

LÍNEA DE INVESTIGACIÓN:

Neuroinmunología: nuevas estrategias terapéuticas para el tratamiento de enfermedades con base inmunitaria

Investigador Principal: Dr. Mario Delgado Mora
(mdelgado@ipb.csic.es)

Instituto de Parasitología y Biomedicina Lopez-Neyra, CSIC, Avd Conocimiento, PT Ciencias Salud, Granada 18016. 958181665

LÍNEAS DE INVESTIGACIÓN

- Neuroinmunología de enfermedades del sistema inmunitario.
- Inducción de tolerancia inmunológica.
- Uso terapéutico de células madre adultas en enfermedades inmunológicas.
- Fisiopatología y terapia de enfermedades fibróticas crónicas.
- Regulación de inmunosenescencia y enfermedades infecciosas de origen bacteriano.

PUBLICACIONES RECIENTES (15 destacadas, Autor Senior*)

- Benitez R, Caro M, Andres-Leon E, O'Valle F, **Delgado M***. Cortistatin regulates fibrosis and myofibroblast activation in experimental hepatotoxic- and cholestatic-induced liver injury. **Br J Pharmacol** 179:2275-2296, 2022.
- Barriga M, Benitez R, Ferraz-de-Paula V, Garcia-Frutos M, Robledo G, O'Valle F, Campos-Salinas J, **Delgado M***. Protective role of cortistatin in pulmonary inflammation and fibrosis. **Br J Pharmacol** 178:4368-4388, 2021.
- Rol A, Todorovski T, Martin-Malpartida P, Escolà A, González-Rey E, Aragon E, Verdaguer X, Vallès-Miret M, Farrera-Sinfreu J, Puig E, Fernández-Carneado J, Ponsati B, **Delgado M***, Riera A*, Macias M*. Structure-based design of a Cortistatin analog with improved immunoregulatory activity against inflammatory bowel disease. **Nat Commun** 12:1869, 2021.
- Neubrand VE, Forte-Lago I, Caro M, **Delgado M***. The atypical RhoGTPase RhoE/Rnd3 is a key molecule to acquire a neuroprotective phenotype in microglia. **J. Neuroinflammation** 15:343, 2018.
- Delgado-Maroto V, Falo C, Adan N, Forte-Lago I, Morell M, Maganto-Garcia E, Robledo G, O'Valle F, Lichtman A, Gonzalez-Rey E, **Delgado M***. The neuropeptide cortistatin attenuates experimental autoimmune myocarditis via inhibition of cardiomyogenic T cell-driven inflammatory responses. **Br J Pharmacol** 174:267-280, 2017.
- Parolini O, Souza-Moreira L, O'Valle F, Magatti M, Hernandez-Cortes P, Gonzalez-Rey E, **Delgado M***. Therapeutic effect of human amniotic membrane-derived cells in experimental arthritis and other inflammatory disorders. **Arthritis Rheum** 66:327-339, 2014.

- Duran-Prado M, Morell M, Delgado-Maroto V, Castaño JP, Aneiros-Fernandez J, de Lecea L, Culler MD, Hernandez-Cortes P, O'Valle F, **Delgado M***. Cortistatin inhibits migration and proliferation of human vascular smooth muscle cells and decreases neointimal formation on carotid artery ligation. **Circ Res**. 112:1444-1455. 2013.
- Morell M, Souza-Moreira L, Caro M, O'Valle F, Forte-Lago I, de Lecea L, Gonzalez-Rey E, **Delgado M***. Analgesic effect of the neuropeptide cortistatin in murine models of arthritic inflammatory pain. **Arthritis Rheum** 65:1390-1401, 2013.
- Anderson P, Souza-Moreira L, Morell M, Caro M, O'Valle F, Gonzalez-Rey E, **Delgado M***. Adipose-derived mesenchymal stromal cells induce immunomodulatory macrophages which protect from experimental colitis and sepsis. **Gut** 62:1131-1141, 2013.
- Gonzalez-Rey E, Gonzalez MA, Varela N, O'Valle F, Hernandez-Cortes P, Rico L, Buscher D, **Delgado M***. Human adipose-derived mesenchymal stem cells reduce inflammatory and T cell responses and induce regulatory T cells in vitro in rheumatoid arthritis. **Ann Rheum Dis** 69:241-248, 2010.
- Prasse A, Zissel G, Lützen N, Schupp J, Schmiedlin R, Gonzalez-Rey E, Rensing-Ehl A, Bacher G, Cavalli V, Bevec D, **Delgado M***, Müller-Quernheim J.* Inhalation of Vasoactive Intestinal Peptide exerts immunoregulatory effects in sarcoidosis. **Am J Resp Crit Care Med** 182:540-548, 2010.
- Gonzalez-Rey E, Anderson P, Gonzalez MA, Rico L, Buscher D, **Delgado M***. Human adult stem cells derived from adipose tissue protect against experimental colitis and sepsis. **Gut** 58:929-939, 2009.
- Gonzalez MA, Gonzalez-Rey E, Rico L, Buscher D, **Delgado M***. Treatment of experimental arthritis with adipose-derived mesenchymal stem cells by inducing immune tolerance. **Arthritis Rheum** 60:1006-1019, 2009.
- Gonzalez MA, Gonzalez-Rey E, Rico L, Buscher D, **Delgado M***. Adipose-derived mesenchymal stem cells alleviate experimental colitis by inhibiting inflammatory and autoimmune responses. **Gastroenterology** 136:978-989, 2009.

PROYECTOS INVESTIGACIÓN (Investigador Principal, últimos 10 años).

- P09-CTS-4723. Title: Immunoregulatory activity of adipose-derived stem cells: therapeutic effect in inflammatory and autoimmune disorders. Funding Agency: Groups of Excellence, Junta de Andalucía. From: 2010 to: 2013. PI: Mario Delgado. Amount: 234.000 €
- SAF2012-39833. Title: Therapeutic application of cortistatin in type 1 diabetes and associated neuropathy and retinopathy. Funding Agency: Ministerio de Economía y Competitividad. From: 2013 to: 2015. PI: Mario Delgado. Amount: 210.000 €
- P12-CTS-2939. Title: Characterization of the effect of cortistatin in neuropathic and inflammatory pain. Funding Agency: Groups of Excellence. Junta de Andalucía. From: 2014 to: 2017. PI: Mario Delgado. Amount: 182.000 €

- RTC-2016-4955-1. Title: Epigenetic regulation of the inflammatory response. Funding Agency: Ministerio Econ. y Competitiv-Retos-Colab. From: 2016 to: 2018. PI: Mario Delgado (coord. by Oryzon Genomics). Amount: 120.000 € for IPBLN (total: 1.180.000 €).
- SAF2015-67787-R. Title: Analysis of the role of cortistatin in fibrosis: potential therapeutic application in tissue damaged associated chronic diseases. Funding Agency: Min. Econ y Competitiv. From: 2016 to: 2018. PI: Mario Delgado Amount: 230.000 €.
- RTI2018-100700-B-I00. Title: Immunomodulatory role of Cortistatin: effect in thymic function and immunosenescence. Funding Agency: Min. Ciencia, Innov. Univers. From: 2019 to: 2021. PI: Mario Delgado. Amount: 145.000 €.
- P20-01255. Title: New therapeutic strategy for treating inflammatory and autoimmune diseases: mesenchymal stem cells version 2.0 (ASC v2.0). Funding Agency: Junta de Andalucía. Consej. Conoc, Invest. y Univers. From: 2021 to: 2022. PI: Mario Delgado. Amount: 140.000 €.
- PID2021-127755OB-I00: Title: Role of cortistatin in bacterial pneumonia. Funding Agency: Min. Ciencia, Innov. Univers. From: 2022 to: 2024. PI: Mario Delgado. Amount: 260.000 €.

CONTRATOS DE INVESTIGACION CON EMPRESAS

- Title: Program of development and evaluation of inhibitors of a new therapeutic target in models of multiple sclerosis and allogeneic transplants of bone marrow and skin. Funding Company: Palau Pharma (Grupo Uriach), 2009-2011. PI: M Delgado. Amount: 370.000 €.
- Title: Identification of peptides with potential application in inflammation, autoimmunity and inflammatory pain. Funding Company: BCN Peptides. 2010-2014. PI: Mario Delgado. Amount: 170.000 €
- Title: siRNA Screen of Microglia to Identify Neuroprotective Drug Targets in Parkinson's Disease. Funding Company: Michael J. Fox Foundation for Parkinson. 2014-2015. PI: Mario Delgado. Amount: 60.000 €.

DIRECCION DE TESIS DOCTORALES Y TFMs (últimos 5 años).

TESIS DOCTORALES defendidas:

- Effect of adrenomedullin and cortistatin in neurodegenerative diseases: multiple sclerosis and Parkinson's disease. By Marta Pedreño Molina. Octubre 2015. Sobresaliente cum laude, European Thesis. Number of publications in thesis: 4. Current position: Postdoctoral in Hospital Clinic, Barcelona.
- Papel de cortistatina en fibrosis crónica: potencial aplicación terapéutica en esclerodermia y fibrosis pulmonar idiopática. By Margarita Barriga García-Mouriño.

Octubre 2021. Sobresaliente cum laude. Number of publications in thesis: 2. Current position: University of Granada.

- Análisis del papel del neuropeptide Cortistatina en fibrosis hepática. By Raquel Benítez Ruiz. Enero 2022. Sobresaliente Cum Laude, International Thesis. Number of publications in thesis: 5. Current Position: Postdoctoral in Toronto University, Canada.

TESIS DOCTORALES en curso:

- Marina García Frutos. Papel inmunomodulador de cortistatina: efecto en función tímica e inmunosenescencia. Iniciada en Junio 2020.
- Ana Blázquez Carballo. Nueva estrategia terapéutica para enfermedades autoinmunes e inflamatorias: Células Madre Mesenquimales v2.0. Iniciada en Octubre 2021.

TFMs defendidos:

Margarita Barriga García-Mouriño (2016-2017)
Pablo Jiménez López (2017-2018)
José Antonio Céspedes (2018-2019)
Noelia Ortiz Campoy (2019-2020)
Ana Blázquez Carballo (2020-2021)