MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE ABREVIADO (CVA)

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

Part A. PERSONAL INFORMATION

First name	José María		
Family name	Pérez-Victoria Moreno de Barreda		
Gender (*)	Male	Birth date (dd/mm/yyyy)	17/05/1971
ID number	24270440N		
e-mail	josepv@ipb.csic.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0003-0552-5837	

(*) Mandatory

A.1. Current position

Position	E. Científicos Titulares de Organismos Públicos de Investigación		
Initial date	21/07/2008		
Institution	Consejo Superior de Investigaciones Científicas (CSIC)		
Department/Center	Instituto de Parasitología y Biomedicina “López-Neyra” (IPBLN)		
Country	Spain	Teleph. number	958181658
Key words	Protozoan parasites, *Leishmania*, heme trafficking and mertabolism, drug targets, porphyrins, drug discovery, drug resistance, *Trypanosoma*		

A.2. Previous positions (research activity interuptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
01/01/2004-20/07/2008	**“Programa Ramón y Cajal”.** IPBLN-CSIC. SPAIN
15/11/2001-14/11/2003	**Marie Curie Individual Fellowship** granted by the European Union, Contrato N HPMF-CT-2001-01244). Institut de Biologie et Chimie des Protéines (C.N.R.S.), Lyon, FRANCE.
01/05/1999-15/10/2001	Researcher hired under the research projects **CICYT-FEDER** and **UE-INCO.** IPBLN-CSIC. SPAIN
01/05/1995-30/04/1999	PhD student in the Training Program for Teaching and Research Staff of the **Junta de Andalucía**. IPBLN-CSIC

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Bachelor of Biological Sciences	University of Granada (UGR)	1.994
PhD in Biological Sciences (**extraordinary award**)	University of Granada (UGR)	2.000

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

The main theme of my research group is the study of **porphyrin metabolism and trafficking in protozoan parasites**, mainly the trypanosomatid ***Leishmania* spp.**, in order to **exploit their auxotrophy for the heme group**. In addition, very recently we have incorporated a new research line to the group, **Drug Resistance in *Leishmania***, ceded after his retirement by Dr. Francisco Gamarro, with whom I was part of his research group for more than 10 years. Previously, I completed my doctorate (fellowship granted by the Junta de Andalucía to the best record in the Bachelor of Biological Sciences in the Andalusian Community) studying drug resistance mechanisms in *Leishmania* (Extraordinary Prize year 2000, IPBLN-CSIC Granada) and I did a stage Postdoctoral (Marie Curie Individual Fellowship, IBCP-CNRS Lyon, France) studying drug resistance in tumour cells mediated by a protein that, in addition to drugs, transported porphyrins. Later I returned to Spain in 2004 (“Ramón y Cajal” contract) to work in molecular parasitology and resistance (IPBLN-CSIC) funded as PI by national (FIS and Plan Nacional) and international (Marie Curie ERG of the

Union European) projects. After obtaining the I3 Certificate (outstanding research career), in 2008 I obtained a position of "Científico Titular" of the CSIC in the IPBLN-CSIC (Granada). Since 2015, I'm the responsible of the Research Group (group code CSIC: 827710) "Molecular and cellular parasitology: metabolism and porphyrin trafficking in parasitic protozoa of biomedical interest". From then on, I was especially interested in the metabolism and traffic of porphyrins in parasitic protozoa (*Leishmania* and *Trypanosoma*) auxotrophic for the essential metabolite heme (and more recently, in the coccidia *Eimeria* and *Neospora*). Because they need to scavenge heme from the infected human host, the proteins involved in this rescue are attractive therapeutic targets. Therefore, all my efforts (funded by the Plan Nacional, the Junta de Andalucía and the company DOMCA/DMC RESEARCH CENTER) were directed to characterize this porphyrin traffic in these parasites using an interdisciplinary approach, studying both *in vitro* and *in vivo* the heme metabolism at the parasite-host interface and looking for inhibitors of the identified targets. Our discoveries in the last years have positioned us as a leading group in this field at an international level. As a consequence of this, in the last years I have been invited to give international talks on heme trafficking in trypanosomatids at two Gordon Research Conferences on Porphyrins (USA) at the Gulbenkian Institute of Science (Portugal), at the University of Maryland (USA) and at the University of Porto, and to write a review on this subject in Trends in Parasitology, a main journal in the parasitology area. All this has also resulted in numerous international collaborations with leading groups in the area with which we participate in different national and international projects, and in the signing of contracts and agreements with companies such as Neuron BioPharma, GSK, DOMCA/DMC RESEARCH CENTER, and Ilender. Finally, as indicated above, we have incorporated the drug resistance line in *Leishmania* with which Dr. Gamarro worked. Besides, I am coordinator of a network request (Leishmaniasis from a One Health perspective: approaches for its integrated control - Redes de Investigación 2022) that unites many of the main Spanish research groups on leishmaniasis (11 research groups including the Reference laboratory in leishmaniasis in Spain and the person in charge of the global leishmaniasis control program at WHO) into a network to promote sharing of their research results and promote integrated control. On the other hand, during these last years, in addition to numerous undergraduate and master's students, several Doctoral Theses have been defended that have obtained the highest score (and the extraordinary doctorate award in one of the cases). All the doctors trained in the lab have successfully followed their research careers (Marie Curie Individual Fellowships, Indefinite Positions in Research Institutes, etc.). Besides that, our group actively participates in various scientific outreach actions to make the general public aware of the importance of fighting neglected diseases such as those caused by trypanosomatid parasites.

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

• Sexenios: 4 out of 4 possible (last year, 2019). Quinquenios: 5 out of 5 possible (last year, 2019). Certificate of the I3 Program of the MEC (outstanding research trajectory). 4 doctoral theses supervised and 2 in progress.

• 2 patent applications filed with the OEPM; >80 communications to congresses (national and international)

• Scientific advisor to the Glaxo-SmithKline company on the use of leishmanicidal drugs; Peer Review Activity for 17 International Journals; Reviewer of international (FONCyT-Argentina, CSIC-Uruguay) and national (National Plan and Community of Castilla y León) projects; Thesis tribunal abroad: 3

C.1. Publications (*from 2017)*

43 ISI publications (27 as first or senior author, 36 Q1); 1881 total citations; 1 book chapter. h-index = 24

(*indicates that I share the "corresponding author" although I do not sign at the last position)

- Juez-Castillo G, Valencia-Vidal B, Orrego LM, Cabello-Donayre M, Montosa-Hidalgo L and **JM Pérez-Victoria**. FiCRoN, a deep learning-based algorithm for the automatic determination of intracelular parasite burden from fluorescence microscopy images. Manuscript MEDIA-D-23-00079 under review in *Med. Image Anal.*, **IF:13.828;** Q1, **D1**
- Cabello-Donayre M, Cabello-Donayre I, Orrego LM, Morales JC, Cautain B, Vicente F and **JM Pérez-Victoria**. A yeast-based high-throughput screen identifies inhibitors of

trypanosomatid HRG heme transporters with potent leishmanicidal and trypanocidal activity. Manuscript IJAA-D-23-00002 under review in *Int. J. Antimicrob. Agents*, **IF:15.441;** Q1, **D1**

1. Cabello-Donayre M, Orrego LM, Herráez E, García-Hernández R and **JM Pérez-Victoria**. New insights on heme uptake in *Leishmania* spp. *Int J Mol Sci.* **2022** 23(18):10501. **IF: 6.208**; **Q1**
2. Perner J, Hatalova T, Cabello-Donayre M, Urbanova V, Hartmann D, Jirsova D, **Pérez-Victoria JM**, Kopacek P. HRG transporter enables host haem mobilisation in ticks. *Open Biol*. **2021** Sep;11(9):210048. **IF: 6.410**; **Q1**
3. Laranjeira-Silva MF, Hamza I and **Pérez-Victoria JM**. Iron and heme metabolism at the *Leishmania*-host interface. *Trends Parasitol*. **2020** Mar;36(3):279-289. **IF: 9.014**; Q1, **D1**.
4. Cabello-Donayre M, Herraez E, Orrego LM, Vargas P, Martínez-García M, Campos-Salinas J, Pérez-Victoria I, Vicente B, Marín JJG and **Pérez-Victoria JM**. *Leishmania* heme uptake involves LmFLVCRb, a novel porphyrin transporter required for parasite virulence. *Cell Mol Life Sci.* **2020** May;77(9):1827-1845. **IF: 9.261**; **Q1**.
5. Orrego LM, Cabello-Donayre M, Vargas P, Martínez-García M, Sánchez C, Pineda-Molina E, Jiménez M, Molina R, **Pérez-Victoria JM**. Heme synthesis through the life cycle of the heme auxotrophic parasite *Leishmania major.* FASEB J. **2019** Dec;33(12):13367-13385. **IF: 4.966**, Q1, **D1**.
6. Zuffo M, Stucchi A, Campos-Salinas J, Cabello-Donayre M, Martínez-García M, Belmonte-Reche E, **Pérez-Victoria JM***, Mergny JL, Freccero M, Morales JC, Doria F. Carbohydrate-naphthalene diimide conjugates as potential antiparasitic drugs: Synthesis, evaluation and structure-activity studies. *Eur J Med Chem*. **2019** Feb 1;163:54-66 **IF: 5.573**; Q1, **D1**.
7. Fernández-Pastor I, Martínez-García M, Medina-O'Donnell M, Rivas F, Martínez A, **Pérez-Victoria J.M***, Parra A. Semi-synthesis of ω-hydroxyalkyl-carbonate derivatives of hydroxytyrosol as anti-trypanosome agents *J Nat Prod*. **2018** Sep 28;81(9):2075-2082. . **IF: 4.257**; Q1, **D1**.
8. Martínez-García M, Bart JM, Campos-Salinas J, Valdivia E, Martínez-Bueno M, González-Rey E, Navarro M, Maqueda M, Cebrián R, **Pérez-Victoria JM**. Autophagic-related cell death of Trypanosoma brucei induced by bacteriocin AS-48. *Int J Parasitol Drugs Drug Resist*. **2018** Mar 12;8(2):203-212. **IF: 2.951**; 5IF: 3.817; **Q1**
9. Belmonte-Reche E, Martínez-García M, Guédin A, Zuffo M, Arévalo-Ruiz M, Doria F, Campos-Salinas J, Maynadier M, López-Rubio JJ, Freccero M, Mergny JL, **Pérez-Victoria JM***, Morales JC. G-Quadruplex Identification in the Genome of Protozoan Parasites Points to Naphthalene Diimide Ligands as New Antiparasitic Agents. *J Med Chem*. **2018** Feb 8;61(3):1231-1240. **IF: 6.054**; Q1, **D1**.
10. Arévalo-Ruiz M, Doria F, Belmonte-Reche E, De Rache A, Campos-Salinas J, Lucas R, Falomir E, Carda M, **Pérez-Victoria JM**, Mergny JL, Freccero M, Morales JC. Synthesis, Binding Properties, and Differences in Cell Uptake of G-Quadruplex Ligands Based on Carbohydrate Naphthalene Diimide Conjugates. *Chemistry*. **2017** Feb 10;23(9):2157-2164. **IF: 5.160**; **Q1**.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

>80 communications to congresses (national and international)

International conferences by invitation (last 3 years before the COVID pandemic): **1.-** BSP Trypanosomiasis & Leishmaniasis Seminar 2020, March 2020. Title: Heme metabolism at the parasite-host interface: exploiting porphyrin auxotrophy in *Leishmania*; **2.-** Gordon Research Conference: Chemistry and Biology of Tetrapyrroles Newport (USA), July **2018**. Titutlo: Unravelling heme salvage mechanisms in trypanosomatid parasites to fight neglected tropical diseases,; **3.-** University of Maryland (USA), Julio **2018**. Titutlo: Unravelling heme salvage mechanisms in trypanosomatid parasites to fight neglected tropical diseases; **4.-** University of Porto, Oporto (Portugal), Marzo **2018**. Titutlo: Unravelling heme salvage mechanisms in trypanosomatid parasites to fight neglected tropical diseases, , **5.-** Instituto Gulbenkian de Ciência, Oeiras (Portugal), Marzo **2018**. Titutlo: Unravelling heme salvage mechanisms in trypanosomatid parasites to fight neglected tropical diseases,; **6.-** 6th World

Congress on Leishmaniasis Toledo (Spain). Mayo **2017**. Titutlo: Heme trafficking and metabolism in *Leishmania*., **7.-** XL SEBBM Congress-1st FEBS3+ Joint Meeting of the French-Portuguese-Spanish Biochemical and Molecular Biology SocietiesHeme trafficking and metabolism in trypanosomatid parasites. Barcelona (Spain) **2017**. Titutlo: Heme trafficking and metabolism in trypanosomatid parasites.; **8.-** Gordon Research Conference: Chemistry and Biology of Tetrapyrroles. Newport (USA), Julio **2016**. Titutlo: Trypanosomatid parasites rescue heme from endocytosed hemoglobin through lysosomal HRG transporters;

C.3. Research projects, (actives in the last 5 years)

- La leishmaniosis bajo una perspectiva One Health: aproximaciones para su control integrado (LeishRed). Redes de Investigación 2022. Ref. RED2022-134183-T Coordinador: **José M. Pérez-Victoria**. En evaluación

1. Ferrochelatase as drug target against chicken coccidiosis. The Houghton Trust Ltd (UK); Ref. HT/SPRG/22/01. IP: Virginia Marugan-Hernandez. Duración: 01/01/2023-31/12/2023. Cuantía: 15.000 £.
2. Ferroquelatasas como blancos terapeuticos frente a la malaria y a la leishmaniasis. Programa Internacional I-COOP 2021. Ref. COOPB20622. IP español: **José M. Pérez-Victoria**. Duración: 01/01/2022-31/12/2023. Cuantía 24.000 €
3. Utilización de los residuos de la industria del aceite de oliva para la obtención de triterpenos y fenoles con relevantes propiedades biológicas (BIORESOLIVE) Ref. B-FQM-650-UGR20. Proyectos de I+D+I en el Marco del Programa Operativo FEDER 2020 (Junta de Andalucía). IP: Francisco Rivas Sanchez (UGR) Duración: 01/07/2021-30/06/2023. Cuantía 20.000€
4. Metabolismo de hemo en la interfaz leishmania-hospedador. Proyecto PN2018 - Proy I+D+I - PRG. Retos de la Sociedad, Ref: PID2019-106724RB-I00, IP **José M. Pérez-Victoria**. Duración: 01/06/2020-31/05/2023. Cuantía 147.620 €
5. De la enfermedad ocular crónica a las enfermedades infecciosas: ferroquelatasas como potenciales blancos terapéuticos. PROYECTO, J.A.- Retos de la sociedad andaluza, Ref: P18-RT-3052, IP **José M. Pérez-Victoria**. Duración: 01/01/2020-31/12/2022. Cuantía 137.011 €
6. Metabolismo de hemo en la interfaz Leishmania-hospedador. Ayudas extraordinarias para la preparación de proyectos a realizar en el marco del plan estatal de I+D+I. **CSIC**. Ref. 2019AEP066. IP **José M. Pérez-Victoria**. Duración: 01/01/2020-30/06/2020. Cuantía 14.297 €
7. Auxotrofia para hemo en Leishmania: caracterización del tráfico de porfirinas desde el macrófago infectado hasta la mitocondria del parásito. PN2016 -PROY I+D+I - PRG. RETOS DE LA SOCIEDAD (SAF2016-80228-R). IP **José M. Pérez-Victoria**. Duración: 31/12/2016-30/12/2019. Cuantía 145.200 €
8. Caracterización bioquímica y explotación farmacológica de la entrada de hemo en *Leishmania*, un protozoo patógeno auxótrofo para este metabolito esencial. **Proyecto de Excelencia**, Subvencionado por la Consejería de Educación y Ciencia, **Junta de Andalucía**. Ref BIO1786. IP **José M. Pérez-Victoria**. Duración: Mayo 2.014-Mayo 2.017. Cuantía 152.000 €. Proyecto Motriz con la empresa Neuron BioPharma.

C.4. Contracts, technological or transfer merits,

- **Contracts:** with the company DMC RESEARCH CENTER SL. IP **José M. Pérez-Victoria**. Duration: 01/06/2022-31/12/2023. Amount: **45.278 €**. With the company DOMCA SL. Duration: 01/12/2015-31/12/2016. Amount: **3.000 €**. IP **José M. Pérez-Victoria.** Poyecto Motriz de la Junta de Andalucía (nº 8 of the previous section, IP **José M. Pérez-Victoria**). Participation as a collaborator in contracts with the companies IDEALP'PHARMA (2003-2006), Zentaris Gmbh (2004-2006) and GlaxoSmithKline (2006)
- **Patents: 1.-** Patent filed (Application No.: 201431383) with the Spanish Patent and Trademark Office. Inventors (p.o. of signature): **JM Pérez-Victoria**, M Martínez, M Maqueda, etc.. Título: Fármacos útiles para el tratamiento de patologías inducidas por Trypanosoma sp. Priority country: Spain. Owner entity: CSIC and UGR, 50% each; **2.-** Patent filed (Application No.: P201631265) with the Spanish Patent and Trademark Office. Inventors (p.o. of signature): JC Morales, **JM Pérez-Victoria**, M Arévalo, etc. Título: Naphthalenediimide derivatives for treatment of disease.