MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

CURRICULUM VITAE (maximum 4 pages)

Part A. PERSONAL INFORMATION

CV date	18/09/2024

First and Family name	Emilio Arsenio Martínez García	
Researcher numbers	Researcher ID	http://www.researcherid.com/rid/I-1901-2015
	Orcid code	https://orcid.org/0000-0003-1260-9721

A.1. Current position

Name of University/Institution	University of Murcia		
Department	Animal medicine and Surgery		
Address and Country	Campus de Espinardo, 30100, Murcia, Spain		
Phone number	E-mail:	emilio@um.es	
Current position	Professor	From	1994
Espec. cod. UNESCO	310411		
Key words	Reproduction, porcine, embryo, sperm, embryo transfer		

A.2. Education

PhD	University	Year
Doctor in Veterinary	Murcia	1984
Diplomat of the European College of Animal Reproduction		2000
Diplomat of the European College of Porcine Health Management		2010

A.3. JCR articles, h Index, thesis supervised…

Number of awarded six-year research periods: **6**. Date of the last: **2019**.
Number of supervised Ph.D Thesis (last 10 years): **7**.
Author impact analysis (period 1991-2021, Web of Science 2021-05-04): h-index: **42**, based on **209** papers. Total citations: **5.940** times, average citations per article: **28,42**. Total publications in in first quartile (Q1): **136** (**76.8%**).
Average citations/year during the last 5 years (not including the current year): **476,8**.

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

He was born in Madrid, Spain (1956). He received his degree in veterinary medicine in 1980 from Complutense University of Madrid, Spain, and his Ph.D. in 1984 from University of Murcia, Spain. Since this time he has been in research positions and in academia at Murcia University. He was Associate Professor of Animal Reproduction in 1986 and was promoted to Professor of Animal Reproduction in 1994. He is the head of the Animal Reproduction Research Group of the University of Murcia from its constitution in 1987. The group is awarded certification as a research group of excellence in the Region of Murcia from 2007. He is elected member of the Royal Academy of Medicine and Surgery of Murcia, Spain (1994) and of the Academy of Veterinary Sciences of Murcia, Spain (2010), and Diplomat of ECAR (European College of Animal Reproduction; 2000) and ECPHM (European College of Porcine Health Management; 2009). He has been Visiting Professor at the University of Columbia-Missouri (USA) for 12 months and President of the Spanish Association of Animal Reproduction (AERA) from 2012 until 2017. He has over 150 peer reviewed research publications (Index h = 36) and over 200 conference presentations. He has been Principal Investigator of more than 50 research projects and contracts, and has supervised 26 Ph.D. Thesis. From 2007, he is Associate-Editor of the journal Reproduction in Domestic Animals (Impact index = 1.422). He is the author of two patents published in the United States, Canada, Australia and in 12 countries of the European Union and licensed to American and European companies. One of them was awarded by the Ministry of Education and Culture of the Autonomous Community of the Region of Murcia with the First Prize i-patents 2006 to the Promotion of the Transfer of Research Results. With more than 25 years' experience in porcine reproductive biology and biotechnology, he presents a solid background of different technologies such as deep intrauterine insemination, cryopreservation of gametes and embryos, in vitro production of

embryos, embryo collection and non-surgical embryo transfer, and technology for sexing sperm. The group has developed several biomodels to study the regulation of the oviductal and uterine maternal environment by gametes and embryos in vivo. This group produced the first piglets born worldwide by non-surgical deep uterine embryo transfer with in vivo fresh and vitrified embryos, the first litters of pre-selected sex by minimally invasive procedures and the first litters born combining a low number of frozen sperm and deep intrauterine insemination. Currently one of the main challenges of his group is to develop practical protocols that can be used commercially in the field of non-surgical transfer of embryos, both fresh, refrigerated and cryopreserved, which will have an unquestionable impact on the pig sector both from a productive and economic point of view.

Part C. RELEVANT MERITS

C.1. Publications (including books) (Last 10 years)

Cuello C, Martinez CA, Cambra JM, Parrilla I, Rodriguez-Martinez H, Gil MA, Martinez EA. 2021. Effects of Vitrification on the Blastocyst Gene Expression Profile in a Porcine Model. Int J Mol Sci; 22:1222.

Martinez CA, Cambra JM, Gil MA, Parrilla I, Alvarez-Rodriguez M, Rodriguez-Martinez H, Cuello C, Martinez EA. 2020. Seminal Plasma Induces Overexpression of Genes Associated with Embryo Development and Implantation in Day-6 Porcine Blastocysts. Int J Mol Sci; 21:3662.

Parrilla I, Martinez CA, Cambra JM, Lucas X, Ferreira-Dias G, Rodriguez-Martinez H, Cuello C, Gil MA, Martinez EA. 2020.Blastocyst-Bearing Sows Display a Dominant Anti-Inflammatory Cytokine Profile Compared to Cyclic Sows at Day 6 of the Cycle. Animals (Basel); 10:2028

Gil MA, Martinez CA, Nohalez A, Parrilla I, Roca J, Wu J, Ross PJ, Cuello C, Izpisua JC, Martinez EA. 2017. Developmental competence of porcine genome-edited zygotes. Mol Reprod Dev; 84:814-821.

Wu J, Platero-Luengo A, Sakurai M, Sugawara A, Gil MA, Yamauchi T, Suzuki K, Bogliotti YS, Cuello C, Morales Valencia M, Okumura D, Luo J, Vilariño M, Parrilla I, Soto DA, Martinez CA, Hishida T, Sánchez-Bautista S, Martinez-Martinez ML, Wang H, Nohalez A, Aizawa E, Martinez-Redondo P, Ocampo A, Reddy P, Roca J, Maga EA, Esteban CR, Berggren WT, Nuñez Delicado E, Lajara J, Guillen I, Guillen P, Campistol JM, Martinez EA, Ross PJ, Izpisua Belmonte JC. 2017. Interspecies Chimerism with Mammalian Pluripotent Stem Cells. Cell; 168:473-486.

Cuello C, Martinez CA, Nohalez A, Parrilla I, Roca J, Gil MA, Martinez EA. 2016. Effective vitrification and warming of porcine embryos using a pH-stable, chemically defined medium. Sci Rep; 6:33915.

Martínez EA, Cuello C, Parrilla I, Martinez CA, Nohalez A, Vazquez JL, Vazquez JM, Roca J, Gil MA. 2016. Recent advances towards the practical application of embryo transfer in pigs. Theriogenology 85:152-161.

Martinez EA, Martinez CA, Nohalez A, Sanchez-Osorio J, Vazquez JM, Roca, Parrilla I, Gil MA 2015. Nonsurgical deep uterine transfer of vitrified, in vivo-derived, porcine embryos is as effective as the default surgical approach. Sci Rep; 5:10587.

Martinez EA, Angel MA, Cuello C, Sanchez-Osorio J, Gomis J, Parrilla I, Vila J, Colina I, Diaz M, Reixach J, Vazquez JL, Vazquez JM, Roca J, Gil MA. 2014. Successful non-surgical deep uterine transfer of porcine morulae after 24-hour culture in a chemically defined medium. PLoS One; 13;9:e104696.

Angel MA, Gil MA, Cuello C, Sanchez-Osorio J, Gomis J, Parrilla I, Vila J, Colina I, Diaz M, Reixach J, Vazquez JL, Vazquez JM, Roca J, Martinez EA. 2014. The effects of superovulation of donor sows on ovarian response and embryo development after nonsurgical deep-uterine embryo transfer Theriogenology; 81:832-839.

C.2. Research projects and grants

Increasing Efficiency in Porcine Embryo Transfer. Ministerio de Ciencia, Innovación y Universidades (RTI2018-093525-B-I00). PI: Emilio Martínez García y Cristina Cuello Medina. 2019-2022. 205.000 €.

Improving the efficiency of porcine production through news procedures of embryo transfer. Retos Colaboración, MINECO (RTC-2016-5448-2). PI: EA Martinez and MA Gil. 01/08/2016-31/12/2019. 246,000 €.

Reproductive biotechnologies for livestock and human health. SENECA; Groups of Excellence (GERM). Fundación Séneca (19892/GERM/15). PI: EA Martinez. 01/01/2016-31/12/2019. 200,000 €.

Implementation of a non-surgical transfer program with refrigerated- stored porcine embryos. MINECO (AGL2015-69735-R). PI: EA Martinez and MA Gil. 01/01/2016-31/12/2018. 160,000 €.

Non-surgical deep intrauterine with vitrified-warmed embryos in pigs. MINECO (AGL2012-38621). 01/01/2013-31/12/2015. (146.250'00 €).

Evaluation of the limiting factors influencing pig embryo vitrification and non-surgical embryo-transfer technologies. Ministry of Science and Innovation (AGL2009-12091 GAN). PI: EA Martinez. 01/01/2009-31/12/2011. (148,000.00 €).

C.3. Contracts

Embryo transfer for the introduction of a new genetic line in a pig farm. TOPIGS NORSVIN España SLU. 27/04/2018 – 26/04/2019. PI: EA Martinez and C Cuello. (45,173 €).

Non-surgical embryo collection in pigs. CDTI-AGROPOR S.A. (Las Torres de Cotillas, Murcia). 20/07/2017-31/12/2018. (102,850 €).

Embryo collection and non-surgical embryo transfer in pigs. TOPIGS Norsvin International (The Netherlands). PI: EA Martinez and MA Gil. 21/11/2017-21/11/2018. (22,555 €).

Generation of pancreatic beta cells, and functional corneas and cartilages from human IPS cells through the interspecies blastocyst complementation. UCAM (Murcia). 15/11/2016-15/05/2018. PI: EA Martinez and MA Gil. (66,000€).

Generation of pancreatic beta cells, and functional corneas and cartilages from human IPS cells through the interspecies blastocyst complementation. UCAM (Murcia). 28/01/2015-28/01/2016. PI: EA Martinez and MA Gil. (85,284 €).

Embryo transfer in pigs. Andrinmer (Denmark). 08/09/2014-08/09/2017. PI: EA Martinez. (18,445€).

Implementation of reproductive technologies to swine industry for improving growth performance and competitiveness. CDTI (2014/140)- AGROPOR S.A. (Las Torres de Cotillas, Murcia). 23/07/2014-23/03/2016. PI: EA Martinez. (84,700 €).

Commercial application of embryo and spermatic porcine technologies. CDTI-PORCISAN SA. (Santomera, Murcia,Spain). PI: EA Martinez. 03/07/2014-03/03/2016. (96,800 €).

C.4. Patents

Device and method for introducing and/or collecting fluids from the interior of uterus of an animal. Entidad titular: Universidad de Murcia (España). Inventors: E.A. Martinez; J.M. Vazquez, J. Roca y J.L. Vazquez. (European Patent EP 1 177776 A1; USA Patent US 6,695,767 B2; Australian Patent AU 776612; Canadian Patent CA 2365080; Mexican Patent A61D19/02. These patents have been licensed to: MONSANTO, Saint Louis, Missouri (USA), Newsham Choice Genetics, Des Moines, IA (USA); Magapor, Zaragoza (España) y Minitüb Abfüll- und Labortechnik GmbH&CoKG (Tiefenbach, Germany).

Device and method for introducing and/or collecting fluids with gametes and/or embryos from the oviduct of sows. Entidad titular: Universidad de Murcia (España). Inventors: J.M. Vazquez; E.A. Martinez; J.L. Vazquez y J. Roca. (PCT Patent ES 200802740; PSC/P-1000743). This patent has been licensed to: Sexing Technologies (Navasota, Texas, USA).

C.5. Supervisor of PhD thesis in the last 10 years

Effect of several approaches to visualize the metaphase II plate and the first polar body on the developmental ability of in vitro-matured porcine oocytes. Carolina Maside Mielgo. University of Murcia. 2012. European Doctorate. **Current position: Post-dcotoral researcher at the University of Castilla La Mancha, Spain.**

Improving frozen sperm efficiency through the use of deep uterine insemination in pigs. Alfonso Bolarín Guillén. University of Murcia. 2012. **Current position: Researcher of R&D Department of Topigs Norsvin España company.**

Advances in cryopreservation and non-surgical transfer of porcine embryos. Jesus Gomis Almendro. University of Murcia. 2013. European Doctorate. **Current position: Associate Proffsor University San Pablo-CEU, Valencia, Spain.**

Sex-selection in pigs: limiting factors and development of efficient protocols. David del Olmo Llanos. University of Murcia. 2014. International PhD. **Current position: Juan Jimenez Company, Murcia, Spain.**

Improving the efficiency of non-surgical deep uterine transfer with fresh embryos of purebred Duroc sows. Miguel Angel Angel Miñarro. University of Murcia. 2014. International PhD. **Current position: Human Medicine and Surgery student (University of Salamanca, Spain).**

Improving porcine embryo biotechnologies. Cristina A. Martínez Serrano. University of Murcia. 2018. International PhD. **Current position: Marie Curie Postdoctoral Researcher at the University of Linköping (Sweden).**

Advances in in vitro and in vivo porcine embryo production. Alicia Nohalez Ruiz. University of Murcia. International PhD. **Current position: researcher (INIA, Madrid, Spain).**

C.6. Overseas experience

Animal Sciences Center. University of Missouri-Columbia (USA). September 2000-Augost 2001. Research Project: Non-surgical embryo transfer in pigs.

C.7. Reviewer

Ad hoc Reviewer of manuscripts submitted to international journals: Livestock Production Science. Journal of Andrology. Reproduction. Reproduction in Domestic Animals. Theriogenology. Journal of Proteomic Research. Animal Reproduction Science. Acta Veterinaria Scandinavica. Human Molecular Genetics. International Journal of Andrology. Veterinary Medicine International. Andrologia. PLos One. Cryobiology. Zygote. Biology of Reproduction. Canadian Journal of Veterinary Research. Journal of Visualized Experiments. The ScientificWorld Journal. Journal of Reproduction and Development. Medical Science Monitor.

C.8. Memberships of scientific societies

- Spanish Animal Reproduction Association (AERA) from 1991 to now.
- Society for Reproduction and Fertility from 1994 to now.
- Society for the study of Reproduction from 1996 to now.
- European Society of Domestic Animal Reproduction (ESDAR) from 1999 to now.
- International Embryo Transfer Society (IETS) from 2000 to now

C.9. Organization of international scientific events

- 12th International Meeting on Animal Reproduction. Alicante (Spain). October 2014.

C.10. Editorial responsibilities

- Editor Associated. Reproduction in Domestic Animals from 2006 -.
- Editor Associated: TheScientificWorldJOURNAL from 2011-2017
- Editorial Board: SRL Reproductive Medicine & Gynecology. 2015-

C.11. European Diplomat

- European College of Animal Reproduction. 2000-.
- European College of Porcine Health Management. 2009-