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My professional career has been linked to the study of injuries in the nervous system and neurodegenerative diseases. After my Bachelor's degree in Biology in Universidad Complutense I worked as a research technician in the Molecular Neurology laboratory at the Hospital Nacional de Paraplégicos (HNP). Then, I started my PhD studies under the direction of Dr. Manuel Nieto Sampedro and Dr. Lorenzo Romero at the Instituto Cajal and the HNP, focused on the pharmacological modulation of axonal regeneration after lesions to the Central Nervous System. I also participated in the development of other research projects focused on the role of bile salts in the development of glial scar and neuroinflammation after an injury. After PhD completion, I closely collaborated with industry developing a project to determine the effect of different cannabinoid drugs on the neuroinflammatory response and its therapeutic potential in Alzheimer's disease in the Endocannabinoids and Neuroinflammation laboratory at Universidad Francisco de Vitoria. In 2018 I returned to HNP, joining the Molecular Neuroprotection group, studying the role of miRNAs in the development of spinal cord injury and their neuroprotection role, evaluating their changes in hippocampal neurons. I also participated together with the rest of the team, in the development and validation of safe and effective tools that allow the administration of microRNAs for the treatment of spinal cord injury. Finally, since 2022, I work as study coordinator in the Functional Exploration and Neuromodulation of the Nervous System (FENNSI) group, managing and coordinating the clinical trials performed by the group.

#### Selected articles:

- **Barreda-Manso M.A.**, Soto A., Muñoz-Galdeano T., Reigada D., Nieto-Díaz M, Maza R.M. *MiR-138-5p upregulation during neuronal maturation parallels with an increase in neuronal survival*. bioRxiv. 2022 Nov 16; 516547.
- Maza R.M., **Barreda-Manso M.A.**, Reigada D., Silván Á., Muñoz-Galdeano T., Soto A., Del Águila Á., Nieto-Díaz M. *MicroRNA-138-5p Targets Pro-Apoptotic Factors and Favors Neural Cell Survival: Analysis in the Injured Spinal Cord*. Biomedicines. 2022 Jun 30;10(7):1559.
- Reigada D., Soto V., González-Rodríguez M., **Barreda-Manso M.A.**, Soto A., Muñoz-Galdeano T., Nieto-Díaz M. *Stereological evaluation of tissue preservation after neuroprotective treatments for traumatic spinal cord injury*. bioRxiv. 2022 May 05; 490720.
- Soto A., Nieto-Díaz M., Reigada D., **Barreda-Manso M.A.**, Muñoz-Galdeano T., Maza R.M. *miR-182-5p Regulates Nogo-A Expression and Promotes Neurite Outgrowth of Hippocampal Neurons In Vitro*. Pharmaceuticals (Basel). 2022 Apr 25;15(5):529.
- **Barreda-Manso, M. A.**, Nieto-Díaz, M., Soto, A., Muñoz-Galdeano, T., Reigada, D., & Maza, R. M. *In silico and in vitro analyses validate human microRNAs targeting the SARS-CoV-2 3'-UTR*. International Journal of Molecular Sciences, 2021, 22(11), 6094.

- López A, Aparicio N, Pazos MR, Grande MT, **Barreda-Manso MA**, Benito I, Vázquez C, Amores M, Ruiz-Pérez G, García-García E, Beatka M, Tolón R, Dittle B, Hillard C, Romero J. Cannabinoid CB2 receptors in the mouse brain: relevance for Alzheimer's disease. *J Neuroinflammation*. 2018 May 24. 15 (1):158.
- Romero-Ramírez L, Nieto-Sampedro M, **Barreda-Manso MA**. Integrated stress response as a therapeutic target for CNS injuries. *BioMed Res. Int.* 2017:6953156.
- Yanguas-Casás N, **Barreda-Manso MA**, Pérez-Rial S, Nieto-Sampedro M, Romero-Ramírez L. TGFbeta contributes to anti-inflammatory effects of tauroursodeoxycholic acid on an animal model of acute neuroinflammation. *Mol. Neurobiol.* 2017 Nov;54(9):6737-6749.
- Yanguas-Casás N, **Barreda-Manso MA**, Nieto-Sampedro M, Romero-Ramírez L. TUDCA: an agonist of the bile acid receptor GPBAR1/GTR5 with anti-inflammatory effects in microglial cells. *J. Cell. Physiol.* 2017 Aug;232(8):2231-2245.
- **Barreda-Manso MA**, Yanguas-Casás N, Nieto-Sampedro M, Romero-Ramírez L. Neuroprotection and blood-brain barrier restoration by Salubrinal after a cortical stab injury. *J. Cell. Physiol.* 2017 Jun;232(6):1501-1510.
- Romero-Ramírez L, Nieto-Sampedro M, **Barreda-Manso MA**. All roads go to Salubrinal: endoplasmic reticulum stress, neuroprotection and glial scar formation. *Neural Regen Res.* 2015 Dec; 10 (12):1926-27.
- Romero-Ramírez L, García-Álvarez I, Casas J, **Barreda-Manso MA**, Yanguas-Casás N, Nieto-Sampedro M, Fernández-Mayoralas A. New oleyl glycoside as anti-cancer agent that targets on neutral sphingomyelinase. *Biochem Pharmacol.* 2015 July 14; 97:158-72.
- **Barreda-Manso MA**, Yanguas-Casás N, Nieto-Sampedro M, Romero-Ramírez L. Salubrinal inhibits the expression of proteoglycans and favors neurite outgrowth from cortical neurons *in vitro*. *Exp Cell Res.* 2015 Apr 13. 335: 82-90.
- Romero-Ramírez L, **Barreda-Manso MA**, Dámaso-Riquelme E, Yanguas-Casás N, Nieto-Sampedro M. Pharmacological modulation of the glial scar for CNS injury repair. *Trauma.* 2014 Dec 15; 25(4).
- Yanguas-Casás N, **Barreda-Manso MA**, Nieto-Sampedro M, Romero-Ramírez L. Tauroursodeoxycholic acid reduces glial cell activation in an animal model of acute neuroinflammation. *J Neuroinflammation.* 2014 Mar 19;11(1):50.
- García-Álvarez I, Groult H, Casas J, **Barreda-Manso MA**, Yanguas-Casás N, Nieto-Sampedro M, Romero-Ramírez L, Fernández-Mayoralas A. Synthesis of antimitotic thioglycosides: *in vitro* and *in vivo* evaluation of their anticancer activity. *J Med Chem.* 2011 Oct 13;54(19):6949-55.