

Part A. PERSONAL INFORMATION

CV date 25/10/2023

First name	Salvador		
Family name	Herrero Sendra		
Gender (*)	M	Birth date	
ID number			
e-mail	sherrero@uv.es	http://cbp.uv.es	
Open Researcher and Contributor ID (ORCID) (*)		0000-0001-5690-2108	

A.1. Current position

Position	Full Professor (CU)		
Initial date	13-10-2023		
Institution	Universitat de València		
Department/Center	Biotechmed and Departament of Genetics		
Country	Spain	Telep.	
Key words	Host-pathogen interaction, entomopatògenos, baculovirus, <i>bacillus thuringiensis</i> , Lepidoptera, insect virus, spodoptera spp		

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

Period	Position/Institution/Country/Interruption cause
15/03/1998-31/04/2001	Predoctoral Researcher. University of Valencia. Spain
01/05/2001-31/12/2004	Postdoctoral Researcher. Wageningen U. The Netherlands
01/01/2005-31/12/2009	Tenure track (RyC program). U of Valencia. Spain
01/01/2010-02/01/2011	Associate Researcher. U of Valencia. Spain
03/01/2011-	Associate Professor. U of Valencia. Spain

A.3. Education

PhD	University	Year
Licenciado en CC. biológicas	Universitat de Valencia	03/07/1997
Doctor en CC. biológicas	Universitat de Valencia	28/02/2002

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

After studying Biology (with focus on Biochemistry), I performed a PhD in molecular biology and genetics at Universitat de Valencia (Spain). My PhD and part of my postdoctoral research was focused on the mode of action of *Bacillus thuringiensis* insecticidal toxins and how insects can become resistant to that bacteria and its main virulence factors, the Cry toxins. During my postdoctoral period at Wageningen RU (The Netherlands), I had the opportunity to perform certain research with baculovirus and become fascinated about insect viruses and the interplay with their host. Since then, I have focused my research interest in understanding the mechanism underlining the insect interaction with its viral and bacterial pathogens, somehow specializing in insect virology and pathology. Research in my team deals with the insect-pathogen interaction in a broad sense. I am interested and I have contributed to the understanding of how insects respond to pathogens, but also how other factors (other pathogens, different host plant, etc...) can influence in the interaction. I am also interested in the discovery of novel insect viruses that could also influence in insect's physiology and its interaction with other trophic levels. Recently, my team has started a more applied research line aiming to apply our knowledge and tools collected during the last two decades in insect genetics and insect-pathogen interaction to optimize mass-rearing production and prevent diseases outbreaks.

In addition to the postdoctoral period, during my career I had the opportunity to expand my knowledge and technical skill in certain subjects and experimental methods by visiting (19 months in total) prestigious research laboratories worldwide (CSIRO-Entomology, Australia (2006); Weizmann Institute, Israel (2012); INRA, France (2015); Andong University, South Korea (2017), and Wageningen University (2021).

To date, I have published more than 60 articles on peer-review journals (most of them in Q1) that have been cited more than 2500 times, having a h-index of 23 (JCR index). In more than 75% of the publication I play a major role as first or last author/co-author. I have been involved in about 30 national and international research projects and contracts, being principal investigator of 3 EU-funded projects and 5 projects from the Spanish Research Agency. I have supervised 4 PhD theses and more than 20 Master theses. I'm currently involved in the supervision and co-supervision of 7 PhD theses at the University of Valencia (SP), Wageningen University. (NL), University of Tours (FR) and University of Porto (PT).

As result of my scientific activity, I am an active member of multiple national and international scientific societies and committees (e.g. Society of Invertebrate Pathology, International Committee on Taxonomy of Viruses (ICTV) working group: *Iflavirus* y *Dicistrovirus*), Associate Editor of the Archive Insect Biochemistry and Physiology (from 2018), and member of the editorial board of multiple scientific journals (Invertebrate Immunity (2012-2016), Applied and Environmental Microbiology (2013- 2016), and evaluator for multiple funding agencies and programs (ANEP (multiple programs), Agencia Andaluza de Evaluación, ACSUCYL, AgreenSkills (Francia), Israelian Science Fundation (Israel), BBRSCA (Inglaterra), FONCYT (Argentina), ERC-program (EU)).

As Associate professor at the University, I have also been involved in teaching multiple subjects in Genetics and Molecular biology. I was involved in the design of the programs for the studies of Criminology and Law-Criminology at the University of Valencia. Thanks to that, nowadays, students from those degree acquire an important background on molecular techniques use on forensic science. More recently, I have been one of the promoters of a new master's degree in Virology at the University of Valencia that will start in the 2022-23 course.

Part C. RELEVANT MERITS

C.1. Publications (10 representative last 10 years)

The full list can be obtained from:

<http://scholar.google.es/citations?user=8Ahej-sAAAAJ&hl=en>

Gasmi, L., (21 authors) **Herrero, S*** & Nakai, M. 2021. Horizontally transmitted parasitoid killing factor shapes insect defense to parasitoids. **Science**, 373(6554), 535-541. (*co-corresponding author)

Impact factor: 47,728 Citations: -

Area and position: MULTIDISCIPLINARY SCIENCES, 2 de 72

Cobertura medios: <https://science.altmetric.com/details/110640108/news>

Martínez-Solís, M., Collado, MC. **Herrero, S.** 2020. Influence of Diet, Sex, and Viral Infections on the Gut Microbiota Composition of *Spodoptera exigua* Caterpillars. **Frontiers in Microbiology**, 11, 753.

Impact factor: 4,236 Citations: 8

Area and position: MICROBIOLOGY, 34 de 135

Gasmi L, Martinez-Solis M, Frattini A, Ye M, Collado MC, Turlings T, Erb M, **Herrero S.** 2018. Can herbivore-induced volatiles protect plants by increasing the herbivores' susceptibility to natural pathogens? **Applied & Environmental Microbiology** 85, e01468-18

Impact factor: 3,633 Citations: 25

Area and position: BIOTECHNOLOGY & APPLIED MICROBIOLOGY, 39 de 160

Jakubowska AK, Murillo R, Carballo A, Williams T, van Lent JWM, Caballero P, **Herrero S.** 2016. Iflavirus increases its infectivity and physical stability in association with baculovirus. **PeerJ** 4:e1687.

Impact factor: 2.18 Citations: 25

Area and position: MULTIDISCIPLINARY SCIENCES, 14 de 63

Cobertura medios: <https://www.altmetric.com/details/6044646/news>

Herrero S, Bel Y, Hernandez-Martinez P, Ferre J. 2016. Susceptibility, mechanisms of response and resistance to *Bacillus thuringiensis* toxins in *Spodoptera* spp. **Curr Opin Insect Sci** 15:89-96.

Impact factor: 3.66 Citations: 28

Area and position: ENTOMOLOGY, 5 de 91

Gasmi L, Boulain H, Gauthier J, Hua-Van A, Musset K, Jakubowska AK, Aury JM, Volkoff AN, Huguet E, **Herrero S***, Drezen JM. 2015. Recurrent Domestication by Lepidoptera of Genes from Their Parasites Mediated by Bracoviruses. **PLoS Genet** 11:e1005470. (*co-corresponding author)

Impact factor: 6.61 Citations: 35

Area and position: GENETICS & HEREDITY, 15 de 166

Artículo recomendado F1000

Cobertura medios: <http://journals.plos.org/plosgenetics/article/related?id=10.1371/journal.pgen.1005470>

Jakubowska AK, Vogel H, **Herrero S**. 2013. Increase in gut microbiota after immune suppression in baculovirus-infected larvae. **PLoS Pathog** 9:e1003379.

Impact factor: 8.136 Citations: 40

Area and position: VIROLOGY, 2 de 32

Pascual L, Jakubowska AK, Blanca JM, Cañizares J, Ferré J, Gloeckner G, Vogel H, **Herrero S**. 2012. The transcriptome of *Spodoptera exigua* larvae exposed to different types of microbes. **Insect Biochem Mol Biol** 42:557-570.

Impact factor: 3.234 Citations: 60

Area and position: ENTOMOLOGY 2 de 87

Millán-Leiva A, Jakubowska AK, Ferré J, **Herrero S**. 2012. Genome sequence of SelV-1, a novel virus from the *Iflaviridae* family infective to *Spodoptera exigua*. **J Invertebr Pathol** 109:127-133.

Impact factor: 2.669 Citations: 19

Area and position: ZOOLOGY 16 de 149

Hernandez-Martinez P, Naseri B, Navarro-Cerrillo G, Escriche B, Ferre J, **Herrero S**. 2010. Increase in midgut microbiota load induces an apparent immune priming and increases tolerance to *Bacillus thuringiensis* **Environ Microbiol** 12:2730-2737.

Impact factor: 5.93 Citations: 67

Area and position: MICROBIOLOGY 16 de 123

C.2. Congress

Total contributions: About 90 (national and international)

Invited talks: 12 (all international)

C.3. Research projects and grants (last 10 years as PI)

Title: Compatibilidad de la resistencia inducida por micorrizas con enemigos naturales para expandir el manejo integrado de plagas.

Funding organization: Ministerio de Ciencia e Innovación y Universidades

Duration: from 2022 until 2025

Principal investigator: Salvador Herrero Sendra

Project number: PID2021-124813OB-C33 **Amount (in €):** 193.600,00

Title: Herramientas genéticas para la producción sostenible de insectos para alimentación.

Funding organization: Ministerio de Ciencia, Innovación y Universidades.

Duration: from 2022 until 2024

Principal investigator: Salvador Herrero Sendra

Project number: TED2021-130679B-I00 **Amount (in €):** 144.900,00

Title: INSECT DOCTORS: A joint doctoral programme to educate tomorrow's insect pathologists: Solving disease problems in the upcoming insect rearing industry.

Funding organization: EU Framework Programme HORIZON 2020

Duration: from 2019 until 2023

Principal investigator: Salvador Herrero Sendra

Project number: 859850 **Amount (in €):** 250.904,00 (total 4.400.000 €)

Title: Uso de la diversidad del tomate y la resistencia inducida por micorriza (MIR) para mejorar el control de herbívoros mediante baculovirus y otros enemigos naturales

Funding organization: Ministerio de Economía y Competitividad

Duration: from 2019 until 2021

Principal investigator: Salvador Herrero Sendra

Project number: RTI2018-094350-B-C32 **Amount (in €):** 169.400,00

Title: Virome NGS analysis of pests and pathogens for plant protection (VIROPLANT)

Funding organization: European Union (H2020 program)

Duration: from 2018 until 2021

Principal investigator: Salvador Herrero Sendra

Project number: H2020-SFS-2016-2017- nº 73567 **Amount (in €):** 284.000,00

Title: Interacciones tri-tróficas para un mejor control de lepidópteros plaga con insecticidas basados en baculovirus

Funding organization: Ministerio de Economía y Competitividad

Duration: from 2015 until 2017

Principal investigator: Salvador Herrero Sendra

Project number: AGL2014-57752-C2-2-R **Amount (in €):** 235.950,00.

Title: Una nueva lectina con una elevada capacidad de unión a bacterias. Aplicaciones para la captura de microorganismos bacterianos

Funding organization: Universitat de València

Duration: from 2014 until 2015

Principal investigator: Salvador Herrero Sendra

Project number: UV-INV-PROVAL13-180011 **Amount (in €):** 34.000,00

Title: Efecto de nuevos virus de RNA y de Genes del huésped en la actividad del nucleopoliedrovirus de *Spodoptera exigua*

Funding organization: Ministerio de Ciencia e Innovación.

Duration: from 2012 until 2014

Principal investigator: Salvador Herrero Sendra

Project number: AGL2011-30352-C02-02 **Amount (in €):** 145.200,00

C.4. Contracts, technological or transfer merits

Title: Asesoramiento en el área de control y mejora microbiológico y genético en la cría del *Tenebrio molitor*

Company: Feedtec

Duration: from 2021 until 2025

Principal investigator: Salvador Herrero **Amount:** Multiple

Title: Fitness-cost associated to the covert infections with RNA viruses on insect mass-rearings

Company: International Atomic Energy Agency (IAEA-FAO)

Duration: from 2018 until 2022

Principal investigator: Salvador Herrero **Amount:** Multiple (travelling and expenses)

Title: Contrato abierto de asesoramiento sobre uso de baculovirus como sistema de expresión de proteínas

Company: Valentia Biopharma S.L.

Duration: from 2010 until 2012

Principal investigator: Salvador Herrero **Amount:** Multiple

Title: Acuerdo de transferencia de material entre la Universitat de València (UV) y Alternative Gene Expression, S.L.

Company: Alternative gene expression S.L. (ALGENEX)

Duration: from 2012 until 2014

Principal investigator: Salvador Herrero **Amount:** Multiple

Patent:: S.Herrero; AK Jakubowska; M. Martínez-Solís; S. Gómez-Sebastián; J. López-Vidal; JA. Martínez Escribano **Title:** Nuevos promotores derivados de baculovirus con elevada actividad en sistemas de expresión en baculovirus

Núm. de application: P201430914 **Priority country:** SPAIN **Priority date:** 2014

Owners: Universitat de València and Alternative gene expression S.L. (ALGENEX)