

**Part A. Personal Information**

<b>DATE</b>	20/01/2021
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Surname(s)	Guaza	
Forename	Carmen	
Social Security, Passport, ID number	02693581M	
Sex	Female	
Age	70	
Researcher codes Research ID: T4473-2017	WoS Researcher ID (*)	
	SCOPUS Author ID(*)	7006046907
	Open Researcher and Contributor ID (ORCID)	

(\*) At least one of these is mandatory

**A.1. Current position**

Post/ Professional Category	Professor	
UNESCO Code	241112	
Key Words	Neuroimmunology, Neuroinflammation, glial cells, remyelination; multiple sclerosis; Cannabinoid System	
Name of the University/Institution	CSIC	
	Department/Centre	Instituto Cajal
	Full Address	Avda. Dr. Arce 47, 28002, Madrid, Spain
	Email Address	cgjb@cajal.csic.es
	Phone Number	34915854742
Start date		

**A.2. Education (title, institution, date)**

Year	University	Degree	Title
1973	UCM	First degree	Biological Sciences
		Masters (if appropriate)	
1977	UCM	PhD	Biological Sciences

**A.3. Indicators of Quality in Scientific Production (See the instructions)**

<p>Sexenios 6 Tesis Doctorales dirigidas en los últimos 10 años: 7 Publicaciones totales: 165 Publicaciones totales en Q1:139 Publicaciones últimos cinco años: 27; 25 Q1 (2 D1) y 2 Q2; Citaciones totales: 10.842. Índice-h: 59</p>
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**Part B. Free Summary of CV (Max. of 3.500 characters, including spaces)**

<p>As leader of Neuroimmunology Group within the Functional and Systems Neurobiology Department at the Instituto Cajal (CSIC), I have solid experience in the field of Neuroimmunology, as well as in the field of cannabinoid (CB) research. We have been working in an integrative way on CNS inflammation and its regulation during pathological situations and neurodegenerative diseases such as multiple sclerosis (MS). For this we have used multidisciplinary approaches, involving animal models of MS, as well as cellular models. Our main goals include the study of cellular and molecular targets underlying the benefits of new derivatives of CBs in animal models of MS such as EAE and Theiler's virus induced demyelinating diseases My expertise includes continuous financial support as PI since 1990 in multiple projects from competitive sources, Ministerio de Economía y Competitividad, Plan Nacional, Spanish National Institute of Health Carlos III, European Projects (Biomed-2), European TMR Program; European Concerted Actions; Networks in Cannabinoid</p>
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Research (Regional grants, CAM), and in the Spanish MS Research network, REEM, as a member of executive board and as the leader of the Neuroimmunology Research line. I have had private funded grants (Noscira; F. Koplwicz, F. Mutua Madrileña; Serono; F. Uriach, VivaCell Biotechnology; GW Pharmaceuticals )

## Part C. Relevant accomplishments

### C.1. Main Publications. Last five years

L. Mestre, G Alonso, A. Feliú, M. Mecha, C. Martín, L.M. Villar, **Guaza C.** (2021). Aging and neuroinflammation: Changes in immune cell responses, axon integrity, and motor function in a viral model of progressive multiple sclerosis. *Aging Cell* 20(9):e13440. A; FI: 9,304

A. Feliú, L. Mestre, F.J. Carrillo-Salinas, V.W. Yong, M. Mecha, **Guaza C** (2020) 2-arachidonoylglycerol reduces chondroitin sulphate proteoglycan production by astrocytes and enhances oligodendrocyte differentiation under inhibitory conditions. *Glia* 68(6), 1255-1273; A; FI: 7,452. Citas: 4

M. Mecha, N. Yanguas-Casás, A. Feliú, L. Mestre, F.J. Carrillo-Salinas, K. Riecken, D. Gomez-Nicola, **Guaza C.** (2020). Involvement of Wnt 7a in the role of M2c microglia in neural stem cell oligodendrogenesis. *J Neuroinflammation* 17 (1): 88. A; FI: 8,322. Citas: 11

L. Mestre, F.J. Carrillo-Salinas, A. Feliú, M. Mecha, G. Alonso, C. Espejo, L. Calvo-Barreiro, J.L. Luque-García, H. Estevez, L.M. Villar, **Guaza C.** (2020). ¿How oral probiotics affect the severity of a progressive model of multiple sclerosis? Bringing commensal bacteria into the neurodegenerative process. *Gut Microbes* 12 (1) 1813532; A; FI: 8,99. Citas: 10

Mecha M, Carrillo-Salinas FJ, Feliú A, Mestre L, **Guaza C.** Perspectives on cannabis-based therapy of multiple sclerosis: A minireview. *Front Cell Neurosci.* 2020 Feb 19;14:34; R. FI: 4,86. Citas: 14

Navarrete C, García-Martin A, Garrido-Rodríguez M, Mestre L, Feliú A, **Guaza C**, Calzado MA, Muñoz (2020). E. Effects of HPE-101 on inflammation and remyelination in murine models of multiple sclerosis. *Neurobiol Dis.* 2020 Sep;143:104994. FI: 5,986. Citas: 12

Mecha M, Yanguas-Casás N, Feliú A, Mestre L, Carrillo-Salinas F, Azcoitia I, Yong VW, **Guaza C.** (2019). The endocannabinoid 2-AG enhances spontaneous remyelination by targeting microglia. *Brain Behav Immun* 77, 110-126. A; FI: 7,217. Citas: 21

Mestre L, Carrillo-Salinas FJ, Mecha M, Feliú A, Espejo C, Álvarez-Cermeño JC, Villar LM, **Guaza C.** (2019). Manipulation of gut microbiota influences immune responses, axon preservation and motor disability in a model of progressive multiple sclerosis. *Front Immunol.* 14;10:1374; A. FI: 6,76. Citas:23.

Navarrete C, Carrillo-Salinas F, Palomares B, Mecha M, Jiménez-Jiménez C, Mestre L, Feliú A, Bellido ML, Fiebich BL, Appendino G, Calzado MA, **Guaza C**, Muñoz E (2018). Hypoxia mimetic activity of VCE-004.8, a cannabidiol quinone derivative: implications for multiple sclerosis therapy. *J Neuroinflammation* 15, 64. doi: 10.1186; A; FI: 5,717. Citas:38

Mecha M, Feliú A, Machín I, Cordero C Carrillo-Salinas FJ, Mestre L, Hernández-Torres G, Ortega-Gutiérrez S, María L López-Rodríguez, De Castro F, Clemente D. **Guaza C** (2018) 2-AG limits Theiler's virus induced acute neuroinflammation by modulating microglia and promoting MDSCs. *GLIA* Feb 27. doi: 10.1002; A; FI: 6,2. Citas: 30

Mestre L, Carrillo-Salinas FJ, Mecha M, Feliú A, **Guaza C.** (2018). Gut microbiota, cannabinoid system and neuroimmune interaction: New perspectives in multiple sclerosis. *Biochem Pharmacol.* 2018 Nov;157:51-66. doi: 10.101; R, FI: 4,825. Citas: 26.

Laso-García F, Ramos-Cejudo J, Carrillo-Salinas FJ, Otero-Ortega L, Feliú A, Gómez-de Frutos M, Mecha M, Díez-Tejedor E, **Guaza C**, Gutiérrez-Fernández M. (2018). Therapeutic potential of extracellular vesicles derived from human mesenchymal stem cells in a model of pregressive multiple sclerosis. *PLoS One.* 19;13(9):e0202590. A; IF: 2,776. Citas: 79

Feliú A, Del Río BI, Carrillo-Salinas FJ, Hernández-Torres G, Mestre L, Puente N, Ortega-Gutiérrez S, López-Rodríguez ML, Grandes P, Mecha M, **Guaza C**. 2-arachidonoylglycerol reduces proteoglycans and enhances remyelination in a progressive model of demyelination. *J Neurosci*. 2017 Jul 27. pii: 2900-16. doi: 10.1523. A; FI: 6,92. Citas:40

Hernández-Torres G, Enríquez-Palacios E, Mecha M, Feliú A, Rueda-Zubiaurre A, Angelina A, Martín-Cruz L, Martín-Fontecha M, Palomares O, **Guaza C**, Peña-Cabrera E, López-Rodríguez ML, Ortega-Gutiérrez S. (2018). Development of a fluorescent bodipy probe for visualization of the serotonin.5-HT1A receptors in native cells of the immune system. *Bioconjug Chem*. 20;29(6):2021-2027. A; FI: 4,349. Citas:13.

Masgrau R, **Guaza C**, Ransohoff RM, Galea E. (2017) Should We Stop Saying 'Glia' and 'Neuroinflammation'? *Trends Mol Med*. 2017 Jun;23 (6):486-500. doi: 10.1016. R, FI: 10,732. Citas: 63.

Tapia M, Dominguez A, Zhang W, Del Puerto A, Ciorraga M, Benitez MJ, **Guaza C**, Garrido JJ. Cannabinoid Receptors Modulate Neuronal Morphology and AnkyrinG Density at the Axon Initial Segment. *Front Cell Neurosci*. 2017 Jan 25;11:5. doi: 10.3389. A, FI: 4,94. Citas:19

Carrillo-Salinas FJ, Mestre L, Mecha M, Feliú A, Del Campo R, Villarrubia N, Espejo C, Montalbán X, Álvarez-Cermeño JC, Villar LM, **Guaza C**. Gut dysbiosis and neuroimmune responses to brain infection with Theiler's murine encephalomyelitis virus. *Sci Rep*. 2017 Mar 14;7:44377. doi: 10.1038. A, FI: 5,47. Citas:32

Mecha M, Carrillo-Salinas FJ, Feliú A, Mestre L, **Guaza C**. (2016) Microglia activation states and cannabinoid system: Therapeutic implications. *Pharmacol Ther*. 166:40-55. doi: 10.1016. R, FI: 11,127. Citas :99

Morales P, Gómez-Cañas M, Navarro G, Hurst DP, Carrillo-Salinas FJ, Lagartera L, Pazos R, Goya P, Reggio PH, **Guaza C**, Franco R, Fernández-Ruiz J, Jagerovic N. (2016) Chromenopyrazole, a Versatile Cannabinoid Scaffold with in Vivo Activity in a Model of Multiple Sclerosis. *J Med Chem*. 59(14):6753-71. doi: 10.1021. A, FI: 6,259. Citas: 29

Lopez de Lapuente A\*, Feliú A\*, Ugidos N\*, Mecha M, Mena J, Astobiza I, Riera J, Carrillo-Salinas F, Comabella M, Montalbán X, Alloza I, **Guaza C**, Vandebroek K. (2016). Novel insights into the multiple sclerosis gene risk ANKRD55. *J Immunology* 196(11):4553-65. A, FI: 5,22. Citas:18

Hernangómez M, Klusáková I, Joukal M, Hradilová-Svíženská I, **Guaza C**, Dubový P. (2016) CD200R1 agonist attenuates glial activation, inflammatory reactions, and hypersensitivity immediately after its intrathecal application in a rat neuropathic pain model. *J Neuroinflammation*. Feb 18;13(1):43. doi: 10.1186/s12974-016-0508-8. A, FI: 5,49. Citas:49

## C.2. Research Projects and Grants

*Neurofarmacología del Sistema Cannabinoide: Del laboratorio a la clínica*

Entidad financiadora: CAM ref: S2010/BMD-2308

Entidades participantes: CSIC (I C; IQM); UCM; Fundación Hospital Alcorcón; UNED; Universidad Rey Juan Carlos I; H. Ramón y Cajal; H. Universitario Clínico; Universidad Compluense de Madrid, F. C. Biológicas, F. Medicina; Duración, desde: 2011 hasta: 2014

Investigador responsable: Manuel Guzmán Pastor (coordinador) Responsable Instituto Cajal (**C Guaza**)

RED ESPAÑOLA DE ESCLEROSIS MULTIPLE (REEM)

Entidad financiadora: ISCIII; Ref: RD12/0032/0008

Duración, desde: 2013 hasta: 2016

Coordinador: Pablo Villoslada; Grupo Instituto Cajal: **C. Guaza**

*Sistema Cannabinoide en Oligodendrogénesis y Remielinización en EM: Impacto de la Polarización Microglial en los Mecanismos de Reparación del SNC*

Entidad financiadora: MINECO, Plan Nacional Ref: SAF -2013-42784-R

Duración, desde: 2013 hasta: 2016

Investigador responsable: **C. Guaza**

Número de investigadores participantes: 6

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*Sistema Cannabinoide y mecanismos endógenos de reparación en enfermedades desmielinizantes del SNC. Implicación de los astrocitos y microglía*

Entidad financiadora: MINECO, Plan Nacional Ref: SAF -2016-76449-R

Duración, desde: 2017 hasta: 2019

Investigadores responsables: **C Guaza y L Mestre**

Número de investigadores participantes: 6

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RED ESPAÑOLA DE ESCLEROSIS MULTIPLE (REEM)

Entidad financiadora: ISCIII; Ref: RD16/0015/0021

Duración, desde: 2016 hasta: 2020

Coordinadora: Luisa María Villar-Guimerans; Grupo Instituto Cajal: **C. Guaza**

Programa 1: Neuroinflamación y Remielinización.

*Regulación epigenética de la respuesta inflamatoria*

Entidad financiadora: MINECO .Progama Retos Colaboración 2016; Ref: RTC-2016-4955-1

Entidades participantes: Oryzon-Genomics, Fundació Bosch i Gimpera ; UAB, CSIC

Duración, desde: 2016 hasta: 2018

Investigador responsable: Grupo Instituto Cajal: **C Guaza**

Número de investigadores participantes: 6

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### **C.3. Contracts**

Therapeutic potential of novel fitocannabinoid derivatives

IP: Carmen Guaza

Entidad Financiadora: **VivaCell Biotechnology SL**

Duración: 2 años (2016 y 2017)

### **.4. Patents and other IPR**

#### **.5, C.6, C.7... Other**

Master Universitario en Neurociencias UAM-Instituto Cajal, CSIC. Curso de <i>Neuroinmunología</i> organizadora y profesora (6 créditos).
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