

Part A. PERSONAL INFORMATION		CV date		December 15th, 2022
First and Family name	Olga VALVERDE GRANADOS			
Social Security, Passport, ID number	32.852.959N	Born	12/4th/1965	
Researcher codes	WoS Researcher ID (*)	D-8654-2012		
	SCOPUS Author ID(*)			
	Open Researcher and Contributor ID (ORCID) **	0000-0003-2264-7852		

(*) At least one of these is mandatory

(**) Mandatory

A.1. Current position

Name of University/Institution	Universitat Pompeu Fabra		
Department	Department of Experimental and Health Sciences		
Address and Country	PRBB. C/ Dr Aiguader, 88; Barcelona (Spain)		
Phone number	93 3160867	E-mail	olga.valverde@upf.edu
Current position	Full Professor (Catedrática)	From	2008
Key words	Drug addiction, Fetal alcohol spectrum disorders, alcohol use disorders, depression, psychostimulants, cognition, animal models, behaviour, cannabinoids, neurobiology, neuropsychiatric disorders.		

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

Period	Position/Institution/Country/Interruption cause
2010	Maternity (August 25th to December 31 st)
2008 -	Full Professor with tenure, Department of Medicine and Life Science (MELIS), Universitat Pompeu Fabra, Spain
2002	Maternity (January 23rd 1998 to July 1st)
1998	Maternity (November 13th 1998 to March 10th, 1999)
1998 - 2008	Associated Professor, Department of Experimental and Health Sciences, Universitat Pompeu Fabra, Spain.
1997 - 1998	Researcher contract INSERM, INSERM U-266, Paris, France.
1996 - 1997	Postdoctoral fellow "Training and Mobility of Researchers" (EU). Dpt. Chimie Organique. Université René Descartes. Paris. France.
1995 - 1996	Postdoctoral Research Contract CNRS. Dpt. Chimie Organique. Université René Descartes. Paris. France.
1993 - 1995	Postdoctoral fellow "Human Capital and Mobility Program" (EU). Dpt. Chimie Organique. Université René Descartes. Paris. France.
1990 - 1993	Assistant Professor. Biochemistry Department. University of Cadiz. Spain.

A.3. Education

	University	Year
Bachelor's Degree in Medicine	University of Cadiz	01-07-1989
PhD in Neuroscience	University of Cadiz	13-05-1992
PhD in Pharmacy	Université René Descartes	23-11-1996

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

My scientific career begins at the University of Cádiz where I received a PhD in the Neurosciences Program (1992). My postdoc (Université René Descartes, Paris, France, lasted 6 years (1992-1998) and from part of this work, I defended a second PhD Thesis in 1996 (Russell Award for the best thesis). I also made two short stays in La Jolla (USA) and Montreal (Canada). During this period, I worked in several research projects that allowed us to characterize functions of the opioid system (*Nature*, 383: 819, 1996; *Nature* 388: 586, 1997; *EMBO J* 17: 886: 1998). Later, I joined the University Pompeu Fabra (UPF) in 1998. From 2007, I lead the **Behavioural Neurobiology Research Group (GReNeC-NeuroBio)** at the UPF (<https://www.upf.edu/web/grenec>). Together with my team, we have contributed to **study of the function of cannabinoid receptors** in various physiological and pathological conditions, such as

depression, drug addiction, and pain (*Science* 283: 401, 1999; *Neuron* 34: 807, 2002; *PNAS* 102: 15670, 2005; *Neuropsychopharmacology*, 30: 1670, 2005; *Biol Psychiat.*, 63: 1030; 2008).

In the last five years, my investigation has been focused on the study of the neurobiological substrate of psychiatric disorders, including the study of the fetal alcohol spectrum disorders, drug addiction and its comorbidity. These lines of research have been funded, and I have been the PI of eight competitive grants and one contract with the pharmaceutical company. (UE 634143 – from 2015 to 2018 – and UE 600387 - From 2016 – to 2019-); (Ministry of Science, Innovation and Universities (PID2019-104077RB-I00/AEI- from 2019 to 2022-), Ministry of Health (RETICS-ISCIII, RD16/017/010 – from 2016 to 2021-; RIADPAd-ISCIII- RD21/0009/0001 – from 2022 to 2025; and Plan Nacional sobre Drogas 2014/020 – from 2015 to 2018 – and Plan Nacional sobre Drogas 2018/007 – from 2019 to 2021-), Ministry of Economy (SAF 2016-75966 – from 2016 to 2019-), and Generalitat de Catalunya (2017SGR109 – from 2017 to 2021).

The **main achievements** during these years include:

i) The study of the **deleterious effects of maternal alcohol binge drinking for developing foetus**. We evaluated the effect of prenatal and postnatal alcohol exposure on cognitive and addictive behaviour in mice and its underlying molecular mechanisms. (*Cantacorps et al., 2017, Neuropharmacology* 2017, 123: 368; *Cantacorps et al., 2018, Progress Neuropsychopharmacol Biol Psychiat* 84: 237). We have described that maternal binge-like alcohol consumption during prenatal period alters sensitivity to the reinforcing effects of cocaine in adult offspring (*Cantacorps et al., 2020, Br. J Pharmacol.* 177: 1090).
ii) We showed that **cannabidiol attenuates cocaine intake** in the operant self-administration task (*Alegre-Zurano et al., 2022, Biomed. Pharmacother.* 148: 112708). Cannabidiol enhanced hippocampal neurogenesis and reduced cocaine voluntary intake by a mechanism involving the cannabinoid CB1 receptors (*Luján et al., 2018, Neuropharmacology* 143: 163; *Luján et al., 2020, Addiction Biol* 25: e12778). We have demonstrated that circadian rhythms through the participation of Bmal1 modulate cocaine intake (*Castro-Zavala et al., 2022, Biomed. Pharmacother.* 153: 113333).
iii) We have developed a **model of depression** using the procedure of maternal separation to evaluate comorbidity between drug addiction and depression (*Castro-Zavala et al., 2021, Addiction Biol.* 26: e1294; *Castro-Zavala et al., 2021 Progr Neuropsychopharmacol Biol Psychiat* 109: 110262; *Martín-Sánchez et al., 2022, Prog Neuropsychopharmacol Biol Psychiat* 109: 110262, 115: 110508). We have investigated the shared genetic bases between major depression and Alzheimer's disease based on a comprehensive characterization from the behavioural to transcriptomic level (*Martín-Sánchez et al., 2021, Alzheimer's Dis Ther.*, 13: 73). Additionally, we have recently set up a model of **post-partum depression** (*García-Baos et al., 2022 Biomed. Pharmacother.* 154: 113598).

As technologies, we have developed several and sophisticated behavioral test, including operant task paradigms, stereotaxic and other surgeries in rodents, and we apply several multiple biochemistry and molecular techniques (immunohistochemistry, western blot, RT-qPCRs, ELISA), transcriptomic and bioinformatic analysis.

I have received the **ICREA Academia award** (2022-2026) (Generalitat de Catalunya) for my research activity.

- I have completed **5** officially recognized research periods (CNEAI) ("tramos de investigación").
- Doctoral thesis directed in last 10 years: 10 defended and 4 in progress.
- Total citations: **14.172**; Publications with 100 or more citations: **26**; h index: **51**, index i10: **122**
- Total peer-review publications: **147**; Publications in Q1: **126**.

Part C. RELEVANT MERITS

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

All publications available in: <http://www.ncbi.nlm.nih.gov/pubmed/?term=valverde+o>

- 1.- García-Baos A, Gallego-Landin I, Ferreres-Álvarez I, Puig-Reyne X, Castro-Zavala A, **Valverde O***, Martín-Sánchez A*. (2022) Effects of fast-acting antidepressant drugs on a postpartum depression mice model. *Biomed Pharmacother.* 154: 113598. ***Equally contributed**. IF: 7,41 D1.
- 2.- Castro-Zavala A, Alegre-Zurano L, Cantacorps L, Gallego-Landin I, Welz PS, Benitah SA, **Valverde O**. (2022) Bmal1-knockout mice exhibit reduced cocaine-seeking behaviour and cognitive impairments. *Biomed Pharmacother.* 153: 113333. IF: 7,41 D1.
- 3.- Alegre-Zurano L, Berbegal-Sáez P, Luján MÁ, Cantacorps L, Martín-Sánchez A, García-Baos A, **Valverde O**. (2022) Cannabidiol decreases motivation for cocaine in a behavioral economics

paradigm but does not prevent incubation of craving in mice. *Biomed Pharmacother.* 148: 112708. IF: 7,41 D1. Citations: 1.

4.- Martín-Sánchez A, Piñero J, Nonell L, Arnal M, Ribe EM, Nevado-Holgado A, Lovestone S, Sanz F, Furlong LI, **Valverde O.** (2021) Comorbidity between Alzheimer's disease and major depression: a behavioural and transcriptomic characterization study in mice. *Alzheimers Res Ther.* Apr 2;13(1):73. IF: 8,83 D1. Citations: 5.

5.- García-Baos A, Puig-Reyne X, García-Algar Ó, **Valverde O.** (2021) Cannabidiol attenuates cognitive deficits and neuroinflammation induced by early alcohol exposure in a mice model. *Biomed Pharmacother.* Jun 11; 141:111813. IF: 7,41 D1. Citations: 4.

6.- Martín-Sánchez A, García-Baos A, Castro-Zavala A, Alegre-Zurano L, **Valverde O.** (2021) Early-life stress exacerbates the effects of WIN55,212-2 and modulates the cannabinoid receptor type 1 expression. *Neuropharmacology.* Feb 15;184:108416. IF: 5,27, Q1. Citations: 6.

7.- Castro-Zavala A, Martín-Sánchez A, Luján MÁ, **Valverde O.** (2021) Maternal separation increases cocaine intake through a mechanism involving plasticity in glutamate signalling. *Addict Biol.* 26(2): e12911. IF: 4,28, Q1. Citations: 14.

8.- Cantacorps L, Montagud-Romero S, Luján MÁ, **Valverde O.** (2020) Prenatal and postnatal alcohol exposure increases vulnerability to cocaine addiction in adult mice. *Br J Pharmacol.* Mar;177(5):1090-1105. IF: 9,47, D1. Citations: 12.

9.- Luján MA, Cantacorps L, **Valverde O.** (2020) The pharmacological reduction of hippocampal neurogenesis attenuates the protective effects of cannabidiol on voluntary cocaine intake. *Addict Biol.* Jun 4:e1277 8. DOI:10.1111/adb.12778. IF: 4,28, D1. Citations: 35.

10.- De Backer JF, Monlezun S, Detraux B, Gazan A, Vanopdenbosch L, Cheron J, Cannazza G, Valverde S, Cantacorps L, Nassar M, Venance L, **Valverde O***, Faure P*, Zoli M*, De Backer O*, Gall D*, Schiffmann SN*, de Kerchove d'Exaerde A. (2018) Deletion of Maged1 in mice abolishes locomotor and reinforcing effects of cocaine. *EMBO Rep.* pii: e45089. doi: 10.15252/embr.201745089. IF: 9,1, D1. ***Equally contributed.** Citations: 16.

11.- Luján MÁ, Castro-Zavala A, Alegre-Zurano L, **Valverde O.** (2018) Repeated Cannabidiol treatment reduces cocaine intake and modulates neural proliferation and CB1R expression in the mouse hippocampus. *Neuropharmacology*, 143:163-175, 2018. IF: 5,27, Q1. Citations: 90.

12.- López-Arnau R, Luján MA, Duart-Castells L, Pubill D, Camarasa J, **Valverde O***, Escubedo E. (2017) Exposure of adolescent mice to 3,4-methylenedioxypyrovalerone increases the psychostimulant, rewarding and reinforcing effects of cocaine in adulthood. *Br J Pharmacol.* 174(10): 1161-1173. ***Corresponding author.** IF: 9,47; D1. Citations: 21.

13.- Moscoso-Castro M, López-Cano M, Gracia-Rubio I, Ciruela F, **Valverde O.** (2017) Cognitive impairments associated with alterations in synaptic proteins induced by genetic loss of adenosine A2a receptors in mice. *Neuropharmacology*, 126: 48-57. IF: 5,27; D1. Citations: 21.

14.- Cantacorps L, Alfonso-Loeches S, Moscoso-Castro M, Cuitavi J, Gracia-Rubio I, López-Arnau R, Escubedo E, Guerri C, **Valverde O.** (2017) Maternal alcohol binge drinking induces persistent neuroinflammation associated with myelin damage and behavioural dysfunctions in offspring mice. *Neuropharmacology.* 123: 368-384; IF: 5,27; Q1. Citations: 47.

C.2. Congress. (Invited speaker)

- Valverde O. Sistema endocannabinoide y depresión dual. 24 Congreso Patología Dual. Madrid. 2022.
- Valverde O. Involvement of endocannabinoid system on cognitive alterations observed in a mice model of fetal alcohol spectrum disorder. IV International Congress of Psychobiology. Valencia, 2022.
- Valverde O. Cannabinoids modulate cognitive deficits and neuroinflammation induced by early alcohol exposure. ESBRA Meeting. Timisoara. Romania. October 2021.
- Valverde O. Alteraciones cognitivas producidas por la exposición prenatal al alcohol. Efectos de los endocannabinoides. Congreso Internacional de Patología Dual. Sevilla, December 2021.
- Valverde O. Uso del cannabidiol para el tratamiento del consumo de cocaína en el animal de experimentación. XLVIII Jornadas de Sociodrogalcohol. November 2021, Barcelona.
- Valverde O. "Effects of cannabidiol on cocaine intake and its modulatory effects on neural proliferation in the mouse hippocampus". III International Psychobiology Conf. Granada, May 2019.
- Valverde O. "Applications of Psygenet and Disgenet tools for the evaluation of the comorbidity between depression and Alzheimer disease" October 2019. Lisbon Addiction (Portugal).

- Valverde O. "Drug addiction and its comorbidity. Basic and Clinical Research". CRG Group leader's Conferences. PRBB. Barcelona, July 2018.
- Valverde O. "Environmental factors that affect the develop of drug addiction". CIMUS Conferences. USC. Santiago de Compostela, May 2018.

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

- La depresión postparto como factor de vulnerabilidad para el consumo de cannabis de la madre y la descendencia. **EXP2022/008695**. Funded by Plan Nacional sobre Drogas. Ministerio de Sanidad. From 2023-2025. **PI: Olga Valverde**.
- Cannabidiol effects on different phases of cocaine addictive process. Influence of circadian rhythms on these effects. **PID2019-104077-RB-100**. Funded by: AEI, Ministerio de Ciencia y Tecnología. From 2020 to 2023. **PI: Olga Valverde**.
- Factores ambientales que inciden en la recaída al consumo de cocaína en el ratón. Efectos protectores del cannabidiol. **SAF2016-75966R**. Funded by: Ministerio de Economía y Competitividad (MINECO). From 2016 to 2019. **PI: Olga Valverde**.
- Alteraciones cognitivas y vulnerabilidad al consumo de cannabinoides debido la exposición al alcohol en forma de atracón durante la gestación y la lactancia. Posibles tratamientos experimentales con fitocannabinoides. **PNSD 2018/007**. Funded by: Plan Nacional sobre Drogas. Ministerio de Sanidad. From 2018 to 2020. **PI: Olga Valverde**.
- Efectos de un modelo de privación materna sobre el consumo de alcohol y cannabinoides en el ratón adolescente. **PNSD 2014/020**. Funded by: Plan Nacional sobre Drogas. Ministerio de Sanidad. From 2015 to 2018. **PI: Olga Valverde**.
- Long-term consequences of binge ethanol consumption (vs chronic drinking) on emotional, cognitive, and addictive behavior in mice. **SAF2013-41761R**. Funded by: Ministerio de Economía y Competitividad (MINECO). From 2014 to 2016. **PI: Olga Valverde**.
- Creating medically-driven integrative bioinformatics applications focused on oncology, CNS disorders and their comorbidities (MedBioinformatics). **UE 634143**. Funded by UE. H2020, PHC-32-2014 topic. From 2015 to 2018. **PI UPF-GReNeC: O. Valverde**; Coordinator: F. Sanz.
- Redes Temáticas de Investigación Cooperativas del Instituto de Salud Carlos III. Red de Trastornos Adictivos (Retics-RTA). **RD06/001/1001; RD12/0024/0028 and RD16/0017/0010**. Funded by Ministerio de Sanidad. From 2007 to 2012; From 2012 to 2016 and from 2017 to 2021; **PI: O. Valverde**.
- Efectos de un modelo de privación materna sobre el consumo de alcohol y cannabinoides en el ratón adolescente. **2014/020**. Funded by Plan Nacional sobre Drogas. Ministerio de Sanidad. Spain. From 1/2015 to 12/2018. **PI: Olga Valverde**
- Neurobiological basis to identify animal models for the study of psychiatry co-morbidity: drug abuse and depression. **SAF 2010/60249**. Funded by Ministerio de Economía (MINECO). Spain. From 2011 to 2014. **PI: Olga Valverde**
- Suport a Grups de Recerca de Catalunya al Grup de Recerca en Neurobiologia del Comportament (GReNeC) **2009SGR684; 2014SGR034; 2017SGR109** Funded by AGAUR. Generalitat de Catalunya. From 2014 to 2019. **PI: Olga Valverde**

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

- Efectos del Cannabidiol y del Delta9-THC en un modelo de psicosis en ratón. Contract with the company: **Phytoplant Research S.L.**, From 2017 to current. Contract and research collaboration. **PI: Olga Valverde**
- Olga Valverde, is founder of **MedBioinformatics Solutions S.L.** (<https://www.medbioinformatics.com/>), a **spin-off company** of the Universitat Pompeu Fabra and the Institut Hospital del Mar d'Investigacions Mèdiques (IMIM), Barcelona. Olga Valverde owns a 10% of the shares of the Company.
- Olga Valverde is Vice-Director of the Medicine and Health Science Department (MELIS) (UPF). Vice-Director of Social Sciences Evaluation Panel (CAR), AQU Catalunya. President of Enrique Fuentes Quintana Foundation panel for the Award to the best doctoral thesis in Health Sciences. Panel member at the ANR evaluation panel (Integrative and Cognitive Neuroscience - CE37) (2019-2021). Director of the International PhD program in Biomedicine (UPF) (From 2019-2022). Panel member of ERC Consolidated grants (LS5-Neuroscience) from 2022. AEI Colaborator (Neuroscience subprogram) from 2020.