MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

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	12/10/2022

First name	Francisco Javier		
Family name	Blanco López		
Gender (*)	Male	Birth date (dd/mm/yyyy)	dd/mm/yyyy
Social Security, Passport, ID number	xxxxxxxx		
e-mail	fjblanco@ugr.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		https://orcid.org/0000-0002-9929-6707	

(*) Mandatory

A.1. Current position

Position	Associate professor		
Initial date	05/03/2020		
Institution	University of Granada		
Department/Center	Biochemistry and Molecular Biology 3 and Immunology	School of Medicine	
Country	Spain	Teleph. number	958240731
Key words	Exosomes, microRNAs, macrophages, vascular anomalies		

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

Period	Position/Institution/Country/Interruption cause
01/2017 – 12/2019	Researcher JIN Project, Universidad de Granada, Granada (Spain)
02/2016 – 06/2016	Postdoctoral Fellow, CNIO-ISCIII, Madrid (Spain)
08/2013 – 09/2015	Research Associate, University of Glasgow, Glasgow (UK)
05/2007 – 07/2013	Scientific Researcher, CIBERER, Madrid (Spain)
08/2006 – 04/2007	Graduate, CIB-CSIC, Madrid (Spain)
07/2005 – 07/2006	Predoctoral Fellow (FIS), CIB-CSIC, Madrid (Spain)
07/2001 – 06/2005	Predoctoral Fellow (FPI), CIB-CSIC, Madrid (Spain)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Graduate in Biochemistry	University of Granada	2000
Doctor in Immunology	Complutense University of Madrid	2006

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

My scientific career has been focused on the study of blood vessels, investigating different events that involve the vascular endothelium and the underlying layer of smooth muscle cells. In particular, I have been studying the role of the Transforming Growth Factor (TGF)-β superfamily in healthy and abnormal vasculature, since mutations in the genes encoding some of the TGF-β receptors, co-receptors or related proteins are associated with vascular diseases.

Briefly, I carried out my doctoral thesis at the Center for Biological Research (CSIC, Madrid), where I found that endoglin (*ENG*) and ALK1 (*ACVRL1*), 2 target genes in Hereditary Hemorrhagic Telangiectasia (HHT), are involved and cooperate in the same cellular processes in the vasculature. I collaborated with different groups in the Autonomous University of Madrid, University of Salamanca, and RIKEN (Japan), where I carried out a short stay of 3 months in

2003. During this predoctoral trainning I published many papers regarding studies on endoglin, including the first three-dimensional structure of its extracellular domain.

Then, during my postdoctoral stage, I was recruited by CIBERER in 2007 where I started and developed a new research line on the role of endoglin isoforms during endothelial aging. First, I studied how the short isoform (S-Eng) is induced during endothelial senescence and its contribution to vascular pathology, including hypertension. Interestingly, I deciphered the molecular mechanisms that control the alternative splicing of S-Eng that involves the ASF/SF2 factor, which acts as a central regulator of a common genetic program associated with vascular senescence and aging. In parallel, I co-directed 2 PhD students in their respective doctoral thesis disserted at the Complutense University of Madrid, the one in 2012 studied the release of soluble endoglin and its contribution to hypertension, while the other in 2014 was about the role of S-Eng in the senescence of the myeloid lineage.

Then, in 2013, I moved to the University of Glasgow thanks to a contract from the British Heart Foundation as an Associate Researcher. There I expanded my knowledge about non-coding RNAs (microRNA and lncRNA) in the vasculature, and how miR143 transported by exosomes and their related lncRNA (MIR143HG) are regulated by TGF-β, among other factors, and contribute to the development of pulmonary arterial hypertension (PAH). I returned to Madrid and in 2016 I joined the Breast Cancer Unit of the CNIO, where I joined a project on resistance to anti-angiogenic immunotherapy against breast cancer.

In 2017, I joined the University of Granada (UGR) with a position as a senior researcher thanks to the R&D programs for "Young Researchers" (JIN) of MINECO and "Incorporation of Young Doctors to new lines of research in groups" of the UGR. Here, I have established a new line of research as a principal investigator studying the role of exosomal miRNAs associated with HHT with diagnostic value and their possible role as therapeutic targets.

Currently, I have a permanent position as "Associate Professor" (*Profesor Contratado Doctor*) in the Department of Biochemistry and Molecular Biology 3 and Immunology at UGR.

Part C. RELEVANT MERITS *(sorted by typology)*
C.1. Publications *(see instructions)*

1 **Scientific paper**. Pozo-Agundo, A.; Villaescusa, N.; Martorell-Marugan, J.; et al; Blanco, FJ. (AC); (9/9). 2021. Identification of exosomal microRNA signatura by liquid biopsy in hereditary hemorrhagic telangiectasia patients. International Journal of Molecular Sciences. 22-9450. ISSN 1422-0067.
2 **Scientific paper**. Aristorena, M.; Gallardo Vara, E.; Vicen, M.; et al; Blanco, FJ.; Bernabeu, C.(7/13). 2019. MMP-12, secreted by pro-inflammatory macrophages, targets endoglin in human macrophages and endothelial cells. International Journal of Molecular Sciences. 20-12. ISSN 1422-0067.
3 **Scientific paper**. Rossi, E.; Pericacho, M.; Bachelot-Loza, C.; et al; Blanco, FJ.; Bernabeu, C.(7/12). 2017. Human endoglin as a potential new partner involved in platelet-endothelium interactions. Cellular and molecular life sciences. ISSN 1420-9071.
4 **Scientific paper**. Gallardo-Vara, E.; Blanco, FJ.; Roqué, M.; Friedman, SL.; Suzuki, T.; Botella, LM.; Bernabeu, C.(2/7). 2016. Transcription factor KLF6 upregulates expression of metalloprotease MMP14 and subsequent release of soluble endoglin during vascular injury. Angiogenesis. 19-2, pp.155-226. ISSN 1573-7209.
5 **Scientific paper**. Ojeda-Fernández, L.; Recio-Poveda, L.; Aristorena, M.; et al; Blanco, FJ.; Botella, LM.(5/12). 2016. Mice Lacking Endoglin in Macrophages Show an Impaired Immune Response. PLoS Genetics. 12-3, pp.e1005935. ISSN 1553-7404.
6 **Scientific paper**. Blanco, FJ.(*); Deng, L.(*); Stevens, H.; et al; Baker, AH.(1/17). 2015. MiR-143 activation regulates smooth muscle and endothelial cell crosstalk in pulmonary arterial hypertension. Circulation Research. 117-10, pp.870-883. ISSN 0009-7330.
7 **Scientific paper**. Blanco, FJ. (AC); Ojeda-Fernandez, L.; Aristorena, M.; et al; Bernabeu, C.(1/9). 2015. Genome-wide transcriptional and functional analysis of endoglin isoforms in the human promonocytic cell line U937. Journal of Cellular Physiology. 230-4, pp.947-1005. ISSN 1097-4652.

8 **Scientific paper**. Aristorena, M.; Blanco, FJ.; de Las Casas-Engel, M.; Ojeda-Fernandez, L.; Gallardo-Vara, E.; Corbi, AL.; Botella, LM.; Bernabeu, C.(2/8). 2014. Expression of endoglin isoforms in the myeloid lineage and their role during aging and macrophage polarization. Journal of Cell Science. 127, pp.2723-2735. ISSN 1477-9137.

9 **Scientific paper**. Rossi, E.; Sanz-Rodriguez, F.; Eleno, N.; et al; Blanco, FJ.; Bernabeu, C.(5/10). 2013. Endothelial endoglin is involved in inflammation: role in leukocyte adhesion and transmigration. Blood. 121-2, pp.403-418. ISSN 1528-0020.

10 **Scientific paper**. Garrido-Martín, EM.; Blanco, FJ.; Roquè, M.; et al; Bernabéu, C.(2/10). 2013. Vascular injury triggers Krüppel-like factor 6 mobilization and cooperation with specificity protein 1 to promote endothelial activation through upregulation of the activin receptor-like kinase 1 gene. Circulation Research. 112-1, pp.113-140. ISSN 0009-7330.

11 **Scientific paper**. Valbuena-Diez, AC.; Blanco, FJ.; Oujo, B.; et al; Bernabeu, C.(2/11). 2012. Oxysterol-induced soluble endoglin release and its involvement in hypertension. Circulation. 126-22, pp.2612-2636. ISSN 1524-4539.

12 **Scientific paper**. Rossi, E.; Langa, C.; Gilsanz, A.; et al; Blanco, FJ.; Bernabeu, C.(4/10). 2012. Characterization of chicken endoglin, a member of the zona pellucida family of proteins, and its tissue expression. Gene. 491-1, pp.31-40. ISSN 1879-0038.

13 **Scientific paper**. Alt, A.; Miguel-Romero, L.; Donderis, J.; et al; Blanco, FJ.; Marina, A.(5/9). 2012. Structural and functional insights into endoglin ligand recognition and binding. PLoS One. 7-2, pp.e29948. ISSN 1932-6203.

14 **Scientific paper**. Blanco, FJ. (AC); Bernabéu, C.(1/2). 2012. The Splicing Factor SRSF1 as a Marker for Endothelial Senescence. Frontiers in Physiology. 3, pp.54. ISSN 1664-042X.

15 **Scientific paper**. Blanco, FJ. (AC); Bernabeu, C.(1/2). 2011. Alternative splicing factor or splicing factor-2 plays a key role in intron retention of the endoglin gene during endothelial senescence. Aging Cell. 10-5, pp.896-1803. ISSN 1474-9726.

16 **Scientific paper**. Sierra-Filardi, E.; Puig-Kröger, A.; Blanco, FJ.; et al; Corbí, AL.(3/9). 2011. Activin A skews macrophage polarization by promoting a proinflammatory phenotype and inhibiting the acquisition of anti-inflammatory macrophage markers. Blood. 117-19, pp.5092-5193. ISSN 1528-0020.

17 **Scientific paper**. Damjanovich, K.; Langa, C.; Blanco, FJ.; et al; Bayrak-Toydemir, P.(3/9). 2011. 5'UTR mutations of ENG cause hereditary hemorrhagic telangiectasia. Orphanet Journal of Rare Diseases. 6, pp.85. ISSN 1750-1172.

18 **Scientific paper**. Cristóbal, I.; Blanco, FJ.; Garcia-Orti, L.; et al; Odero, MD.(2/11). 2010. SETBP1 overexpression is a novel leukemogenic mechanism that predicts adverse outcome in elderly patients with acute myeloid leukemia. Blood. 115-3, pp.615-640. ISSN 1528-0020.

19 **Scientific paper**. Garrido-Martin, EM.; Blanco, FJ.; Fernández L, A.; et al; Bernabeu, C.(2/9). 2010. Characterization of the human Activin-A receptor type II-like kinase 1 (ACVRL1) promoter and its regulation by Sp1. BMC Molecular Biology. 11, pp.51. ISSN 1471-2199.

20 **Scientific paper**. Bernabeu, C.; Blanco, FJ.; Langa, C.; Garrido-Martin, EM.; Botella, LM.(2/5). 2010. Involvement of the TGF-beta superfamily signalling pathway in hereditary haemorrhagic telangiectasia. Journal of Applied Biomedicine. 8-3, pp.169-177. ISSN 1214-021X.

21 **Book chapter**. Blanco, FJ. (AC); Bernabeu, C.(1/2). 2012. Alternative Splicing in Endothelial Senescence. Role of the TGF-beta Co-Receptor Endoglin Senescence. InTech. 20. ISBN 978-953-51-0144-4.

C.2. Research projects

1 **B-CTS-34-UGR20**, Estudio de microRNAs exosomales en el desarrollo de malformaciones arteriovenosas y su potencial papel como nuevas dianas terapéuticas. Proyectos I+D+i del Programa Operativo FEDER 2020. Francisco Javier Blanco López. (Universidad de Granada). 2021-2023. 25.000€. Principal investigator.

2 **BMED2015**, Análisis funcional de miRNAs exosomales asociados a la Telangiectasia Hemorrágica Hereditaria. Universidad de Granada. Proyectos de Investigación para la Incorporación de Jóvenes Doctores. Francisco Javier Blanco. (Universidad de Granada). 2017-2021. 34.000 €. Principal investigator.

3 **SAF2015-74313-JIN**, Análisis funcional de miRNAs exosomales asociados a la Telangiectasia Hemorrágica Hereditaria Ministerio de Economía y Hacienda. Programa Estatal de I+D+i Orientados a los Retos de la Sociedad. Francisco Javier Blanco. (Universidad de Granada). 2017-2019. 169.600 €. Principal investigator.
4 **SP/12/9/29593**, Development of miR-145 antagonism as a novel therapeutic strategy for application to the treatment of pulmonary arterial hypertension British Heart Foundation. Margaret R. MacLean. (Institute of Cardiovascular and Medical Sciences). 2013-2015. £442,711. Team member.
5 **SAF2010-19222**, Estudios moleculares sobre endoglina y ALK1, dos componentes del receptor de TGF-beta endotelial implicados en la fisiopatología vascular Ministerio de Ciencia e Innovación. Investigación. Plan Nacional de I+D+i. Carmelo Bernabeu Quirante. (Centro de Investigaciones Biológicas). 2010-2013. 302,500 €. Team member.
6 **MEICA**, Mecanismos moleculares y celulares en enfermedades crónicas inflamatorias y autoinmes Fundación Genoma España. MEICA. Carmelo Bernabeu Quirante. (Centro de Investigaciones Biológicas). 2009-2012. 77,000 €. Team member.

C.3. Congress

Communications at 24 Congresses (15 international and 9 national). The following are highlighted due to their scope:

1 "Diagnostic value of the exosome-transported miRNAs associated with hereditary hemorrhagic telangiectasia (HHT)" 5th GEIVEX Symposium. Granada, Spain. 06/11/2019 – 08/11/2019. Oral presentation. Member of the local organization committee.
2 "Identification of the exosome-transported miRNAs profile in hereditary hemorrhagic telangiectasia (HHT) and its diagnostic value". 42nd SEBBM Congress. Madrid, Spain. 16/06/2019 – 19/06/2019. Poster.
3 "Estudio de microRNAs exosomales de plasma como biomarcadores de HHT". IX Asamblea Nacional HHT. Bilbao, Spain. 03/11/2017 - 05/11/2017. Asociación HHT España. Invited speaker.
4 "Regulation and transport of miR-143 in pulmonary hypertension". 7th Annual BTS Evening Scientific Meeting". London, United Kingdom. 04/12/2014. Scottish Pulmonary Vascular Unit and British Thoracic Society. Invited speaker.
5 "Understanding the role of MIR143HG in the pulmonary arterial hypertension development". Cell Symposia: Regulatory RNAs. Berkeley, United States of America. 19/10/2014 - 21/10/2014. Cell (journal). Poster.
6 "The endoglin overexpression compromises the immune response in myeloid cells. Novel insights for Hereditary Hemorrhagic Telangiectasia". 10th HHT Scientific Conference. Cork, Ireland. 12/06/2013 - 15/06/2013. HHT International Foundation. Oral presentation.
7 "The role of Endoglin isoforms in vascular physiopathology". 18th International Workshop on Vascular Anomalies. Brussels, Belgium. 21/04/2010 - 24/04/2010. International Society for the Study of Vascular Anomalies (ISSVA). Oral presentation.

C.4. Contracts, technological or transfer merits

1 Francisco Javier Blanco López; Pedro Carmona Sáez; Luisa María Botella Cubells. P201930342. Método de obtención de datos útiles para diagnosticar telangiectasia hemorrágica hereditaria Spain. 05/04/2019. Universidad de Granada, GENyO (Fundación Progreso y Salud, Junta de Andalucía), Consejo Superior de Investigaciones Científicas.
2 Carmelo Bernabéu Quirante; Ana Cristina Valbuena Diez; Carmen Langa Poza; Francisco Javier Blanco López; José Miguel López Novoa. P201230244. Inhibidor de la producción de endoglina soluble y su aplicación en patologías donde endoglina soluble tiene un efecto patogénico Spain. 08/07/2014. CSIC, Universidad de Salamanca, CIBER Enfermedades Raras.