11.** Sánchez E, Cubas P, Cardinale F, Visentin I. Evaluation of the bioactivity of strigolactone-related molecules by a quantitative luminometer bioassay Meth. Mol. Biol. Strigolactones: Methods and Protocols (2021) 2309:191-200. Eds by Prandi and Cardinale. Springer. 10.1007/978-1-0716-1429-7\_15. BC

**12.** **Cubas, P©.** Plant Seasonal Growth: How Perennial Plants Sense That Winter Is Coming Current Biology (2020) 30 (1) R21-R23 IF 2018: 9.7 Q1 R, Citations 9

13. Rameau C et al. **Cubas P©.** Chapter 2: Strigolactones as plant hormones. Strigolactones -Biology and Applications. (2019) 47-87 Eds Koltai, Prandi and Hooper. Springer Nature. ISBN 978-3-030-12152-5. BC

**14.** Struk S, et al. Goormachtig S©.. Exploring the protein-protein interaction landscape in plants Plant, Cell & Environment (2018) Aug 29. 10.1111/pce.13433. IF 2018: 5,41. Q1 R. Citations 52 (5/6)

**15.**Sanchez E, et al. Prandi C©. Structure–activity relationships of strigolactones via a novel, quantitative in planta bioassay. J Exp Bot (2018) 69(9):2333-2343. (11/13) IF 2018: 5,3. Q1 OA. Citations 14

**16.**Yan Yang\* et al. **Pilar Cubas©,** Genji Qin©. The TIE1 transcriptional repressor controls shoot branching by directly repressing BRANCHED1 in Arabidopsis. PLoS Genetics (2018) 14(3): e1007296. OA. Cit. 29. IF: 5,5.

**17.**Sanchez E., Tarancón C., and **Cubas P.©** To grow or not to grow, a power-saving program induced in dormant buds. Current Opinions in Plant Science (2017) 41:102-109. doi: 10.1016/j.pbi.2017.10.001.

IF(2017): 7,34. Q1. R Citations: 41

**18.** Tarancón C. et al. **Cubas P.©** A conserved carbon-starvation response underlies bud dormancy in woody and herbaceous species. Front. Plant Science (2017) 10.3389/fpls.2017.00788. IF (2017): 4,495. OA Citations: 67 Highlighted as “of outstanding interest” in Current Opinion in Plant Biology (2021), 63:102092.

**19.** González-Grandío E. et al. **Cubas P.©** Abscisic acid signaling is controlled by a BRANCHED1/HD-ZIP I cascade in Arabidopsis axillary buds PNAS (2017) 10.1073/pnas.1613199114 5y IF 2016: 10,28. OA Cit: 174

**20**. Nicolás M. and **Cubas P.©** TCP genes: new kids in the signaling block Curr. Op. Plant Biol (2016) 13;33:33-41.10.1016/j.pbi.2016.05.006. IF (2015-2016 JCR): 6,7. Q1 R Citations 147

**21.** Oliveros JC et al. Pazos F© Breaking-Cas-Interactive design of guide RNAs for CRISPR-Cas experiments for ENSMBL genomes NAR (2016) 10.1093/nar/gkw407. 5-year IF 2016: 8,6. Q1 OA Citations 109 (6/7)

**22.** Nicolás M., et al. **Cubas P.©** A Recently Evolved Alternative Splice Site in the BRANCHED1a Gene Controls Potato Plant Architecture. Current Biology (2015) 25, 1–11 5-year IF 2015: 9,7. Q1 OA Citations 86

**23.** Chevalier F. et al. **Cubas P.©** Strigolactone promotes degradation of AtD14, an α/β hydrolase essential for SL signalling in Arabidopsis thaliana Plant Cell (2014) 26: 1134-1150 5-year IF 2014: 10,5. Q1 OA Citations 159.

**C.3. Research projects, indicating your personal contribution (last 10 years).**

1. Potential pioneer factor activity of the complex BRANCHED1/NF-YB/NF-YC in axillary bud dormancy reprogramming (ADORE). IP1: Pilar Cubas; IP2: Michael Nicolas. // Ministerio de Ciencia e Innovación// *En proceso de Evaluación*

**1.** Development of a revised plant synthetic biology toolkit to advance crop improvement (REPLANT) (Project No: 238256) Supervisor: Pilar Cubas. Beneficiary: Eduardo Gonzalez Grandío HORIZON-MSCA-2021-PF-01 Excellence Science Marie Curie Actions. Funding: 206.641,20 Duration: 2 años

**2.**Central integrators of stimuli controlling shoot branching: SMXL-BRC1 interactions (CINBRA)

(PID2020-112779RB-I00). IP: Pilar Cubas // Ministerio de Ciencia e Innovación// Financiación recibida (costes directos): 230.000 €. 01/09/2021-31/08/2024/

**3.** Development of a revised plant synthetic biology toolkit to advance crop improvement (REPLANT) H2020-MSCA-IF-ER-RI 2020 Marie Curie Actions. IP: Pilar Cubas (Beneficiario Eduardo Gonzalez Grandio). Financiación recibida 206.641,20.

**4.** Novel gene regulatory networks and master regulators of bud dormancy (BIO2017-84363-R) IP: Pilar Cubas // MINECO // Financiación recibida: 240.000 € Duración: 01/01/2018-31/12/2020//

**5.** From strigolactone signaling to bud dormancy gene regulation (STORM) (BIO2014-57011-R) IP: Pilar Cubas // MINECO // Financiación recibida: 225.000 € Duración: 01/01/2015-31/12/2017 //

**6.** Herramientas genéticas para mejorar la arquitectura vegetal (BIO2011-25687) IP: Pilar Cubas // Ministerio de Ciencia y Tecnología// Financiación recibida: 140.000 € Duración: 01/01/2012-31/12/2014 //

**Invited talks (last 5 years)**

2024 -University of Oxford, UK

-University of Tel Aviv, Israel

-Institut de Recherche en Horticulture et Semences (IRHS) INRAE, Angers (Francia)

2022 -Instituto de Fisiología y Recursos Genéticos Vegetales (IFRGV) Argentina

-College of Horticulture, Nanjing Agricultural University, Nanjing (China)

-International Conference on Arabidopsis Research 2022, Belfast (Irlanda)

-University of Queensland. Australia

2021 -University of Pennsilvania. Biology Department, Pennsilvania. EEUU

2019 -23th International Congress on Plant Growth Substances (IPGSA) Paris (Francia)

-Max Plank for Plant Breeding Research, Colonia (Alemania)

-Universidad de Munich (Alemania)

-University of Freising (Alemania)

2018 -University of Helsinki (Finlandia)

-Plant Dormancy Symposium 2018 Kyoto (Japón)

-UPSC (Cutting-Edge Seminar) (Umea)

-University of Oslo (Noruega)

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

**1.** R&D Contract R&D (Ref. 20230897) con Ramiro Arnedo SA. IP: Pilar Cubas Financiacion: 137.064 €. 03/02/2023-03/03/2025

**2.** R&D Contract (Ref. BDC20194876) con Ramiro Arnedo SA. IP: Pilar Cubas Financiacion: 102.459,00 €. 01/07/2019-01/07/2021

**3.** CONTRATO DE LICENCIA EP11166057.7 2 Investigador: Pilar Cubas Domínguez

Código del Contrato: 050402120140 Empresa: NINSAR AGROSCIENCES, S.L. 02/2012 05/2031

**4.** LICENCIA DE LA PATENTE Nº 200900088 // Investigador: Pilar Cubas Domínguez.

Código del Contrato: OTT20090199 // Empresa: NINSAR AGROSCIENCES, S.L. /02/2009-02/2019