Part A. PERSONAL INFORMATION

CV date	15/12/2022

First name	Juan Antonio		
Family name	Marchal Corrales		
Gender (*)	Male	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail	jmarchal@go.ugr.es	URL Web:	
Open Research and Contributor ID (ORCID)(*)		Research ID: M-4305-2014; ORCID: 0000-0002-4996-8261	

A.1. Current position

Position	Full Professor		
Initial date	10/04/2011		
Institution	University of Granada		
Department/Center	Human Anatomy and Embryology		
Country	Spain	Phone number	+34958241000 ext 20080
Key words	Cancer stem cells, gene therapy, liquid biopsy, biomarkers, regenerative medicine, nanomedicine, 3D bioprinting stem cells		

A.2. Previous positions (research activity interruptions, art. 45.2.b))

Period	Position/Institution/Country/Interruption cause
1997	Postdoctoral fellow/Research Hospital-University Unit/Spain
1997-1998	Lecturer/ Department of Health Sciences/ University of Almeria/Spain
1998-1999	Lecturer/ Department of Health Sciences/ University of Jaen/Spain
1999-2006	Associate Professor/ Department of Health Sciences/ University of Jaen/Spain
2006-2011	Associate Professor/ Faculty of Medicine/University of Granada/Spain
2011-present	Full professor/ Faculty of Medicine/ University of Granada/ Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed in Medicine and Surgery	University of Granada (UGR)/Spain	1992
Graduate in Medicine and Surgery (outstanding)	University of Granada (UGR)/Spain	1993
PhD in Medicine and Surgery (Extraordinary Award)	University of Granada (UGR)/Spain	1996

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

B.1. General quality indicators of scientific production

Research periods accredited by CNEAI: 4 (the last from: 31/12/2018); research periods accredited by Andalucía: 5; Transference period accredited by CNEAI: 1; Thesis supervised: 21 (18 with European or International mention). National and international projects: 59 (27 as PI). Patents: 33 (6 licensed). Co-founder of the EBT Regemat 3D (http://www.regemat3d.com/), Lentistem S.L. (https://lentistem.weebly.com/) and the Spin-off PKR-Exogenetics S.L., and scientific advisor of Propanc Biopharma, Inc. (http://www.propanc.com/). JCR Articles (2015-2020): 68, first decile (2015-2020) (D1): 17. Q1 (2015-2020): 35; 1st author, last author or corresponding (2015-2020): 39; Index h: 42 (since 2017: 35); i10 Index: 131 (since 2017: 96); Total citations: 5425 (since 2017: 3730) (source: Google Scholar).

B.2. Free resume summary

Juan Antonio Marchal (MD, PhD) is a Full Professor of Human Anatomy and Embryology (Faculty of Medicine) at the University of Granada (UGR). He got his PhD in 1996 in this university working on the implementation of a novel

differentiation therapy against human rhabdomyosarcoma and received the 1996 PhD Excellence award for his dissertation. In 1997 he was funded by a postdoctoral fellow by the Ministry of Health (Instituto de Salud Carlos III-ISCII) and from 1998 to 1999 he was lecturer at two Universities (University of Almería and University of Jaen). From 1999 to 2011 he was associate professor at both the University of Jaen (1999 to 2006) and the University of Granada (2006 to 2011) and, since April 2011, as a full professor. Moreover, Dr. Marchal has been visiting scholar at several Universities (Universitá degli Studi di Sassari, Italy; Universidad Católica Santiago de Guayaquil, Ecuador) and research institutions (CIBO-Centro de Investigación Biomédica de Occidente, Guadalajara, México).

Dr. Marchal is corresponding Member of the Royal Academy of Medicine and Surgery of Granada District since 2006, and coordinator of 2 Doctoral Programs with Quality Mention and 2 Official Masters. He has participated in 57 National and international projects (25 as PI), in 245 publications in journals (220 included in JCR) and he is author of 40 national and international books and book chapters. He has received 12 research awards, among them the I Prize for Health Research of the Autonomous Community of Andalusia, the award of the Social Council of UGR (2015) or the recent award UGR of Research to transference of knowledge (2020). He is evaluator of projects for Biomedical Research and Health Sciences (Junta de Andalucía), European Research Council (ERC, EU), Agencia Estatal de Investigación and the ISCII, (AEI, Ministry of Science and Innovation, Spain), the Dutch Cancer Society (Holland), the Netherlands Organisation for Scientific Research (NWO), the French National Research Agency (ANR, France), the National Science Centre (Nauki – Polonia), Det Norske Veritas Business Assurance España S.L. (DNV GL), the Dutch Heart Foundation, the Israel Science Foundation (ISF, Israel), the National Center of Science and Technology Evaluation" (NCSTE, Kazajistán), Worldwide Cancer Reseach (UK), Pancreatic Cancer UK Career Foundation Fellowships (UK) the National Agency for Science and Technology (Argentina), and 51 international high impact journals. He is the director of the research group "CTS-963: Advanced therapies: Differentiation, Regeneration and Cancer", the Chair Drs. Galera and Requena of Cancer Stem Cell Research (https://cancercmc.ugrmecenazgo.es/la-catedra-cancer-cmc/;) and the Singular Laboratory of Biofabrication and (bio) 3D printing (BioFabi3D) at UGR. He is scientific advisor of the radiobiochemistry and immunoanalysis service of the Scientific Instrumentation Center and member of the Advisory Board of the International Postgraduate School of UGR. Moreover, he has been member of the standing committee of the Scientific Council and coordinator of Research Area at the Biosanitary Research Institute ibs.GRANADA and member of the Governing Board of Biopathology and Regenerative Medicine Institute (IBIMER). Moreover, Prof. Marchal is member, promoter and guarantor of the Excellence Research Unit "Modeling Nature: From nano to macro" –MNat. Also, he is member of the Andalusian network of CAR therapies (RANTECAR) and the Spanish Network of Advances Therapies (TERAV, Ministry of Science and Innovation, Spain). He has supervised 20 doctoral theses (17 with International mention) and has ability to attract postdoctoral talent in competitive calls: tutor of 1 Marie Skłodowska-Curie Individual Fellowships, 1 Breast Cancer Foundation-Susan G. Komen scholarship, 2 Ramon y Cajal, 1 Río Hortega, 1 Miguel Servet, 1 Nicolás Monardes, 1 Juan de la Cierva Incorporación, 1 Junior Postdoctoral Leader Incoming-La Caixa Foundation, 1 posdoctoral researcher María Zambrano Junior, 2 posdoctoral researchers in the Oncology and Hematology program and 1 posdoctoral Junior of Junta de Andalucia. Dr. Marchal has one Transference period accredited by CNEA, is inventor of 33 patents (6 licensed) and is Co-founder of the EBT Regemat 3D (http://www.regemat3d.com/), Lentistem Biotech S.L. (http://www.lentistem.com/) and the Spin-off PKR-Exogenetics S.L., and scientific advisor of Propanc Biopharma, Inc. (http:// www.propanc.com/). He has active collaborations and contracts with several biotech companies such as Bioibérica SAU, BrecaHealth Care, Propanc Biopharma, StemTek, Cellulis, Crystalgel, Canvax Biotech, 3D Biotech,of in the international EUROSTARS call (EXP00084122/CIIP?20152006) in collaboration with the company Canvax Biotech, Proteros (https://www.proteros.com/) and Eurofins (https://www.eurofinsdiscoveryservices.com/), a program to support R&D-intensive PYMES in the development of market-oriented transnational projects.

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

C.1. Most important publications in books and journals with "peer review" and in conferences

1. Lopez J, Ruiz-Toranzo M, Antich C, et al., Marchal JA (7/7). 2022. Biofabrication of a Tri-layered 3D-Bioprinted CSC-based Malignant Melanoma Model for Personalized Cancer Treatment. Biofabrication. Aug 30. doi: 10.1088/1758-5090/ac8dc6.

2. Arranz E; Aguilera-Garrido A; Gálvez-Ruiz MJ; Marchal JA; Galisteo-González F; Giblin L. (4/6). 2022. Solid lipid nanoparticles to improve bioaccessibility and permeability of orally administered maslinic acid. Drug Delivery. 29-1, pp.1971-1982. https://doi.org/10.1080/10717544.2022.2086937.

3. Gallardo A Molina A; Asenjo HG; et al; Marchal JA; Landeira D. (13/16). 2022. EZH2 endorses cell plasticity to non-small cell lung cancer cells facilitating mesenchymal to epithelial transition and tumour colonization Oncogene. 41-28, pp.3611-3624. https://doi.org/10.1038/s41388-022-02375-x

4. Nieto D, Jiménez G, Moroni L, López-Ruiz E, Gálvez-Martín P, Marchal JA. (6/6). 2022. iofabrication approaches and regulatory framework of metastatic tumor-on-a-chip models for precision oncology. Med Res Rev. Sep;42(5):1978-2001. doi: 10.1002/med.21914
5. Aparicio-Puerta E; Gómez-Martín C; Giannoukakos S; et al; Hackenberg M. (11/12). 2022. sRNAbench and sRNAtoolbox 2022 update: accurate miRNA and sncRNA profiling for model and non-model organisms. Nucleic Acids Res. 50-W1, pp.W710-W717. https://doi.org/10.1093/nar/gkac363
6. Pleguezuelos-Beltrán P, Gálvez-Martín P, Nieto-García D, Marchal JA (CA), López-Ruiz E (4/5).2022. Advances in spray products for skin regeneration. Bioact Mater. 2022 Mar 8;16:187-203.
7. Tristán-Manzano M; Maldonado-Pérez N; Justicia-Lirio P; et al; Marchal JA; Martin F. (15/18). 2022 Physiological lentiviral vectors for the generation of improved CAR-T cells. Mol Ther Oncolytics. 25, pp.335-349.
8. Díaz C; González-Olmedo C; Díaz-Beltrán M; et al; Marchal JA; Sánchez-Rovira P. (10/13). 2022. Predicting dynamic response to neoadjuvant chemotherapy in breast cancer: a novel metabolomics approach Molecular oncology. Jul;16(14):2658-2671. doi: 10.1002/1878-0261.13216
9. Martínez-Moreno D; Venegas-Bustos D; et al Marchal JA (AC). (6/6). 2022. Chondro-Inductive b-TPUe-Based Functionalized Scaffolds for Application in Cartilage Tissue Engineering. Adv Healthc Mater. 11-19, pp.e2200251.
10. Tamayo-Angorrilla M, López de Andrés J, Jiménez G, Marchal JA. (4/4). 2022. The biomimetic extracellular matrix: a therapeutic tool for breast cancer research. Transl Res. Sep;247:117-136.
11. Navarro-Marchal SA, Griñán-Lisón C, et al, Marchal JA (9/9). Anti-CD44-Conjugated Olive Oil Liquid Nanocapsules for Targeting Pancreatic Cancer Stem Cells. Biomacromolecules. 2021 Apr 12;22(4):1374-1388.
12. Ruiz-Espigares J, Nieto D, Moroni L, Jiménez G, Marchal JA. (5/5). 2021. Evolution of Metastasis Study Models toward Metastasis-On-A-Chip: The Ultimate Model? Small. Apr;17(14):e2006009. doi: 10.1002/smll.202006009.
13. Antich C, et al. Marchal JA. (9/9). 2021. Development of a Biomimetic Hydrogel Based on Predifferentiated Mesenchymal Stem-Cell-Derived ECM for Cartilage Tissue Engineering. Adv Healthc Mater. Apr;10(8):e2001847.
14. Palacios-Ferrer JL, García-Ortega MB, et al. Marchal JA. (15/15). 2021. Metabolomic profile of cancer stem cell-derived exosomes from patients with malignant melanoma. Mol Oncol. Feb;15(2):407-428.
15. López de Andrés J, et al. Marchal JA (4/4). Cancer stem cell secretome in the tumor microenvironment: a key point for an effective personalized cancer treatment. J Hematol Oncol. 2020 Oct 15;13(1):136.
16. Cano-Cortes MV, Navarro-Marchal SA, Ruiz-Blas MP, Diaz-Mochon JJ, Marchal JA* (AC), Sanchez-Martin RM* (AC) (4/5). A versatile theranostic nanodevice based on an orthogonal bioconjugation strategy for efficient targeted treatment and monitoring of triple negative breast cancer. Nanomedicine. 2020 Feb;24:102120.
17. Aparicio-Puerta E, Jáspez D, Lebrón R, Koppers-Lalic D, Marchal JA, Hackenberg M. liqDB: a small-RNAseq knowledge discovery database for liquid biopsy studies. Nucleic Acids Res. 2019 Jan 8;47(D1):D113-D120.
18. González-González A, Muñoz-Muela E, Marchal JA, et al (3/29). Activating Transcription Factor 4 Modulates TGFβ-Induced Aggressiveness in Triple-Negative Breast Cancer via SMAD2/3/4 and mTORC2 Signaling. Clin Cancer Res. 2018 Nov 15;24(22):5697-5709. doi: 10.1158/1078-0432.CCR-17-3125. Epub 2018 Jul 16.
19. Jiménez G, Hackenberg M, et al. Marchal JA (13/13). Mesenchymal stem cell's secretome promotes selective enrichment of cancer stem-like cells with specific cytogenetic profile. Cancer Lett. 2018 Aug 10;429:78-88.
20. Galisteo-González F, Molina-Bolívar JA, et al. Marchal JA. (7/7). 2018. Albumin-covered lipid nanocapsules exhibit enhanced uptake performance by breast-tumor cells. Colloids Surf B Biointerfaces. May 1;165:103-110.

C.3. Projects or research lines in which you have participated.

1. NABIHEAL. EU- HORIZON-CL4-2022-RESILIENCE-01. Marchal JA (PI UGR). 01/01/2023-31/12/2026. 406.150 €.
2. CA21108-NETSKINMODEKS "European Network for Skin Engineering and Modeling". EU COST21 action. (2022-2025). Marchal JA (Icol). 01/12/2022-30/11/2025.
3. PLEC2021-008094, Targeting the tumor microenvironment to improve CAR-T cell based immunotherapy in pancreatic cancer. Ministerio de Ciencia e Innovación. JA Marchal. (UGR). 01/01/2022-31/12/2024. 88.817 €.
4. Defining the role of different allele-specific KRAS mutations in pancreatic adenocarcinoma. Obra Social Fundación la Caixa. EU Marie Skłodowska-Curie grant agreement No713673. Zafra-Marin MP (PI); JA Marchal (supervisor). 31/12/2021-31/12/2024. 295.530 €
5. RTI2018-101309-B-C22. Nanofantasmas de células educadas por el tumor como sistemas de liberación de fármacos dirigidos frente a células madre de cáncer de mama y de páncreas. Ministerio de Ciencia, Innovación y Universidades. J. A. Marchal (PI). 18/07/2019 - 31/12/2022. 217.800 €
6. EQC2021-006920-P. Estructuras celulares 3D confinadas en microentornos altamente controlados y ajustables como modelo para cribado fenotípico y bioquímico de alto rendimiento. Ministerio Ciencia, innovación y Universidades. J. A. Marchal (PI). 01/06/2021- 31/12/2023. 568.000 €.

7. DTS21/00098, Development and validation of a portable multimodular device for biofabrication and in situ repair of injured tissues (BioPen4Reg). MICINN. JA Marchal. 01/01/2022- 31/12/2023. 185.073 €.
8. H2020-MSCA-IF-2018. EOBRECA: Differential Roles of Estrogens in Obesity-mediated ER+ Breast Cancer Development. Horizonte2020-Marie Sklodowska Curie. J. A. Marchal (CoPI). 01/09/2019 1/08/2021. 160.932,48 €
9. DTS19/00145. BIOINKS 4 3D-SKIN: Novel bioinks for 3D bioprinting of skin grafts and malignant melanoma models. Instituto de Salud Carlos III. J. A. Marchal (PI).25/11/2019-24/11/2021. 100.100 €.
10. PEMP-0205-2020. Vesículas extracelulares de linfa y plasma como alternativa para la detección de mutaciones en cáncer de mama (BC-LinfaExOmic). Junta de Andalucía. Marchal JA (IP). 01/11/2021-30/10/2023. 123.750 €.
11. PIE16/00045, Implementation of a novel integrated platform to monitor tumour heterogeneity as a crucial determinant for individualized diagnostic and therapeutic outcome. MICINN. J. A. Marchal (PI). 01/01/2017-31/12/2019. 495.000 €.
12. MAT2015-63644-C2-2-R, Nanocápsulas de aceite de oliva inteligentes para la administración oral de fármacos contra células madre pancreáticas. MINECO. J. A. Marchal (PI). 04/01/2016-31/12/2018.
13. EXP00084122/CIIP-20152006, FRIDASTEM: A novel drug discovery platform delivering breakthrough cancer stem cell (CSC) drugs. EUROSTARS-2, UE. J.A. Marchal (PI). 01/01/2016-31/12/2018. 110.000€.
14. RTC.2015.3386.1, Desarrollo de fármacos frente a CSCs mediante cribado de librerías sintéticas utilizando GPCRs, quinasas y la interacción calcineurina-NFAT como dianas. MINECO, Retos-Colaboracion. J.A. Marchal (PI). 01/01/2015-29/12/2017. 124.934 €.

C.4. Participation in technology/knowledge transfer activities and exploitation of results.

Contracts

1. Determination of gene expression by microarray analyses after treatment with Propanc formulations cell differentiation assays. Propanc Pty Ltd. J.A. Marchal (CoPI).. 01/01/2015. 29.400€.
2. In vivo study of the antitumor activity of PRP against CSCs. PropancBiopharma, Inc.. Marchal J. A. (PI). 01/01/2018-31/12/2019. 50.050 €.
3. Biological study of the antitumor activitiy of PRP. PropancBiopharma, Inc.. Marchal J. A. (co-PI). 01/01/2015-31/12/2017. 59.400 €.

Patents

1. Marchal JA; Galisteo F; Galvez-Ruiz MJ. P202230598. Maslinic acid solid lipid nanoparticles, procedure for their preparation and the use thereof 01/07/2022.
2. Marchal J A; Jiménez G; López de Andrés J. EP22382096. Biofabrication of a tri-layered 3D-bioprinted CSC-based malignant melanoma model. 05/02/2022
Alvarez MJ; Marchal J A. EP21382617.5. In vitro method for the diagnosis and/or prognosis of malignant melanoma 08/07/2021.
Benabdellah K; Marchal JA; Martín-Molina F; García MB; Pavlovic K; Galindo P; Aheget H. EP21382616.7. In vitro method for improving the production of exosomes from CAR-T cells 07/07/2021.
Murtazina A, Marchal J, Boulaiz H. P202230419. Extractos de polisacáridos de cereal, método para obtenerlos, composición farmacéutica que lo contiene y su uso como agente antitumoral y/o antifibrótico 12/05/2022.
2. Marchal JA; Alvarez MJ; Martinez LJ. EP21382354.5. Simultaneous detection of chromosomal alterations through magnetic capture, microscopy and flow cytometry. 23/04/2021
3. Rus G, Marchal JA et al. EP20382752.2. A medical apparatus for the non-invasive transmission of focussed shear waves to impact cellular behaviour. 14/08/2020.
4. Boulaiz H, Marchal JA et al. PCT/ES2020/070315. Terapia génica con los genes HOKD y LDRB para el tratamiento del cáncer. 15/05/2019
5. Granados-Principal S, Marchal JA et al. P201830665. Composición capaz de modular la actividad de ATF4 para el tratamiento del cáncer. 03/07/2018.
6. Granados-Principal S, Marchal JA et al. P201830666. Método de obtención de datos útiles para predecir o pronosticar la supervivencia global y la supervivencia libre de recaídas en el cáncer. 03/07/2018.
7. Sánchez-Martin R, Marchal JA, et al. P201830360, PCT/ES2019/070259, WO/2019/197702, US2021016207. Multifunctional nanoparticles for theragnosis. 12/04/2018
8. Hackenberg M, Marchal JA, et al. PCT/ES2018/070325, WO2018/197736. Composición que comprende miRNAs para su uso como medicamento. 24/04/2018
9. Peran M; Kenyon J; Marchal J.A; García MA. WO 2017127892 A1. Cancer treatment. 03/08/2017. Licensed to PropancBiopharma, Inc