



CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date

23/11/2021

First name	Amancio		
Family name	Carnero Moya		
Gender (*)	Male	Birth date (dd/mm/yyyy)	18/09/65
ID number	05902911F		
e-mail	Acarnero-ibis@us.es	URL: https://www.ibis-sevilla.es/investigacion/oncohematologia-y-genetica/biologia-molecular-del-cancer/carnero-moya-amancio.aspx	
Open Researcher and Contributor ID (ORCID) (*)		0000-0003-4357-3979	

A.1. Current position

Position	Investigador Científico CSIC		
Initial date	7 Jul, 2012		
Institution	CSIC		
Department/Center	IBIS	Instituto de Biomedicina de Sevilla	
Country	Spain	Teleph. number	955923111
Key words	Cancer, Cancer Stem cells, Inmortalización, senescencia, diferenciación, terapia,		

A.2. Previous positions (research activity interruptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
9-2009/2012	Científico Titular/ Instituto de Biomedicina de Sevilla (CSIC)
01-2001/9-2009	Jefe de Grupo/ Centro Nacional de Investigaciones Oncológicas
04-2000/10-2001	Senior Lecturer/WIBR, University College London (London, UK)
07-1997/04-2000	Senior research Scientist/ Institute of Child Health (London, UK)
01-1996/07-1997	Postdoc/ Cold Spring Harbor Laboratory (NY, USA)
01-1995/09-1995	Profesor Asociado/ Dpt. Bioquímica, Univer Autónoma de Madrid
01-1994/01-1995	Postdoctoral/ Instituto de Investigaciones Biológicas (CSIC)
01-1990/01-1994	Predoctoral/ Instituto de Investigaciones Biológicas (CSIC)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Grado de Licenciado en Ciencias(Biología)	Universidad de Granada	Nov. 1989
Licenciado en Ciencias (Biología)	Universidad de Granada	Junio 1989
Diplomado en Profesor de EGB	Universidad de Castilla-LaMancha	Junio 1986

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

Dr. Amancio Carnero (Orcid code: 0000-0003-4357-3979) studied Biological Sciences at the University of Granada where he began in the Department of Genetics. Later, he moved to the Institute for Biomedical Research (CSIC) where he did his doctoral thesis on the mechanisms of signal transduction mediated by the ras oncogene, obtaining the title of Doctor from the Department of Molecular Biology of the UAM in 1994. In this thesis describe the activation of PLD2 by ras oncogenes and its tumorigenic activity. After a short stay (1995) as associate professor in the Department of Biochemistry of the UAM, in 1996 he moved as a postdoc to Cold Spring Harbor Laboratory (New York) and later at the Institute of Child Health (University College London, London). There, He worked on the development of new genetic screening techniques to identify new targets

involved in cancer, especially related to cell cycle and cellular senescence. In 1999 moved to the Wolfson Institute for Biomedical Research (University College London, UK) where He was appointed Senior Lecturer, a position held until joining the CNIO in 2001 where he led the Assay Development Group and continued his research work. This group focused its work on the development of new drugs, basing its work on the identification and validation of new molecular targets, on the development of a biological/technological platform that allows the identification and validation of new drugs as well as their preclinical characterization. Here he discovered and characterized new relevant proteins such as MAP17, spinophilin, PIM or PP1A. Also worked in targets as PI3K or AKT. In September 2009 he took over his position as senior IP at the Institute of Biomedicine of Seville (CSIC) where he directs the Molecular Cancer Biology lab, continuing his work in the identification of new molecular targets involved in cancer and that could serve as a basis for the identification of new antitumor compounds. Specifically, focusing on new genes able to induce cellular immortalization and genes able to provoke de-differentiation to cancer stem cells and resistance to tumor treatment. In previous grants he discovered many genes related to immortalization of naïve cells, which were mostly related to dedifferentiating process towards a stem phenotype. CSC cells present many mechanisms for therapy resistance, such as high-level of drug efflux pumps, reactive oxygen species scavengers, antiapoptotic proteins, DNA repair efficient mechanisms, interactions with the protective microenvironment or exosomes loaded with proteins of non-coding RNA prone to modify the environment to favor metastasis. In previous grant he studied new genes (and in general genetic events) which alterations could influence de-differentiation from mature to CSC status and might have relevance in human tumors. To this end he performed functional screenings and discovered many genes that could be involved in this de-differentiation. Most of these genes were related to stemness and development, but also found many other genes (around 25% of them) unrelated or function unknown. Found and reported genes for the transition of metabolic states in renal tumor cells such as the inactivation of MYBBP1a and the activation of MYB. Epigenetic demethylation of MAP17 driving the resistance against some targeted therapies was observed in lung adenocarcinoma and larynx. Also, methylation of EMX1/2 factors may repress its activity as tumor suppressors regulating sarcomagenesis resistance to therapy through WNT pathway. Or loss of MYPT activating Hippo pathway.

Purely as **numbers** Published 184 peer reviewed publications (56 in 1st Decil and 139 in 1stQ), with an H index of 50. 1st author in 27 publications and corresponding in 98. Number of average annual citations is >850 in the last years. Also published 14 book chapters and 21 other publications not indexed. Dr Carnero had >25 **grants** awarded in competitive national and international calls (Union Europea (VI Framework) COMBIO. (contract N°:503568) and NETSENSOR (contract N°:012948)), and a number of grants to lab personnel awarded: FPU: 8; FPI: 2; Rio Ortega: 5; Juan de la Cierva: 1; Posdoctorate Consejería Salud JA: 1, Sara Borrell 1. According to **Formation**, Dr Carnero supervised a total of 15 theses + 4 in process (10 theses in the last 10 years), 10 got international mention, 4 extraordinary doctorate award. > 20 trainee students during last 10 years TFG, TFM, technicians in training. He is also University faculty professor by ANECA and has participated in different MASTERS and Official faculty lectures in the last 20 years. Has participation in 3 different Networks as IP: CIBERONC (Ciber de Cancer), (CB16/12/00275); iDIFFER (Balance between proliferation and differentiation: mechanisms and relevance in human pathology (RED2018-102723-T) and HYPOXIANET.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

Verdugo-Sivianes EM, Rojas AM, Muñoz-Galván S, Otero-Albiol D, **Carnero A(AC)**. Mutation of SPINOPHILIN (PPP1R9B) found in human tumors promotes the tumorigenic and stemness properties of cells. *Theranostics*. 2021 Jan 19;11(7):3452-3471. doi: 10.7150/thno.53572.

Jimenez-García MP, Lucena-Cacace A, Otero-Albiol D, **Carnero A(AC)**. Empty spiracles homeobox genes EMX1 and EMX2 regulate WNT pathway activation in sarcomagenesis. *J Exp Clin Cancer Res*. 2021 Aug 7;40(1):247. doi: 10.1186/s13046-021-02048-9.

Navas LE, **Carnero A(AC)**. NAD⁺ metabolism, stemness, the immune response, and cancer. *Signal Transduct Target Ther*. 2021 Jan 1;6(1):2. doi: 10.1038/s41392-020-00354-w.

Muñoz-Galván S, Felipe-Abrio B, Verdugo-Sivianes EM, Perez M, Jiménez-García MP, Suarez-Martinez E, Estevez-Garcia P, **Carnero A(AC)**. Downregulation of MYPT1 increases tumor resistance in ovarian cancer by targeting the Hippo pathway and increasing the stemness. *Mol Cancer*. 2020 Jan 11;19(1):7. doi: 10.1186/s12943-020-1130-z.

Perez M, García-Heredia JM, Felipe-Abrio B, Muñoz-Galván S, Martín-Broto J, **Carnero A(AC)**. Sarcoma stratification by combined pH2AX and MAP17 (PDZK1IP1) levels for a better outcome on doxorubicin plus olaparib treatment. *Signal Transduct Target Ther*. 2020 Sep 23;5(1):195. doi: 10.1038/s41392-020-00246-z.

Muñoz-Galván S, Lucena-Cacace A, Perez M, Otero-Albiol D, Gomez-Cambronero J, **Carnero A (AC)**. Tumor cell-secreted PLD increases tumor stemness by senescence-mediated communication with microenvironment. *Oncogene*. 2019 Feb;38(8):1309-1323. doi: 10.1038/s41388-018-0527-2.

Muñoz-Galván S, Felipe-Abrio B, García-Carrasco M, et al and **Carnero A. (AC 15/15)** New markers for human ovarian cancer that link platinum resistance to the cancer stem cell phenotype and define new therapeutic combinations and diagnostic tools. *J Exp Clin Cancer Res*. 2019;38(1):234. doi: 10.1186/s13046-019-1245-5.

Lucena-Cacace A, Otero-Albiol D, Jiménez-G MP, Muñoz-G S, **Carnero A(AC)**. NAMPT Is a Potent Oncogene in Colon Cancer Progression that Modulates Cancer Stem Cell Properties and Resistance to Therapy through Sirt1 and PARP. *Clin Cancer Res*. 2018;24(5):1202-1215. doi: 10.1158/1078-0432.CCR-17-2575.

García-Heredia JM, **Carnero A (AC)**. Dr. Jekyll and Mr. Hyde: MAP17's up-regulation, a crosspoint in cancer and inflammatory diseases. *Mol Cancer*. 2018 Apr 12;17(1):80. doi: 10.1186/s12943-018-0828-7.

García-Heredia JM, Lucena-Cacace A, Verdugo-Sivianes EM, Pérez M, **Carnero A (AC)**. The Cargo Protein MAP17 (PDZK1IP1) Regulates the Cancer Stem Cell Pool Activating the Notch Pathway by Abducting NUMB. *Clin Cancer Res*. 2017 Jul 15;23(14):3871-3883. doi: 10.1158/1078-0432.CCR-16-2358.

C.2. Congress

- Invited conference in the Menendez Pelayo University Course "Hypoxia and human pathology", presentation entitled: "Hypoxia and Cancer" December 3-5, 2014.

- Invited conference at the Workshop Cel division: molecular machineries and cancer targeted therapies. International University of Andalucia-EMBO course, with presentation entitled: "New tumor suppressors linked to retinoblastoma pathway" October 18-20, 2015

- Invited Conference at the IX European Scientific Oncology Conference (ESOC9), with a presentation entitled: Targeting tumor suppressors. Marbella, Spain, November 3-4, 2016

- Oral presentation at XV international congress ASEICA. "New tumor suppressors linked to the microenvironment" 21-23 october, 2015.

- Invited Conference at the IX European Scientific Oncology Conference (ESOC9), with a presentation entitled: Hypoxia in cancer Therapy. Marbella, Spain, November 3-4, 2016

- How can molecular biology help patients with soft tissue sarcomas? Amancio Carnero. Institute of Biomedicine of Seville, Spain. GEIS XV international Symposium. October 6th 2017 Madrid.

- New perspectives on tumor metabolism. Dr. Amancio Carnero, Institute of Biomedicine of Seville. Plenary Presentation at SAOM. SAOM symposium. July 15-16th 2017 Seville.

- Invited conference entitled: Map17 and microenvironment, at the Vall d'hebron Research Institute, Barcelona, June 9, 2021.

- Invited conference entitled: Ventures and misadventures of an oncogene, of the adventures in which he was involved and how he unfolded, at the Alberto Sols Biomedical Research Institute, Madrid, January 29, 2021.

- Invited conference: Map17 as a therapeutic target, at the MERK Research Center, Seville, 2020

C.3. Research projects

Identificación y caracterización de genes implicados en el proceso de senescencia celular: estableciendo causalidad y su potencial aplicación clínica. Ministerio de ciencia e innovación (SAF2009-08605);2010- 2012; IP: Amancio Carnero Moya

An in vivo platform for translational drug discovery in sarcomas. Fundación Oncológica FERO; 2010- 2012; IP : Amancio Carnero Moya

Senescencia celular, cáncer y envejecimiento, traslación de la investigación básica a la clínica. FIS, Ministerio de Economía y Competitividad (PI12/00137); 2013- 2015; IP : Amancio Carnero Moya

Identificación y caracterización de factores genéticos y fisiológicos involucrados en senescencia celular. Relevancia clínica en cáncer. FIS, Ministerio de Economía y Competitividad (PI15/00045); 2016- 2018; IP: Amancio Carnero Moya

Immortalization and hypoxia connexion. Contribution to cancer. Fundación BBVA; 2016- 2018; IP : Amancio Carnero Moya

CIBER de Cancer; Carlos III, Ministerio de Economía y Competitividad (RD16/12/00275); 2017- 2023; IP: Amancio Carnero

Definición de mecanismos clave de la multiresistencia de tumores de cabeza y cuello a los tratamientos quimio- y radioterapéuticos. Identificación de nuevos antitumorales individualizados. Fundación AECC, Proyectos coordinados. 2017- 2021; IPs Angel Carracedo (coordinador), Amancio Carnero, Matilde Leonart,

Caracterización de eventos genéticos que causan desdiferenciación de células tumorales maduras a células madre cancerosas y su relación con la resistencia a terapias tumorales de ovario. Fundación Eugenio Rodríguez Pascual; 2019; IP: Amancio Carnero Moya,

Mecanismos de desdiferenciación a células madre tumorales y resistencia a terapia tumoral; Ministerio de Ciencia, Innovación y Universidades de España, Plan Estatal de I + D + I 2018 cofinanciado por FEDER: RTI2018-097455-B-I00; 2019-21 IP: Amancio Carnero Moya,

C.4. Contracts, technological or transfer merits

Transfer and exploitation plan Grant: Diagnostic and predictive biomarkers of response to treatment in colorectal cancer. File: 06-00001010-15; IBIS / HUVR / CSIC (FISEVI); IP: Amancio Carnero Moya.

CLINICAL TRIAL: GEIS-51; Phase II multicenter trial of palbociclib in second line of advanced sarcomas with CDK4 overexpression; EudraCT: 2016-004039-19; PFIZER; IP: Juan Martín Broto; Amancio Carnero (preclinical coordinator).

European Patent PCT: EP2013 / 054589; "Biomarkers of survival prognosis after treatment of a cancer disease with radiotherapy and / or chemotherapy" Application date: March 7, 2012; CSIC ownership. Inventors: Amancio Carnero Moya

International Patent (PCT / ES2013 / 070218) from Spanish patent: P201230513 (03 April 2012). "Model of expression of miRNAs as an indicator of survival in patients with metastatic colorectal cancer"; 03 April 2013. IBIS ownership (HUVR / CSIC / Universidad Sevilla). Inventors: Rocio García Carbonero, Luis Paz-Ares, Sonia Molina Pinelo, Amancio Carnero Moya, Rocio Suárez Beltrán.

International Patent (PCT / ES2013 / 070364) from Hispaniola: P201230874. It has entered national phases in Europe (EP13800145) and the United States (US14 / 405,685). "Method for obtaining useful data for the diagnosis, prognosis and classification of patients with chronic obstructive pulmonary disease (COPD) and / or lung cancer . " 05 June 2012; IBIS ownership (HUVR / CSIC / Universidad Sevilla). Inventors: Luis Paz-Ares, María D. Pastor Herrera, Sonia Molina Pinelo, Amancio Carnero Moya, Ana Salinas, Ana B. de Souza Nogal.

International patent (PCT / ES2014 / 070731) from Hispaniola: P201331405. It has entered national phases in Europe (EP14848032) and the United States (US15024689). Title "Method to predict the response to chemotherapy treatment in patients with colorectal cancer." 25 September 2013; IBIS ownership (HUVR / CSIC / Universidad Sevilla). Rocio García Carbonero, Purificación Estevez García, Sonia Molina Pinelo, Amancio Carnero Moya, Luis Paz-Ares.

European patent: EP 17382457.4. Title "Predicting prognosis in glioblastoma and other tumors." 12 July 2017; IBIS ownership (CSIC / FISEVI / Universidad Sevilla). Inventors: Antonio Lucena-Cacace, Daniel Otero-Albiol, Manuel P. Jiménez-García, Javier Peinado-Serrano and Amancio Carnero.

Patent in Spain No. 201730929; FGFR INHIBITORS FOR USE IN THE TREATMENT OF LUNG CANCER :: Hospital 12 de Octubre Research Foundation; Andalusian Health Service (SAS); Higher Council for Scientific Research (CSIC): N. Ref .: P-07550; July 13, 2017; Inventors: 'Sonia molina pinelo'; 'Álvaro Quintanal Villalonga'; 'Irene Ferrer Sánchez'; Amancio Carnero Moya '; 'Luis Paz-Ares';

International Patent No. PCT / ES2018070502, Spanish patent application No. 201730928. pEGFR AND FGFR1 AND / OR FGFR4 FOR USE IN PREDICTING THE RESPONSE OF PATIENTS TO A LUNG CANCER TREATMENT AND METHOD AND KIT BASED ON SUCH USE . July 13, 2017 Applicants: Hospital 12 de Octubre Research Foundation; Andalusian Health Service, CSIC; S. Ref .: pEGFR and FGFR1 / 4; FISEVI-17009; Ref No.: PCT-07926; Inventors: Sonia molina pinelo; Álvaro Quintanal Villalonga, Irene Ferrer Sánchez; Amancio Carnero Moya ; Luis Paz-Ares;