



Isabel Machín Díaz

Lab Manager

Neuroinmuno-Repair Group (Lab i2-04)

Hospital Nacional de Paraplégicos

Toledo, Spain

ORCID code: 0000-0001-6483-5726

1. UNIVERSITY EDUCATION

- Bachelor in Food Science and Technology (2005). University of Ciudad Real, Castilla- La Mancha, Spain.
- Diploma in Chemistry (2003). University of Toledo, Castilla –La Mancha, Spain.
- Master in Workplace Hazzard Prevention. FEDETO 2007

2.- RESEARCH AND PROFESSIONAL EXPERIENCE

October 2015- Present: Lab Manager Neuroimmuno-Repair Group (GNIR). National Hospital for Paraplegics-SESCAM. Toledo, (Spain)

March 2007- October 2015: Lab Manager of the Developmental Neurobiology Group (GNDe). National Hospital for Paraplegics- SESCAM, Toledo (Spain)

May 2006- December 2006: Laboratory Technician, Product Quality Control Departament. DELAVIUDA Group, Toledo (Spain).

September 2005- April 2006: Laboratory Technician, Microbiology and Food Technology Departament. University of Castilla La Mancha, Toledo (Spain).

3.- PUBLICATIONS

3.1. Original papers

-Bribián, A; Medina-Rodríguez, EM; Josa-Prado, F; García-álvarez, I.; **Machín-Díaz,I.**; Esteban, PF.; Murcia-Belmonte, V. ; Vega-Zelaya, L.; Pastor, J.; Garrido, L.; de Castro, F. *Functional*

heterogeneity of mouse and human brain OPCs: relevance for preclinical studies in Multiple Sclerosis. 2020 J. Clin. Med. 9(6):1681.

-Melero- Jerez, C; Alonso-Gómez, A; Moñivas, E; Lebrón- Galán, R.; **Machín- Díaz, I.**; de Castro, F; Clemente, D. 2020. *The proportion of myeloid-derived suppressor cells in the spleen is related to the severity of the clinical course and wetissue damage extent in a murine model of multiple sclerosis.Neurobiol.Dis. 140:104869. IF: 5.16. (Q1 in Neurosciences).*

- Malhotra, S.; Costa, C.; Eixarch, H.; Keller, C.W.; Amman, L.S.; Martínez-Banaclocha, H.; Migdalia, L.; Sarró, E.; **Machín-Díaz, I.**; Villar, L.M.; Triviño, J.C.; Oliver-Martos, B.; Navarro-Parladé, L.; Calvo-Barreiro, L.; Matesanz, F.; Vandebroek, K.; Urcelay, E.; Martínez-Ginés,M.L.; Tejada-Velarde, A.; Fissolo, N.; Castilló, J.; Sánchez, A.; Robertson, A.A.B.; Clemente, D., Prinz, M.; Pelegrin, P.; Lünemann, J.D.; Espejo, C.; Montalbán, X.; Comabella, M. *NLRP3 inflammasome as prognostic factor and therapeutic target in primary progressive multiple sclerosis. 2020 Brain. . IF: 11.81. (D1 in Clinical Neurology and Neurosciences).*

- Melero-Jerez, C., Suardíaz, M., Lebrón-Galán, R., Marín-Bañasco, C., Oliver-Martos, B., **Machín-Díaz, I.**, Fernández, Ó., de Castro F., Clemente D. *The presence and suppressive activity of myeloid-derived suppressor cells are potentiated after interferon-β treatment in a murine model of multiple sclerosis. 2019 Neurobiol. Dis.. 127-13-31. IF: 5.16. (Q1 in Neurosciences).*

- Mecha M, Feliú A, **Machín-Díaz I**, Cordero C, Carrillo-Salinas FJ, Mestre L, Hernández-Torres G, Ortega-Gutiérrez S, López-Rodríguez ML, de de Castro F, Clemente D and Guaza C. *2-AG limits Theiler's virus induced acute neuroinflammation by modulating microglia and promoting MDSCs. 2018. Glia 66(7):1447-1463. IF: 6.2. (D1 in Neurosciences).*

- Leonetti C, Macrez R, Pruvost M, Hommet Y, Bronsard J, Fournier, A., Perrigault M, **Machín I**, Vivien D, Clemente D, De Castro F, Maubert E, Docagne F. *Tissue-type plasminogen activator exerts EGF-like chemokinetic effects on oligodendrocytes in white matter (re)myelination. 2017. Mol Neurodegen. 12: 20. IF: 6.78. (D1 in Neurosciences).*

3.2 Conference Publication

- Carolina Melero Jerez; Rafael Lebrón Galán; Aitana Alonso Gómez; Esther Moñivas; **Isabel Machín Díaz**; Fernando de Castro Soubriet; Diego Clemente López. Myeloid-derived suppressor cell peripheral load is an indicator of myelin/axonal damage in the murine model of multiple sclerosis. 2017. GLIA. 65, pp. E-427 - E-427. WILEY.

4.- SCIENTIFIC COMMUNICATIONS IN NATIONAL/INTERNATIONAL CONFERENCES

- C. Camacho-Toledano, R. Lebrón-Galán, **I. Machín-Díaz**, J. García-Arocha, MC. Ortega, D. Clemente. *Myeloid-Derived Suppressor Cells associated to a mild disease course are good bioindicators of a higher remyelinating capability in Multiple Sclerosis. 09/2020. 8th Joint ACTRIMS-ECTRIMS Meeting. Washintong D.C, EE.UU. 2020*

- C. Camacho-Toledano, R. Lebrón-Galán, **I. Machín-Díaz**, J. García-Arocha, MC. Ortega, D. Clemente. *NG2 cells and the immunoregulatory environment in the CNS: key factors for multiple sclerosis severity*. 11/2020. 3rd Symposium on Physiology and Pathology of Neuroglia. Queretaro, Mexico. 2020

- Rafael Lebrón Galán; Irene Sánchez de Lara; Manuel Nieto Díaz; Celia Camacho Toledano; **Isabel Machín Díaz**; Maria Cristina Ortega; Diego Clemente. *Peripheral myeloid-derived suppressor cells: a new tool to predict the severity of the clinical course and tissue damage extent in multiple sclerosis*. 35th Congress of the European Committee for Treatment and Research in Multiple Sclerosis. 2019 Stocholm. Sweden

- Maria Cristina Ortega; Rafael Lebrón Galán; Inmaculada Pérez Molina; Rosa García Montero; **Isabel Machín Díaz**; Diego Clemente. *Myeloid-derived suppressor cells in multiple sclerosis patients: putative bioindicators for the severity of the clinical course and neuro-repair ability of demyelinating lesions*. 18^o Congreso de la Sociedad Española de Neurociencia SENC. 2019. Santiago de Compostela, Spain

- Irene Sánchez de Lara; Rafael Lebrón Galán; **Isabel Machín Díaz**; Celia Camacho Toledano; Maria Cristina Ortega; Diego Clemente. *Myeloid-derived suppressor cell peripheral load can predict a greater endogenous remyelination capacity in the murine model of multiple sclerosis* 18^o Congreso de la Sociedad Española de Neurociencia SENC 2019. Santiago de Compostela, Spain

- Maria Cristina Ortega; Rafael Lebrón Galán; Inmaculada Pérez Molina; Rosa García Montero; **Isabel Machín Díaz**; Diego Clemente. *Myeloid-derived suppressor cells as putative biomarker to predict the severity of the clinical course and the potential remyelination in multiple sclerosis*. XIV European Meeting on Glial Cells in Health and Disease 2019 Oporto, Portugal

- Irene Sánchez de Lara; Rafael Labrón Galán; **Isabel Machín Díaz**; Celia Camacho Toledano; Maria Cristina Ortega; Diego Clemente. *The peripheral blood content of myeloid-derived suppressor cells is a bioindicator of a greater capacity for spontaneous remyelination in multiple sclerosis*. XIV European Meeting on Glial Cells in Health and Disease. 2019 Oporto, Portugal

- Carolina Melero Jerez; Rafael Lebrón Galán; Aitana Alonso Gómez; Esther Moñivas; **Isabel Machín Díaz**; María Cristina Ortega Muñoz; Fernando de Castro Soubriet; Diego Clemente López. *Myeloid-derived suppressor cells: putative bioindicators of tissue damage and the aggressiveness of the clinical course in a murine model of Multiple Sclerosis*. 17th National Congress of the Spanish Society of Neuroscience. 09/2017. Alicante, España. Poster.

- Ana Bribian; Eva Medina Rodriguez; Isabel Garcia Alvarez; Sonia Nocera; **Isabel Machín Díaz**; Pedro Felipe Esteban Ruiz; Verónica Murcia Belmonte; Jesus Pastor; Leoncio Garrido; Fernando de Castro. *Systematic Demonstration of oligodendrocyte precursor cells functional heterogeneity depending on the animal species and age: a proof of concept for futher (re) myelinating therapies for Multiple Sclerosis*. European Glia Meeting. 2017. Edimburgh. Poster

- Eric Maubert; Camille Leonetti; Richard Macrez; Mathilde Pruvost; Yannic Hommet; Jérémie Bronsard; Antoine Fournier; Maxime Perrigault; **Isabel Machin**; Denis Vivien; Diego Clemente; Fernando de Castro; Fabian Docagne. *Tissue-type plasminogen activator influences oligodendrocyte migration during myelination and remyelination*. European Glia Meeting. 2017. Edimburgh. Poster

- Eva María Medina Rodríguez; Ana Bribián Arruego; Rafael Lebrón Galán; Iris Sánchez Raya; **Isabel Machín Díaz**; A Boyd; Anna Williams; Carlos Gil; A Martínez; Fernando de Castro Soubriet. *Phosphodiesterase-7 and GKS-3 Dual inhibition promotes remyelination after injury in the Central Nervous System*. 09/2015, 16th Congress of the Spanish Society of Neuroscience. Granada, Spain. Poster.

- Ana Bribián; Eva María Medina Rodríguez; Carolina Melero Jerez; **Isabel Machin Diaz**; Verónica Murcia Belmonte; Fernando de Castro Soubriet. *Oligodendrocyte Precursor Cells are physiologically heterogeneous: the essential ontogenetic lessons for brain repair*. 09/2015, 16th Congress of the Spanish Society of Neuroscience. 2015. Granada, Spain. Poster.

- Ana Bribián Arruego; Eva María Medina Rodríguez; Carolina Melero Jerez; **Isabel Machín Díaz**; Verónica Murcia Belmonte; Jesus Pastor; Fernando de Castro Soubriet. *Physiology of oligodendrocyte precursor cells: ontogenetic lessons for brain repair* 5/2015. Cortical Evolution. Toledo, Spain

- Pedro Esteban Ruiz; Verónica Murcia Belmonte; **Isabel Machín Díaz**; Fernando de Castro Soubriet. *Erk1/2 are the intracellular pathways activated by anosmin-1 and fgf2 in fgfr1-mediated OPC migration*. 9/2013. 15th Congress of the Spanish Society of Neuroscience. Oviedo, Spain. Poster.

- Ana Bribián Arruego; Eva Medina Rodríguez; **Isabel Machín Díaz**; Fernando de Castro Soubriet. *Roles of Anosmin-1 and FGF-2 in the biology of adult murine and human oligodendrocyte precursor cells*. 9/2013. 15th Congress of the Spanish Society of Neuroscience. Oviedo, Spain. Poster.

- Diego Clemente López; María Cristina Ortega Muñoz; **Isabel Machín Díaz**; Francisco Javier Arenzana Sanagérico; Fernando de Castro Soubriet. *Endogenous remyelination: pathways for future therapies in multiple sclerosis*. . European Glia Meeting. 2011. Praha. Poster

- Diego Clemente López; María Cristina Ortega Muñoz; **Isabel Machín Díaz**; Francisco Javier Arenzana Sanagérico; Fernando de Castro Soubriet. *FGF-2 and Anosmin-1 in multiple sclerosis: actors in pathology, targets for therapy?* European Glia Meeting. 2011. Praha. Simposia

5.- GRANTED RESEARCH PROJECTS

2020-2022: Ayudas para la incorporación de personal investigador en el campo de la salud 2020-Ayudas para investigadores doctores Consejería de Sanidad de Castilla-La Mancha. *Consejería de Sanidad de*

Castilla-La Mancha. Total amount: 71.365 €. **Role:** AR

2020-2022: Analysis of the immune-regulatory component of the peripheral and central immune response as biomarker of the clinical course severity in multiple sclerosis. Merck Salud Foundation. **Total amount:** 30,000€. **PI:** Diego Clemente **Role:** Associated Researcher (AR)

2019-2020: Myeloid-derived suppressor cells as bioindicators of the severity of the clinical course and response to treatments in multiple sclerosis. *Health Research Fund, Carlos III Institute. Spanish Ministry of Science, Innovation and Universities.* **Total amount:** 255,310€. **PI:** Diego Clemente **Role:** AR.

2017-2021: Spanish Network for Multiple Sclerosis-REEM (thematic program networks for cooperative research- RETICS) *Health Research Fund, I Carlos III Institute. Spanish Ministry of Science, Innovation and Universities.* **Total amount:** 112,500€. **PI:** Diego Clemente **Role:** AR.

2019-2020: Morpho-functional analysis of myeloid-derived suppressor cells in the central nervous system of patients with progressive forms of multiple sclerosis and their relationship with disease severity and neural repair. Competitive Call from the Spanish Multiple Sclerosis Association (*Esclerosis Múltiple España*) in collaboration with the the Spanish Network for Multiple Sclerosis. **Total amount:** 25,000€. **PI:** Diego Clemente **Role:** AR.

2018-2020: Potencial terapéutico de las células mieloides supresoras como tratamiento neuro-reparador y modificador del curso clínico en esclerosis múltiple (II-2018_07). *Consejería de Sanidad de Castilla-La Mancha.* **Total amount:** 50.571,47 €. **Role:** RF

2018-2019: Study of monocytic-myeloid-derived suppressor cells in primary progressive multiple sclerosis, within the coordinated grant "Study of the pathophysiological mechanisms with an important role in the progressive forms of multiple sclerosis". Competitive Call from the Spanish Multiple Sclerosis Association (*Esclerosis Múltiple España*) in collaboration with the *Spanish Network for Multiple Sclerosis.* **Total amount:** 7,647.06€. **PI:** Diego Clemente **Role:** AR.

2017-2018: Myeloid-derived suppressor cells and disease aggressiveness: a novel cell therapy to accelerate myelin repair in multiple sclerosis. *Fondation pour l'aide à la recherche sur la sclérose en plaques* (ARSEP Foundation) **Total amount:** 110,000€. **PI:** Diego Clemente **Role:** AR.

2017: Myeloid-derived suppressor cells as novel biomarkers of the multiple sclerosis: the relation with tissue damage and neuro-repair. *Health Research Fund, Carlos III Institute. Spanish Ministry of Science, Innovation and Universities.* **Total amount:** 98,615€. **PI:** Diego Clemente **Role:** AR.

2013-2015: Mielina: desde la oligodendroglíogenesis a las enfermedades desmielinizantes-esclerosis múltiple. *Ministerio de Economía y Competitividad.* **Total amount:** 160.000€. **Role:** AR.

2013-2014: Targeting tPA/NMDA interactions as a novel strategy of immunointervention in multiple sclerosis. *Fondation pour l'aide à la recherche sur la sclérose en plaques* (ARSEP Foundation). Total amount: 75.000€. Role: AR.

2010-2012: Estudio del receptor megalina y sus ligandos como posible diana terapéutica en enfermedades desmielinizantes. *Fundación para la Investigación Sanitaria de Castilla-La Mancha* (FISCAM; PI-2009/26.). **Total amount:** 74.041,80 €. **Role:** AR.

- Projects supported by private entities

2020-2022: Analysis of the effect of Evobrutinib over Myeloid-Derived Suppressor Cells. *Merck Serono EMB*. **Total amount:** 200.000 €. **Role:** AR.

2018-2019: Estudio de las células mieloides supresoras como biomarcadores del curso clínico de la esclerosis múltiple y su implicación en estrategias reparadoras de la vaina de mielina dañada. *Asociación Torrijeña de Esclerosis Múltiple y ADEMTO*. **Total amount:** 31.768 €. **Role:** AR.

2017-2018: Células mieloides supresoras: diana terapéutica endógena para el tratamiento de la esclerosis múltiple. *Aciturri Aeronáutica S.L., Vesuvius Ibérica LA, Galletas Cora y Embutidos y Jamones España e Hijos*. **Total amount:** 16.400 €. **Role:** AR.

2016-2017: Métodos complementarios para la inmunomodulación de la actividad inflamatoria asociada a la esclerosis múltiple como herramienta neuro-reparadora. *Asociación de Esclerosis Múltiple de Toledo (ADEMTO)*. **Total amount:** 16.400 €. **Role:** AR

2014: Glunomab-driven enhancing of myeloid-derived suppressor cells. *PAION Deutschland GmbH*. **Total amount:** 21000€. **Role:** AR.

Awards

- **2020:** the Academic Editors from JCM, selected the paper "Functional Heterogeneity of Mouse and Human Brain OPCs: Relevance for Preclinical Studies in Multiple Sclerosis", as one of the 10 most meritorious papers for JCM.

- **2020:** ISSN International Best Researcher Award for the article The proportion of myeloid-derived suppressor cells in the spleen is related to the severity of the clinical course and tissue damage extent in a murine model of multiple sclerosis

- **2018:** Second prize in the Neuroart Awards from the Spanish Society of Neurosciences, for the photograph Rainbow tree

- **2017:** XII Juanelo Turriano Awards for the Professional Ingenuity

- **2010:** Research Award "Esperanza". Spanish Multiple Sclerosis Foundation in Toledo.