

## Abbreviated CURRICULUM VITAE

### Part A. PERSONAL INFORMATION

First and Family name	David A. Cano González		
Social Security, Passport, ID number	28594563C	Age	50
Researcher codes	WoS Researcher ID (*)	B-8013-2015	
	SCOPUS Author ID(*)	7003981266	
	Open Researcher and Contributor ID (ORCID) **	0000-0001-6264-3288	

(\*) At least one of these is mandatory (\*\*) Mandatory

#### A.1. Current position

Name of University/Institution	Instituto de Biomedicina de Sevilla		
Department	Cardiovascular and other systemic diseases		
Address and Country	Avenida Manuel Siurot s/n, 41013 Sevilla		
Phone number	955923051	E-mail	<a href="mailto:Dcano-ibis@us.es">Dcano-ibis@us.es</a>
Current position	Científico Titular CSIC	From	19/7/2018
Keywords	Embryonic development, pancreas, endocrine diseases, diabetes, islet, beta cells, pituitary, pituitary tumors, transgenic mice		

#### A.2. Education

Grade/PhD	University	Year
Biology	University of Seville	1995
PhD in Biology	University of Seville	2001

#### A.3. Indicadores Generales

*Sexenios de Investigación*: 4 (1995-2001; 2002-2007; 2008-2013; 2014-2019).

PhD supervision: 5 completed plus 1 ongoing (expected defense end of 2022).

*Global publications statistics* (updated 9/2021)

Total number of publications: **56**. Number of publications in 1<sup>st</sup> quartile: **44**.

Total number of citations= **2077**; (Web of Science); H Index = **23** (Web of Science).

#### Part B. CV SUMMARY (max. 3500 characters, including spaces)

Bachelor's degree in Biology. PhD in Genetics at the University of Seville (2001). I trained as a developmental biologist during my postdoctoral stay at the University of California San Francisco (2002-2008) where I carried out research on the molecular mechanisms governing pancreas embryonic formation as well as diseases related to this organ. I obtained fellowships from the Education Spanish Ministry (2002/04), Juvenile Diabetes Research Foundation (2005/06) and the California Institute of Regenerative Medicine (2007/08). In 2008 I joined the Institute of Biomedicine of Sevilla (IBiS) supported by a *Ramon y Cajal* program contract to develop an independent research line in pancreatic beta cell formation, function and regeneration. In 2014 I was awarded with a *Nicolas Monardes* contract from the Andalusian Health Service that allowed me to establish a collaboration with the Endocrinology Unit of Virgen del Rocío Hospital in translational research focused in human endocrine diseases associated to pituitary tumor and the identification of prognostic markers. In 2018 I obtained a position as Tenured Scientist at the Spanish National Research Council (CSIC) to work on pancreatic  $\beta$ -cell formation and (dys) function. The research in our group has been funded by grants from the Ministry of Science and Innovation, ISCIII (FIS), regional grants as well as contracts with pharmaceutical companies.

Teaching in the "Research in Biomedicine" Master program and Biomedicine degree of University of Seville since 2014.

#### Part C. RELEVANT MERITS

##### C.1. Publications including books (since January 2009). Complete list of Pubmed records:

<https://www.ncbi.nlm.nih.gov/myncbi/david.cano.1/bibliography/public/>

1. Puri S\*, Cano DA\*, Hebrok M. 2009. *A role for von Hippel-Lindau protein in pancreatic beta-cell function*. Diabetes 58:433-441. \* shared first authorship. Editorial comment in Nature Medicine (2009, 15:247-9).
2. Cervantes S\*, Lau J\*, Cano DA\*, Borromeo-Austin C, Hebrok M. 2010. *Primary cilia regulate Gli/Hedgehog activation in pancreas*. Proc Natl Acad Sci U S A 107:10109-10114. \* shared first authorship.



3. Morris JPt, **Cano DA**, Sekine S, Wang SC, Hebrok M. 2010. *Beta-catenin blocks Kras-dependent reprogramming of acini into pancreatic cancer precursor lesions in mice*. J Clin Invest 120:508-520.
4. Luque RM, Ibanez-Costa A, Lopez-Sanchez LM, Jimenez-Reina L, Venegas-Moreno E, Galvez MA, Villa-Osaba A, Madrazo-Atutxa AM, Japon MA, de la Riva A, **Cano DA**, Benito-Lopez P, Soto-Moreno A, Gahete MD, Leal-Cerro A, Castano JP. 2013. *A cellular and molecular basis for the selective desmopressin-induced ACTH release in Cushing disease patients: key role of AVPR1b receptor and potential therapeutic implications*. J Clin Endocrinol Metab 98:4160-4169.
5. Martin-Rodriguez JF, Madrazo-Atutxa A, Venegas-Moreno E, Benito-Lopez P, Galvez MA, **Cano DA**, Tinahones FJ, Torres-Vela E, Soto-Moreno A, Leal-Cerro A. 2013. *Neurocognitive function in acromegaly after surgical resection of GH-secreting adenoma versus naive acromegaly*. PLoS One 8:e60041.
6. Munoz-Bravo JL, Hidalgo-Figueroa M, Pascual A, Lopez-Barneo J, Leal-Cerro A, **Cano DA**. 2013. *GDNF is required for neural colonization of the pancreas*. Development 140:3669-3679.
7. Puri S, Garcia-Nunez A, Hebrok M, **Cano DA**. 2013. *Elimination of von Hippel-Lindau function perturbs pancreas endocrine homeostasis in mice*. PLoS One 8:e72213.
8. **Cano DA**, Soto-Moreno A, Leal-Cerro A. *Utilidad clínica de los estudios moleculares en los adenomas hipofisarios*. Capitulo de libro. Libro: Actualización en neuroendocrinología. ELSEVIER. 2014. ISBN: 978-84-9022-538-7
9. **Cano DA**, Soria B, Martin F, Rojas A. 2014. *Transcriptional control of mammalian pancreas organogenesis*. Cell Mol Life Sci 71:2383-2402.
10. **Cano DA**, Soto-Moreno A, Leal-Cerro A. 2014. *Genetically engineered mouse models of pituitary tumors*. Front Oncol 4:203.
11. Delgado I, Carrasco M, Cano E, Carmona R, Garcia-Carbonero R, Soria B, Martin F, **Cano DA**, Munoz-Chapuli R, Rojas A. 2014. *GATA4 loss in the septum transversum mesenchyme promotes liver fibrosis in mice*. Hepatology 59:2358-2370.
12. Leal-Cerro A, Martin-Rodriguez JF, Ibanez-Costa A, Madrazo-Atutxa A, Venegas-Moreno E, Leon-Justel A, Garcia-Hernandez N, Luque RM, Castano JP, **Cano DA**, Soto-Moreno A. 2014. *Desmopressin test in the diagnosis and follow-up of cyclical Cushing's disease*. Endocrinol Nutr 61:69-76.
13. Martin-Rodriguez JF, Cervera-Barajas A, Madrazo-Atutxa A, Garcia-Luna PP, Pereira JL, Castro-Luque J, Leon-Justel A, Morales-Conde S, Castillo JR, Leal-Cerro A, **Cano DA**. 2014. *Effect of bariatric surgery on microvascular dysfunction associated to metabolic syndrome: a 12-month prospective study*. Int J Obes (Lond) 38:1410-1415.
14. Garcia-Heredia JM, Felipe-Abrio B, **Cano DA\***, Carnero A\*. 2015. *Genetic modification of hypoxia signaling in animal models and its effect on cancer*. Clin Transl Oncol 17:90-102.
15. Lopez-Escobar B, **Cano DA**, Rojas A, de Felipe B, Palma F, Sanchez-Alcazar JA, Henderson D, Ybot-Gonzalez P. 2015. *The effect of maternal diabetes on the Wnt-PCP pathway during embryogenesis as reflected in the developing mouse eye*. Dis Model Mech 8:157-168.
16. Martin-Rodriguez JF, Munoz-Bravo JL, Ibanez-Costa A, Balcerzyk M, Leal-Campanario R, Luque RM, Castano JP, Venegas-Moreno E, Soto-Moreno A, Leal-Cerro A, **Cano DA**. 2015. *Molecular Characterization of Growth Hormone-producing Tumors in the GC Rat Model of Acromegaly*. Sci Rep 5:16298.
17. Leon-Justel A, Madrazo-Atutxa A, Alvarez-Rios AI, Infantes-Fontan R, Garcia-Arnes JA, Lillo-Munoz JA, Aulinas A, Sanchez-de-Abajo A, Fajardo-Montanana C, Ortuno-Alonso M, Salinas-Vert I, Granada ML, **Cano DA**, Leal-Cerro A, Spanish CSG. 2016. *A Probabilistic Model for Cushing's Syndrome Screening in At-Risk Populations: A Prospective Multicenter Study*. J Clin Endocrinol Metab 101:3747-3754.
18. Moreno-Castellanos N, Guzman-Ruiz R, Cano DA, Pereira-Cunill JL, Garcia-Luna PP, Morales-Conde S, Socas-Macias M, Vazquez-Martinez R, Leal-Cerro A, Malagon MM. 2016. *The Effects of Bariatric Surgery-Induced Weight Loss on Adipose Tissue in Morbidly Obese Women Depends on the Initial Metabolic Status*. Obes Surg 26:1757-1767.
19. Munoz-Bravo JL, Flores-Martinez A, Puri S, Taketo MM, Rojas A, Hebrok M, **Cano DA**. 2016. *Loss of Pancreas upon Activated Wnt Signaling Is Concomitant with Emergence of Gastrointestinal Identity*. PLoS One 11:e0164714.
20. **Cano DA**, Leal-Cerro A. 2017. *An approach to screening for Cushing's syndrome in non-specialized health care settings*. Endocrinol Diabetes Nutr 64:407-408.
21. Ramirez S, Gomez-Valades AG, Schneeberger M, Varela L, Haddad-Tovoll R, Altirriba J, Noguera E, Drougard A, Flores-Martinez A, Imbernon M, Vidal-Itriago A, Cervantes S, Gasa R, Nogueiras R, Gama-Perez P, Garcia-Roves PM, Cano DA, Knauf C, Servitja JM, Horvath TL, Gomis



- R, Zorzano A, Claret M. 2017. *Mitochondrial Dynamics Mediated by Mitofusin 1 Is Required for POMC Neuron Glucose-Sensing and Insulin Release Control*. Cell Metab 25:1390-1399 e1396.
22. Cano DA, Rojas, A. *Desarrollo embrionario del islote pancreático*. Capítulo de libro. Libro: Tratado Diabetes Mellitus (2ª edición) de la Sociedad Española de Diabetes.. EDITORIAL MEDICA PANAMERICANA. 2017. ISBN: 978-84-9110-145-1.
23. Flores-Martinez A, Garcia-Nunez A, Rojas A, Cano DA. 2018. *Stabilization of HIF-2alpha impacts pancreas growth*. Sci Rep 8:13713.
24. Venegas-Moreno E, Vazquez-Borrego MC, Dios E, Gros-Herguido N, Flores-Martinez A, Rivero-Cortes E, Japon MA, Luque RM, Castano JP, Cano DA\*, Soto-Moreno A\*. 2018. *Association between dopamine and somatostatin receptor expression and pharmacological response to somatostatin analogues in acromegaly*. J Cell Mol Med 22:1640-1649. **\*Shared corresponding authorship.**
25. Villamayor L, Rodriguez-Seguel E, Carrasco M, Bru-Tari E, Mellado-Gil JM, Gauthier BR, Martinelli P, Quesada I, Soria B, Martin F, Cano DA, Rojas A. 2018. *GATA6 Controls Insulin Biosynthesis and Secretion in Adult beta-Cells*. Diabetes 67:448-460.
26. Daly A, Cano DA, Venegas E, Petrossians P, Dios E, Castermans E, Flores-Martinez A, Bours V, Beckers A, Soto A. 2019. *AIP and MEN1 mutations and AIP immunohistochemistry in pituitary adenomas in a tertiary referral center*. Endocr Connect 2019 Apr; 8(4): 338-348
27. Garcia-Martinez A, Cano DA, Flores-Martinez A, Gil J, Puig Domingo M, Webb SM, Soto A, Pico AM. 2019. *Why don't corticotroph tumors always produce Cushing's disease?* Eur J Endocrinol. 2019 Sep;181(3):351-361.
28. Herguido NG, Fuentes ED, Venegas-Moreno E, Maorad LB, Flores-Martinez A, Ruiz PR, Duenas MC, Roldan F, Fajardo E, Ruiz-Valdepenas EC, Martin Schrader I, Cano DA, Soto-Moreno A. 2019. *Surgical Outcome and Treatment of Thyrotropin-Secreting Pituitary Tumors in a Tertiary Referral Center*. World Neurosurg 130: e634-e639.
29. Martin-Rodriguez JF, Ramos-Herrero VD, Parras GG, Flores-Martinez A, Madrazo-Atutxa A, Cano DA, Gruart A, Delgado-Garcia JM, Leal-Cerro A, Leal-Campanario R. 2019. *Chronic adult-onset of growth hormone/IGF-I hypersecretion improves cognitive functions and LTP and promotes neuronal differentiation in adult rats*. Acta Physiol (Oxf) 2020 Jun;229(2):e13293.
30. Martinez Ortega AJ, Venegas-Moreno E, Dios E, Remon Ruiz PJ, Marquez Rivas FJ, Valdepenas EC, Kaen AM, Cano DA, Soto-Moreno A. 2019. *Surgical Outcomes and Comorbidities in Cushing Disease: 30 Years of Experience in a Referral Center*. World Neurosurg 122: e436-e442.
31. Venegas-Moreno E, Flores-Martinez A, Dios E, Vazquez-Borrego MC, Ibanez-Costa A, Madrazo-Atutxa A, Japon MA, Castano JP, Luque RM, Cano DA\*, Soto-Moreno A\*. 2019. *E-cadherin expression is associated with somatostatin analogue response in acromegaly*. J Cell Mol Med 23:3088-3096. **\*Shared corresponding authorship.**
32. Villamayor L, Cano DA, Rojas A. 2020. *GATA factors in pancreas development and disease*. IUBMB Life. Jan;72(1):80-88
33. Vázquez-Borrego MC, Gupta V, Ibáñez-Costa A, Gahete MD, Venegas-Moreno E, Toledano-Delgado Á, Cano DA, Blanco-Acevedo C, Ortega-Salas R, Japon MA, Barrera-Martín A, Vasiljevic A, Hill J, Zhang S, Halem H, Solivera J, Raverot G, Gálvez MA, Soto-Moreno A, Paez-Pereda M, Culler MD, Castaño JP, Luque RM. *A Somatostatin Receptor Subtype-3 (SST 3) Peptide Agonist Shows Antitumor Effects in Experimental Models of Nonfunctioning Pituitary Tumors*. Clin Cancer Res. 2020 Feb 15;26(4):957-969.
34. Rodríguez-Seguel E, Villamayor L, Arroyo N, De Andrés MP, Real FX, Martín F, Cano DA, Rojas A. 2020. *Loss of GATA4 causes ectopic pancreas in the stomach* J Pathol. Apr;250(4):362-373.
35. Flores-Martinez A, Venegas-Moreno E, Dios E, Remón Ruíz P, Herguido NG, Vazquez-Borrego MC, Madrazo-Atutxa, A, Japon MA, Kaen AM, Valdepeñas EC, Roldán F, Castaño JP, Luque RM, Cano DA\*, Soto-Moreno A\*. **\*Shared corresponding authorship.** *Quantitative analysis of somatostatin and dopamine receptors gene expression levels in nonfunctioning pituitary tumors and association with clinical and molecular aggressiveness features*. Journal of Clinical Medicine 2020 Sep 22;9(9):3052.
36. Arroyo N, Villamayor L, Díaz I, Carmona R, Ramos-Rodríguez M, Muñoz-Chapuli R, Pasquali L, Toscano MG, Martin F, Cano DA, Rojas A. *GATA4 induces liver fibrosis regression by deactivating hepatic stellate cells*. JCI Insight. 2021 Oct 26: e150059.
37. Martínez-Ortega, A., Flores-Martinez A, Venegas-Moreno E, Dios E, Del Can D., Rivas E., Kaen AM, Valdepeñas EC, Fajardo E., Roldán F, Gonzalez-Rivera N., Oliva R. Fernandez-Peña JI, Soto-



Moreno A, Cano DA. *Sex Hormone Receptor Expression in Craniopharyngiomas and Association with Tumor Aggressiveness Characteristics*. Journal of Clinical Medicine 2022 Jan 5;11(1):281.

## **C.2. Research projects and grants (as Principal investigator)**

- Regeneración de células beta productoras de insulina. Ministerio de Ciencia e Innovación (SAF2008-02469). 2009-2011.
- Regeneración de células beta pancreáticas. Consejería de Salud, Junta de Andalucía. 2009-2011
- Análisis del factor de transcripción inducible por hipoxia (HIF) en la función, formación y regeneración del páncreas endocrino. Ministerio de Ciencia e Innovación (SAF2011-26805). 2012-2013.
- Marcadores moleculares para la individualización de estrategias terapéuticas en pacientes con tumores hipofisarios y búsquedas de nuevas dianas terapéuticas. Consejería De Igualdad Salud Y Políticas Sociales. 2013-2014.
- Investigating the role of c-Myc in pancreatic beta cell replication. The Leona M. and Harry B. Helmsley Charitable Trust (2012PG-T1D017). 2013-2014. Coordinator: Matthias Hebrok.
- Función del factor inducible por hipoxia (HIF) en la formación de tumores de páncreas. Consejería de Innovación Junta de Andalucía (CTS-7478). 2013-2016.
- Adenomas hipofisarios de comportamiento agresivo. Del modelo animal al paciente. Papel de las vías de señalización hipoxia/HIF y PI3K/AKT en el pronóstico y como dianas terapéuticas. Proyectos de investigación en Salud, Instituto de Salud Carlos III PI16/00175. 2017-2019 (extended through 2020).
- El papel de HIF-2 $\alpha$  en la formación y función de células beta pancreáticas (BETAHIF). Ministerio de Ciencia e Innovación PID2020-120095RB-I00. 2020-2023.

## **C.3. Contracts**

1. Pre-clinical study in a cohort of patients with Non-Functioning Pituitary Adenomas. Novartis Oncology Spain. 2017-2018. Co-PIs: David Cano /Alfonso Soto. (30.000 €).
2. Retrospective study to identify predictive biomarkers for response to somatostatin analogs in acromegaly patients. Novartis Oncology Spain. 2016-2017. Investigador colaborador. PI: Alfonso Soto Moreno, HUVR. (46.590 €).
3. Effect of GH and IGF-I hypersecretion on neurocognitive functions in adult rats with induced GH-secreting tumor. Pfizer Spain. 2013-2014. Co-PIs: David Cano, Alfonso Leal (33.000 €).

## **C.4. Awards and honors**

- Postdoctoral Fellowship from Ministerio de Educación, Cultura y Deporte (2002-2004).
- Postdoctoral Fellowship from Juvenile Research Diabetes Foundation (2004 -2006).
- Postdoctoral fellowship "California Institute for Regenerative Medicine" (2006-2007).
- Ramon y Cajal Program Contract (2008-2012)
- Nicolas Monardes (Junta de Andalucía) Program Contract (2014-2018)
- "José Antonio Hedo" Young Investigator Award from Sociedad Española de Diabetes (2012).

## **C5. Editorial board membership**

- Guest Associate Editor for Frontiers in Oncology. Research Topic "Genetically modified mouse models of cancer" (2014)
- Review Editorial Board Journal "Frontiers in Systems and Translational Endocrinology". Since 2014.
- Editorial Board member. Journal "Scientific Reports". Since 2016.
- Editorial Board member. Journal "Endocrines". Since 2020.

## **C.6. Services to professional organizations**

- Secretary of the Islet Study Group of the Spanish Society for Diabetes (2010-2015).
- Co-organizer of the Workshop on Biomedicine "Liver and Pancreas Development: From Development to Disease". Universidad Internacional de Andalucía. Baeza, November 2011.
- Reporting and video presentations of highlights of Annual meetings of American Diabetes Association's (ADA) 72nd and 76nd Scientific Sessions for the Sociedad Española de Diabetes. Junio 2012. Filadelfia and June 2016, New Orleans.





- Member of the Organizing Committee of the *XXV Congreso de la Sociedad Española de Diabetes*. (2013)
- Co-coordinator of XIV IBiS scientific seminars (2014-2015).
- Reviewer of scientific communications for the ENDO (Endocrine Society) Annual Meetings 2016, 2017 y 2018.
- Member Committee of the *XII Congreso de la Sociedad Española de Obesidad*. (2017).
- Member Committee of the *61 Congreso de la Sociedad Española de Endocrinología y Nutrición* (2021).
- Member, ad hoc recruitment/promotion committees for Escala de Científicos Titulares de OPIS, Ministerio de Ciencia, Innovación y Universidades. 2019 and 2020.
- Member of diverse thesis committees (11).
- Evaluator for applications to European Reference Networks, 2021

#### **C7. Grant reviewing:**

- Regular reviewer for the Agencia Nacional de Evaluación y Prospectiva (ANEP) for different public and private calls including FIS, MICINN, Asociación Española contra el Cáncer, Generalitat Valenciana, etc. Since 2011.
- Regular reviewer for Subvenciones para la financiación de la Investigación, Desarrollo e Innovación Biomédica y en Ciencias de la Salud en Andalucía, Consejería de Salud y Bienestar Social, Junta de Andalucía. Since 2012.
- Agencia Andaluza del Conocimiento, Junta de Andalucía. 2014, 2015
- Grants and Awards from the Sociedad Española de Diabetes. 2014-2018.
- Fondo para la Investigación Científica y Tecnológica, Argentina, 2015
- Proyectos de Investigación y Desarrollo en Salud del Gobierno Vasco, 2020
- Marie Skłodowska-Curie Individual Fellowships, European Commission. 2016-2021.
- Bulgarian Science Fund (2020).
- Romanian Higher Education Research Development and Innovation Funding, 2021.
- Latvian Council of Science, 2021.

**C8. Reviewer for Scientific journals:** Plos Genetics, Diabetes, Development, Oncogene, Scientific Reports, PLOS One, Journal of Endocrinology, BMC Cancer, Endocrine, Journal of Molecular Endocrinology, Journal of Endocrine Society, Diabetes and Vascular Research, Frontiers in Endocrinology, Frontiers in Medicine

#### **C9. Participation in scientific networks:**

- Grupo de investigación PAI CTS-444 Endocrinología, Metabolismo y Nutrición clínica.
- CIBERER. Grupo clínico vinculado Medicina Endocrina, GCV15.
- Grupo de Trabajo Islotes Pancreáticos de la Sociedad Española de Diabetes.
- Grupo de Trabajo de Neuroendocrinología de la Sociedad Española de Endocrinología.

#### **C.10. Students supervision**

- Master students (TFMs): 9. Undergraduate students (TFGs): 3
- MD residents rotatory stays (one month) at experimental laboratory: 16
- FP histology and pathology students: 3

#### **C11. Major teaching activities**

- Lecturer and practical lessons, Grado en Biomedicina, Universidad de Sevilla. Since 2013-14 academic course. 2,5 créditos/curso.
- Lecturer and practical lessons, Master in Biomedicine Research, Universidad de Sevilla. Since 2009-10 academic course. 0,6 créditos/curso.
- Lecturer and practical lessons, Master in Biomedicine Research, Universidad de Córdoba. 2009-10 through 2012-13 academic courses. 1 créditos/curso.
- Member of TFM's evaluation committee. Since 2010-11 academic course.
- Lecturer in Workshop en Patología Tumoral Hipofisaria, organized by the UGC Endocrinología y Nutrición del Hospital Universitario Virgen del Rocío oriented to MMs in residency and FEAS. Course accredited by ACSA (Agencia de Calidad Sanitaria de Andalucía). 2015, 2016, 2017 y 2018.