

CV date 11/12/2021

**Part A. PERSONAL INFORMATION**



First and Family name	<b>Dimitrios Rizos</b>		
Social Security, Passport, ID number	55529187B	Age	53
Researcher numbers	Researcher ID (Wos)	E-7058-2012	
	Author ID (SCOPUS)	55946184900	
	ORCID code	0000-0001-6813-3940	

**A.1. Current position**

Name of University/Institution	National Institute for Agriculture and Food Research and Technology (INIA-CSIC)		
Department	Animal Reproduction		
Address and Country	Ctra. De la Coruna KM 5.9 – 28040, Madrid, Spain		
Phone number	+ 34 913474045	E-mail:	<a href="mailto:drizos@inia.es">drizos@inia.es</a>
Current position	Senior Researcher/Profesor de Investigación	From	09/2004
UNESCO code	310411, 240901		
Key words	Reproduction, Embryology, Cattle, IVF		

**A.2. Education**

Degree/PhD	University	Year
1 <sup>st</sup> Degree: Animal Production Technology	Technological Education Institute of Western Macedonia, Greece	1990
2 <sup>nd</sup> Degree: Agriculture-Animal Production	Aristotle University of Thessaloniki, Greece	1997
PhD: Animal Science and Production	University College Dublin, Ireland	2002

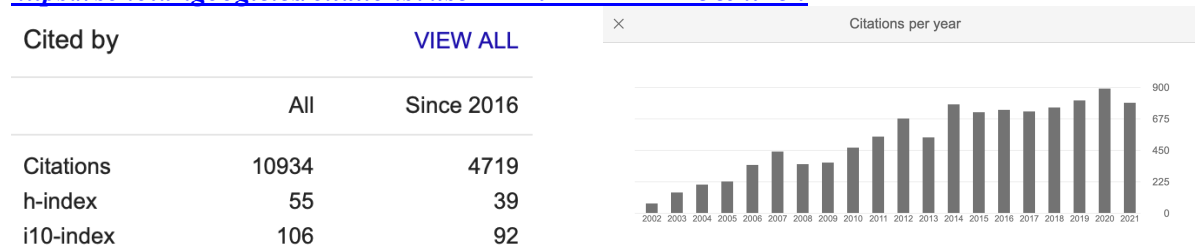
**A.3. JCR articles, h Index, thesis supervised, Scientific metrics (sexenios/quinquenios)...**

**Publications in high impact scientific journals: 123 – First Cuartile (Q1): >75% ; N° of PhD Thesis directed: 15 = 13 +2 in course; N° of Master Thesis directed: 18; Sexenios: 3 (last 2012-2017); Quinquenios: 3 (last 2015-2019)**

**H-Factor / Citations: Google scholar = 55 / 10934; Scopus = 46 / 7270; Web of Science = 45 / 7053**

**International position within the specialty, as consultation in the GoogleScholar:**

<https://scholar.google.es/citations?user=NKIFAR4AAAAJ&hl=en>



**International position within the specialty, as consultation in the ISI Web of Science on January 2020: Search by Topic= (embryo\* or blastocyst\*) and (quality\*) and (culture\*) and (bovine\* or cattle\*) gives a total of 2.135 documents. First 5/100 authors: 1° Lonergan P, 2° Rizos D, 3° Van Soom A, 4° Gutierrez-Adan, 5° Sirard MA**

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

**Main research lines:** Analyze early embryonic development in vivo and in vitro in mammals, from the day of conception until the start of the implantation; understand the genetic and epigenetic mechanisms that controls the preimplantation embryo development; determine the factors that affect the production of embryos in vitro and their quality (morphology, transcriptome etc); understand the mechanisms that control embryo-maternal interactions; and study factors responsible for infertility in dairy cows.

**I am responsible for the laboratory "Preimplantation embryology" (since 2004) and head of the group [Assisted Reproduction in Cattle](#) in the Dept. of Animal Reproduction-INIA since 2006. In the last 5 years I have had four research projects as Principal Investigator studying: (i) developmental**

competence of oocytes and embryo quality (in vivo vs. in vitro) in cattle; (ii) infertility in dairy cows; and (iii) the oviductal embryo-interactions using the cattle model. In addition, I participate on several projects at: University College Dublin, Ireland to study the effect of progesterone on embryonic loss in dairy cattle and strategies to improve fertility in dairy cattle; Department of Genetics, INIA in "Improving fertility and new reproductive techniques in two indigenous breeds in extensive production systems; and Universidad Autonoma of Barcelona to preserve the cow breed "Bruna dels Pirineus". I was official deputy from Spain on Cost Action FA10296 "EPICONCEPT" and currently on the CA 16119 "In vitro 3-D total cell guidance and fitness", as well as a Co-leader of WG3 "Chemobiological cues and Epigenetic controls". I was collaborating on the "European Joint Doctorate in Biology and Technology of Reproductive Health" 675 526-REP-BIOTECH "European Union H2020, as well as in the new application on 2020. These activities are collected in **9 national** and **18 international** research projects collaborations, **2 European actions** in the area of biotechnology and **1 European project** in the area of "Innovative Training Network", being the principal investigator in 8 of them. Also, I have directed or co-directed **15 PhD theses** (13 completed and 2 currently active) and **18 master theses**. I have published **123 scientific articles** in high indexed journals (Q1>75%), **8 dissemination** articles, **10 book chapters** and **>160 short communications** to international conferences.

## Part C. RELEVANT MERITS

### C.1. Publications (including books)

*I have published 123 full length papers (>75 % in Q1), >160 abstracts, 10 chapter books/monographs Here presented 10 selected full length papers from the 5 last years: 2017-2021*

1. Hamdi M, Cañon-Beltrán K, Mazzarella R, Cajas YN, Leal CLV, Gutierrez-Adan A, González EM, Da Silveira JC, **Rizos D**. Characterization and profiling analysis of bovine oviduct and uterine extracellular vesicles and their miRNA cargo through the estrous cycle. *FASEB J*. 2021 Dec;35(12):e22000. doi: 10.1096/fj.202101023R.
2. Cañón-Beltrán K, Cajas YN, Pérez-Cerezales S, Leal CLV, Agirregoitia E, Gutierrez-Adán A, González EM, **Rizos D**. Nobiletin enhances the development and quality of bovine embryos in vitro during two key periods of embryonic genome activation. *Sci Rep*. 2021 Jun 3;11(1):11796. doi: 10.1038/s41598-021-91158-7.
3. Kordowitzki P, Hamdi M, Derevyanko A, **Rizos D**, Blasco M. The effect of rapamycin on bovine oocyte maturation success and metaphase telomere length maintenance. *Aging (Albany NY)*. 2020 Apr 27;12(8):7576-7584. doi: 10.18632/aging.103126.
4. Rodríguez-Alonso B, Sánchez JM, Hamdi M, McDonald M, Havlicek V, Besenfelder U, Lonergan P, **Rizos D**. Asynchrony between the early embryo and the reproductive tract affects subsequent embryo development in cattle. *Reprod Fertil and Develop*. 2020; 32(6) 564-571 <https://doi.org/10.1071/RD19360>.
5. Hamdi M, Sánchez Calabuig MJ, Rodríguez-Alonso B, Bagés-Arnal S, Roussi K, Sturmey RGS, Gutierrez-Adan A, Lonergan P, **Rizos D**. Gene expression and metabolic response of bovine oviduct epithelial cells to the early embryo. *Reproduction*. 2019 Apr 1. pii: REP-18-0561.R2. <https://doi.org/10.1530/REP-18-0561>.
6. Rodríguez-Alonso B, Hamdi M, Sánchez JM, Mailló V, Gutierrez-Adan A, Lonergan P, **Rizos D**. An approach to studying the local embryo effect on gene expression in the bovine oviduct epithelium in vivo. *Reprod Domest Anim*. 2019 54(12):1516-1523. doi: 10.1111/rda.13558.
7. Hamdi M, Lopera-Vasquez R, Mailló V, Sanchez-Calabuig MJ, Núñez C, Gutierrez-Adan A, **Rizos D**. Bovine oviductal and uterine fluid support in vitro embryo development. *Reproduction Fertility Development*. 2018 30(7): 935-945. <https://doi.org/10.1071/RD17286>.
8. Algarra B, Mailló V, Avilés M, Gutiérrez-Adán A, **Rizos D**, Jimenez-Movilla M. Effects of recombinant OVGPI protein on in vitro bovine embryo development. *J Reprod Dev*. 2018 64(5):433-443. <https://doi.org/10.1262/jrd.2018-058>.
9. García EV, Hamdi M, Barrera AD, Sánchez-Calabuig MJ, Gutiérrez-Adán A, **Rizos D**. Bovine embryo-oviduct interaction *in vitro* reveals an early cross talk mediated by BMP signaling. *Reproduction* 2017 153(5):631-643. <https://doi.org/10.1530/REP-16-0654>.
10. Lopera-Vasquez R, Hamdi M, Mailló V, Gutierrez-Adan A, Bermejo-Alvarez P, Ramírez MA, Yáñez-Mó M, **Rizos D**. Effect of bovine oviductal extracellular vesicles on embryo development and quality in vitro. *Reproduction* 2017 153(4):461-470. <https://doi.org/10.1530/REP-16-0384>.

## C.2. Research projects and grants

Title: “EXtracellular vesicles: mOdulatorS of EmbryoO-Maternal interactionS and fertility in cattle (EXOSOMES)” **PID2019-111641RB-I00** - Grand Agency: Spanish Minister of Science and Innovation Principal Investigator: **Dimitrios Rizos** (INIA); Duration: 2020-2024 / Value: 226.270 €+ 80.000 € (4 years PhD Scholarship).

Title: **CA 16119** - In vitro 3-D total cell guidance and fitness - Grand Agency: European Cooperation in Science and Technology - Principal Investigator: Dr. Tiziana Brevini (Italy); Duration: 2017-2021 / Value: 700.000 € / Role: Scientific Colaborator; Deputy official representative of Spain; Working Group 3 Co-Leader.

Title: “EMBRYO-maternal interaction: Fundamental balance for ReproducTive success In cattle-EMBRYOFERTIL” **AGL2015-70140-R/GAN** - Grand Agency: Spanish Minister of Economy and competitiveness - Principal Investigator: **Dimitrios Rizos** (INIA); Duration: 2016-2020 / Value: 212.960 €

Title: “Embryo-maternal communication in the bovine oviduct: crucial for successful embryo development.” **TAD/CRP – JA00092482** - Grand Agency: OECD Co-operative Research Program - Principal Investigator: **Dimitrios Rizos** (INIA); Duration: 2017 / Value: 8.865 €

Title: “European Joint Doctorate in Biology and Technology of Reproductive Health” **675526-REP-BIOTECH** - Grand Agency: European Commission -The EU Framework Programme for Research and Innovation - Principal Investigator: Dr. Pilar Coy, UM; Duration: 2015-2019 / Value: 3.700.000 € / Role: Scientific Colaborator.

Title: “Improving fertility and new reproductive techniques in two indigenous cattle breeds in extensive farming systems” **MAGRAMA 20140020001859** - Grand Agency: Spanish Ministry of Agriculture food and Environment, Vacuno Avileno de Calidad SCA, Ganderos de Morucha S.Coop - Principal Investigator: Clara Diez (INIA); Duration: 2014-2016 / Value: 100.000 € / Role: Scientific Colaborator.

Title: **Cost Action FA10296**: “EPICONCEPT” Periconception environment as an epigenomic lever for optimising food production and health in livestock - Grand Agency: European Cooperation in Science and Technology - Principal Investigator: Dr. Ann Van Soom (Belgium); Duration: 2013-2016 / Value: 650.000 € / Role: Scientific Colaborator; Deputy official represen of Spain.

Title: “Oviduct-embryo interactions in cattle: a central role in the establishment of pregnancy” **AGL2012-37510/GAN** - Grand Agency: Spanish Minister of Economy and competitiveness - Principal Investigator: **Dimitrios Rizos** (INIA); Duration: 2013-2015 / Value: 187.200 € + 80.000 € (4 years PhD Scholarship).

Title: “Conservation "ex situ" of embryos from cows "Bruna dels Pyrenees" as a strategy for the conservation of the breed” **RZ 2010-00015-00-00** - Grand Agency: SGIT-INIA - Principal Investigator: Teresa Mogas (UAB); Duration: 2011-2013 / Value: 44.776 € / Role: Scientific Colaborator.

Title: “Infertility in post partum High Yielding Dairy Cows: Relative contribution of oocyte quality and reproductive tract environment to early embryonic loss” **AGL2009-11810/GAN** - Grand Agency: Spanish Ministry of Science and Innovation - Principal Investigator: **Dimitrios Rizos** (INIA); Duration: 2010-2012 / Value: 125.000 € + 75.000 € (4 years PhD Scholarship).

Title: “Genomic control of embryo development in bovine” **AGL2006-05616/GAN** - Grand Agency: Spanish Ministry of Science and Education - Principal Investigator: **Dimitrios Rizos** (INIA) - Duration: 2006-2009 / Value: 107.000 € / Duration: Principal Investigator

## C.3. Contracts

- Convenio entre la Agencia Estatal Consejo Superior de Investigaciones Científicas, M.P., a través del Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria, y el Centre de Recerca en Agrotecnologia (AGROTECNIO), para desarrollar actividades de transferencia de embriones bovinos producidos in vitro para aumentar la sostenibilidad de los rebaños lecheros - Noviembre 2021 hasta Octubre 2024. Dimitrios Rizo Y José María Sánchez Gómez (INIA-CSIC) - Irina Inspierto (AGROTECNIO): 364.712 €
- Contrato con Empresas: Estudio de las características estructurales y funcionales de las vesículas extracelulares oviductales bovinas. University of Thessaly, Greece - 6.969,47 €

#### C.4. Patents

#### C.5, C.6, C.7... (e. g., Institutional responsibilities, memberships of scientific societies...)

- **Chief Scientific Editor** of the Spanish Journal of Agricultural Research (SJAR) since January 2019 (<http://revistas.inia.es/index.php/sjar/about/editorialTeam>)
- **Committee Member – MC member representative of Spain - COST CA16119:** "In vitro 3-D total cell guidance and fitness" – [www.cost-cellfit.eu](http://www.cost-cellfit.eu); 2016-2020.
- **Elected to the Boards** of the prestigious International Embryo Technology Society (IETS) – [www.iets.org](http://www.iets.org); 2016-present.
- **Elected President** of the prestigious international society of European Embryo Technology Association (AETE) – [www.aete.eu](http://www.aete.eu); 2015-2018.
- **Elected to the Boards** of the international society of European Embryo Technology Association (AETE); 2012-2015.
- **Committee Member – Substitute representative of Spain - COST EPICONCEPT FA1201** "Epigenetic and periconceptional Environment" 2012 -2016.
- **Editor of the AETE Newsletter:** 2012-2015
- **Scientific Program Co-chair** for the Annual meeting of IETS in Hannover, Germany 2013
- **Scientific Program committee** of the IETS and AETE
- **Member of the Selection and Evaluation of the Student Competition** in the Scientific Meetings of the AETE. 2010-2018.
- **Membership** of several international and national societies (SSR, AETE, IETS, ICAR, AERA etc).
- **Invitations to give Plenary Lectures at International Conferences** (ICAR, SBTE, AETE, IETS, IRRS, ESDAR etc).
- Invitations to serve as **External Examiner for PhD and Master thesis in foreign and national universities**
- Regular invitations as **reviewer for the leading international journals** in my area, Biology of Reproduction, PlosOne, Reproduction Fertility and Development, Reproduction, Scientific Reports, Theriogenology etc.
- Regular invitations to **chair plenary sessions and/or moderate workshops at national and international conferences** (AETE, IETS, AERA, etc).
- **Regular invitations to act as referee** by major national international competitive grant awarding organizations (ANEP, Spain; Research Foundation-Flanders (FWO) & National Fund for Scientific Research (FNRS), Belgium; FONDECYT NATIONAL RESEARCH FUNDING, Chile; EUROSTARS-EURECA - Horizon 2020, EU; National Science Centre (NCN), Poland; Innovation Fund Denmark, etc); Swiss National Science Foundation (FNSNF), Switzerland.
- **Regular invitations as an external evaluator** of open and internal position at several Universities/ Institutes.
- **Teaching experience.** Pre- and post-graduate courses at: University College Dublin, University of Murcia, University Complutense of Madrid, Politechnic University of Valencia, University Autonoma of Barcelona on: *Female Reproductive Tract Physiology/Anatomy and Physiology of Pregnancy/In Vivo and In Vitro Embryo Production, Transfer, Evaluation and Freezing/Consequences of in vitro culture on embryo development and embryo quality etc.*
- **Several specific courses given at:** University of Córdoba Spain; University of Leon Spain; University of Sao Paulo Brazil; AECID Colombia; AECID Bolivia; University ISA Dominican Republic; ARBiotech, Culiacan, Mexico on: *"Reproductive Biotechnologies"*.
- **Research Collaboration.** I have established a large network of collaborators in **Europe** (University College Dublin, Ireland: *Prof. Pat Lonerga/Dr Trudee fair*; University of Anwerpt, Belgium: *Prof. Peter Bols, Dr, Jo Leroy*; University of Vienna, Austria; *Prof. Urban Besenfelder*; Hull York Medical School, UK; *Dr. Roger Sturmey*; University of Thessaly, Greece: *Prof. Georgios Amiridis, etc*), in the **USA** (e.g. Washington State University, USA: *Prof Tom Spenser*), and in **Spain** (University, of Murcia; *Prof. Pilar Coy*; University Autonoma de Barcelona: *Prof. Teresa Mogas/Prof. Mayte Paramio*; University of Cordoba: *Prof. Carlos Perez-Marin* etc) evidenced by a significant number of joint publications.
- **Companies Collaboration:** Divasa-Farmavic (DFV) / CEVA / COVAP / San Isidro SCA, Spain on *"Effect of hCG administration in pregnancy rates at 1<sup>st</sup> AI in high yielding dairy cattle"*; VetRumen, Spain on Transfer of *"Therapeutic embryos"* in repeated dairy cows.