



3.4.1 Internal Medicine and Systemic Diseases Group

Publications: **24**

Q1: **8**

COMPOSITION

Francisco Arnalich Fernández. Investigador "Ad Honorem". FIBHULP. Catedrático. Facultad de Medicina UAM. IdiPAZ. Universidad Autónoma de Madrid

José Luis Cedillo Mireles. Investigador Predoctoral (contrato FPU). Universidad Autónoma de Madrid

María del Carmen Fernández Capitán. Jefa de Servicio de Medicina Interna. Hospital Universitario La Paz. Profesora asociada ciencias de la Salud. Facultad Medicina UAM.

Carmen Montiel López. Catedrática de Farmacología y Terapéutica. Facultad de Medicina. Universidad Autónoma de Madrid

María Angustias Quesada Simón. Facultativo Especialista de Área en Medicina Interna. Hospital Universitario La Paz. Profesora asociada ciencias de la Salud. Facultad Medicina UAM. Universidad Autónoma de Madrid

Juan José Ríos Blanco. Director Médico Hospital universitario La Paz. Profesor asociado ciencias de la Salud. Facultad Medicina UAM. director Médico. Hospital Universitario La Paz



STRATEGIC OBJECTIVE

In the setting of the systemic response frequently found in patients attended in Internal Medicine wards, our group has studied some regulatory mechanisms of the innate immune response in patients with sepsis and other inflammatory states such as acute coronary syndromes (ACS), cystic fibrosis and cancer.

The first line of our research is the link between the parasympathetic and innate immune systems, that is the molecular mechanisms by which acetylcholine can influence the immune system via the "cholinergic anti-inflammatory pathway".

This pathway is mediated by the vagus nerve which releases acetylcholine to interact with the $\alpha 7$ subunit of the nicotinic acetylcholine receptor ($\alpha 7nAChR$).

We firstly reported that the neuronal $\alpha 7$ nicotinic receptor subunit gene (CHRNA7) is partially duplicated in the human genome forming a hybrid gene (CHRFAM7A) with the novel FAM7A gene, and provided experimental data showing that $\text{dup}\alpha 7$ could modulate $\alpha 7$ receptor-mediated synaptic transmission and cholinergic anti-inflammatory response (J Biol Chem 2011). The Toll-like receptor (TLR) plays an important role in the induction of the hyperinflammatory

response and tissue injury in sepsis. We found that the $\alpha 7$ gene expression level in septic patients' peripheral blood mononuclear cells (PBMC) is a clinically relevant marker to assess the magnitude of the patient's inflammatory state, disease severity, and clinical outcome (J Infect Dis 2015).

Another exciting line of our research is the involvement of the $\alpha 7$ -nicotinic receptor and its endogenous modulator $\text{dup}\alpha 7$ in human smoking-related tumors, and particularly their involvement in tobacco carcinogen-induced tumor development and chemotherapy resistance. This topic has attracted a grant from the Ministerio de Economía y Competitividad from 2014-2017. Besides, professor Jaime Renart who works in our team group, is doing new research on the molecular mechanisms of podoplanin, a type I transmembrane mucin widely known as a marker for lymphatic endothelial cells that has a critical role during development of the heart, lungs and lymphatic endothelial system. The expression of podoplanin is significantly enhanced during tissue remodeling processes and in several types of human cancer, including squamous cell carcinomas.



RESEARCH LINES

- Molecular mechanisms involved in the innate immune response.
- Link between the parasympathetic and innate immune systems.

Collaborative research line:

- Adaptive immune response in human immunodeficiency virus (HIV) infection.
- Multicentric group: RIETE group (Registro Español de Enfermedad Trombo-Embólica).
- Mechanisms and clinical features of systemic autoimmune diseases.

- Molecular mechanisms of podoplanin during tissue modelling processes and in several types of human cancer.

Lines of study framed in basic research projects:

- Study of the pathophysiological role of nicotinic $\alpha 7$ and $\alpha 7$ receptors expressed in human macrophages, neurons and lung carcinoma cells.
- Identification of signalling pathways connecting nicotinic $\alpha 7$ receptors and negative regulators of TLR-mediated inflammation in human macrophages.

RESEARCH ACTIVITY

● Doctoral theses

Extremera Mazuela M. Mecanismos moleculares de resistencia a cisplatino activados por consumo de tabaco en cáncer de pulmón. [dissertation]. Madrid: UAM: 2022(02/12/2022).

Directors: Montiel López C,
Arnalich Fernández F.

● Final Degree Theses

López Caballero L. Covid-19 en pacientes con enfermedades autoinmunes sistémicas y tratamiento inmunosupresor: características e influencia de la vacunación. Madrid: UAM: 2022.

Directors: Ríos Blanco JJ,
Álvarez Troncoso J

● Publications

• Alcántara MSN, Rivas LM, Espartero MEG, Rubio-Rivas M, García BA, Martínez FM, García CA, Martínez MLT, Fernández FA, Murgui RM, Castro SM, Muñoz MER, Fernández-Garcés M, Hernández MCC, García GMG, Piqueras NV, Abadía-Otero J, Villar LL, Monteiro CS, Pérez MDP, Pérez-Martín S, Collado-Aliaga J, Anton-Santos JM, Lumbreras-Bermejo C. Influence of smoking history on the evolution of hospitalized in COVID-19 positive patients: results from the SEMI-COVID-19 regis-

try. *Med Clin-Barcelona*. 2022; 159(5): 214-23. Article. IF: 3.9; Q2

- Álvarez H, Rava M, Martínez C, Portilla J, Peaire J, Rivero A, Cervero M, Marino A, Poveda E, Llibre JM. Predictors of low-level HIV viraemia and virological failure in the era of integrase inhibitors: A Spanish nationwide cohort. *Hiv Med*. 2022; 23(8): 825-36. Article. IF: 3; Q3
- Álvarez-Troncoso J, Ramos-Ruperto L, Fernández-Cidón P, Trigo-Esteban E, Tung-Chen Y, Busca-Arenzana C, Quintana-Díaz M, Buño-Soto A, Arnalich-Fernández F, Fernández-Capitán C. Screening protocol and prevalence of venous thromboembolic disease in hospitalized patients with COVID-19. *J Ultras Med*. 2022; 41(7): 1689-98. Article. IF: 2.3; Q2
- Amorós JG, García JAG, Escartí JAM, Iglesias AS, García MCM, Manzano L, Simón MAQ, Ramos MFD, Cerrada JC, Franco AG, Montero-Pérez-Barquero M. Influence of the degree of anaemia on the prognosis of older adults with heart failure (SPAN-HF study). *Med Clin-Barcelona*. 2022; 158(4): 167-72. Article. IF: 3.9; Q2
- Arandía NI, Espinosa G, del Castillo AG, Tolosa-Vilella C, Colunga-Argüelles D, de Heredia CGDP, Lledo GM, Comet LS, Ortego-Centeno N, Hito JAV, Rubio-Rivas M, Freire M, Ríos-Blanco JJ, Rodríguez-Carballeira M, Trapiella-Martínez L, Fonollosa-Pla V, Simeon-Aznar CP. Anti-polymyositis/ScI antibodies in systemic sclerosis clinical associations in a multicentric Spanish cohort and review of the literature. *JCR-J Clin Rheumatol*. 2022; 28(1): E180-8. Review. IF: 3.4; Q3
- Bikdeli B, Caraballo C, Trujillo-Santos J, Galanaud JP, di Micco P, Rosa V, Cusido GV, Schellong S,

Mellado M, Morales MD, Gavín-Sebastián O, Mazzoli L, Krumholz HM, Monreal M, (Fernández Capitán MC). Clinical presentation and short- and long-term outcomes in patients with isolated distal deep vein thrombosis vs proximal deep vein thrombosis in the RIETE Registry. *JAMA Cardiol*. 2022; 7(8): 857-865. Article. IF: 24; D1

- Di Micco P, Salazar VR, Capitán CF, Dentali F, Cuervo CG, Torres JLF, Porras JA, Fidalgo A, Grandone E, Meseguer ML, Monreal M. Rivaroxaban monotherapy in patients with pulmonary embolism: off-label vs. labeled therapy. *Life (Basel)*. 2022; 12(8): 1128. Article. IF: 3.2; Q2
- Fanciulli C, Berenguer J, Busca B, Vivancos MJ, Téllez MJ, Domínguez L, Domingo P, Navarro J, Santos J, Iribarren JA, Morano L, Artero A, Moreno J, Rivero-Román A, Santos I, Giner L, Arminnanaz C, Montero M, Manzardo C, Cifuentes C, García C, Galindo MJ, Ferrero OL, Sanz J, de la Fuente B, Rodríguez C, Gaspar G, Pérez L, Losa JE, Force L, Veloso S, Martínez-Alfaro E, Jarrin I, de Miguel M, García JG, (Arnalich Fernández F). Epidemiological trends of HIV/HCV coinfection in Spain, 2015-2019. *Hiv Med*. 2022; 23(7): 705-16. Article. IF: 3; Q3
- Formiga F, Rubio-Rivas M, Mora-Lujan JM, Escudero SC, Martínez RFM, Méndez-Bailón M, Durán-del Campo P, Pérez AR, García-Sánchez FJ, Alcalá-Pedrajas JN, Hernández SA, Milián AH, Díez AL, Sanchez RG, Boixeda R, Vicente J, Cortés B, Pérez CM, Espartero MEG, Castro JL, Suárez SR, Varona JF, Gomez-Huelgas R, Ramos-Rincón JM, (Arnalich Fernández F). Does admission acetylsalicylic acid uptake in hospitalized COVID-19 patients have a protective role? Data from the Spanish SEMI-CO-

VID-19 Registry. *Intern Emerg Med*. 2022; 17(3): 761-75. Article. IF: 4.6; Q2

- Giner-Galván V, Pomares-Gómez FJ, Quesada JA, Rubio-Rivas M, Tejada-Montes J, Baltasar-Corral J, Taboada-Martínez ML, Sanchez-Mesa B, Arnalich-Fernández F, del Corral-Beamonte E, López-Sampalo A, Pesqueira-Fontan PM, Fernández-Garcés M, Gómez-Huelgas R, Ramos-Rincón JM. C-Reactive protein and serum albumin ratio: a feasible prognostic marker in hospitalized patients with COVID-19. *Biomedicines*. 2022; 10(6): 1393. Article. IF: 4.7; Q1
- Guisado-Espartero ME, Salamanca-Bautista P, Aramburu-Bodas O, Manzano L, Simón MAQ, Ormaechea G, García SC, García MG, Rodrigo JMC, Montero-Pérez-Barquero M. Causes of death in hospitalized patients in internal medicine departments with heart failure according to ejection fraction. *RICA registry*. *Med Clin-Barcelona*. 2022; 158(1): 13-9. Article. IF: 3.9; Q2
- Jaureguizar A, Jiménez D, Bikdeli B, Ruiz-Artacho P, Muriel A, Tapson V, López-Reyes R, Valero B, Kenet G, Monreal M. Heart rate and mortality in patients with acute symptomatic pulmonary embolism. *Chest*. 2022; 161(2): 524-34. Article. IF: 9.6; Q1
- Lobo JL, Alonso S, Arenas J, Doménech P, Escríbano P, Fernández-Capitán C, Jara-Palomares L, Jiménez S, Lazaro M, Lecumberri R, Monreal M, Ruiz-Artacho P, Jiménez D. Multidisciplinary consensus for the management of pulmonary thromboembolism. *Arch Bronconeumol*. 2022; 58(3): 246-54. Article. IF: 8; Q1
- Loureiro-Amigo J, Suárez-Carantona C, Oriol I, Sánchez-Díaz C, Coloma-Conde A, Manzano-



1 Introduction

2 Executive Summary

3 Information Groups by Area

4 Associated Clinicians

Espinosa L, Rubio-Rivas M, Otero-Perpina B, Jenaro MMFM, Coduras-Erdozain A, García-Klepzig JL, Vargas-Parra D, Pesqueira-Fontán PM, Fiteni-Mera I, García-García GM, Jiménez-Torres J, Rodríguez-Cortés P, Costo-Muriel C, Arnalich-Fernández F, Artero A, Carrasco-Sánchez FJ, Escobar-Sevilla J, Alcalá-Pedrajas JN, Gómez-Huelgas R, Ramos-Rincón JM. Prone position in COVID-19 patients with severe acute respiratory distress syndrome receiving conventional oxygen therapy: a retrospective study. *Arch Bronconeumol.* 2022; 58(3): 277-80. Letter. IF: 8; Q1

- Martínez-Alés G, Domingo-Relloso A, Quintana-Díaz M, Fernández-Capitán C, Hernan MA. Thromboprophylaxis with standard-dose vs. flexible-dose heparin for hospitalized COVID-19 patients: a target trial emulation. *J Clin Epidemiol.* 2022; 151: 96-103. Article. IF: 7.2; D1
- Martínez-Urbistondo D, de la Garza RG, Villares-Fernández P, Font C, Schellong S, López-Núñez JJ, Gil-Díaz A, Díaz-Pedroche MD, Hirmerova J, Monreal M. Liver status and outcomes in patients

without previous known liver disease receiving anticoagulant therapy for venous thromboembolism. *Intern Emerg Med.* 2022; 17(3): 725-34. Article. IF: 4.6; Q2

- Mehdiipoor G, Jiménez D, Bertolotti L, del Toro J, Fernández-Capitán C, Bura-Riviere A, Amado C, Valero B, Blanco-Molina A, Otero R, Imbalzano E, Khorasani R, Prince MR, Bikdeli B, Monreal M. Imaging modalities for confirming pulmonary embolism during pregnancy: results from a multicenter international study. *Eur Radiol.* 2022; 32(2): 1238-46. Article. IF: 5.9; Q1
- Olleros CL, García CA, Estrada ADB, Muñoz A, Jogersen PEW, Cruz AF, Galván VG, Vargas JA, Ripoll JMS, Rubio-Rivas M, Godoy RM, Rodrigo LM, Aizpuru EF, Fernández FA, Artero A, Amigo JL, García GMG, Gudino LC, Torres JJ, Casas-Rojo JM, Núñez-Cortés JM. Use of glucocorticoids megadoses in SARS-CoV-2 infection in a spanish registry: SEMI-COVID-19. *Plos One.* 2022; 17(1): e0261711. Article. IF: 3.7; Q2
- Ramos-Rincón JM, Cobos-Palacios L, López-

Sampalo A, Ricci M, Rubio-Rivas M, Martos-Pérez F, Lalueza-Blanco A, Moragón-Ledesma S, Fonseca-Aizpuru EM, García-García GM, Beatopérez JL, Josa-Laorden C, Arnalich-Fernández F, Molinos-Castro S, Torres-Pena JD, Artero A, Vargas-Núñez JA, Méndez-Bailón M, Loureiro-Amigo J, Hernández-Garrido MS, Peris-García J, López-Reboiro ML, Barón-Franco B, Casas-Rojo JM, Gómez-Huelgas R. Ethnicity and clinical outcomes in patients hospitalized for covid-19 in spain: results from the multicenter SEMI-COVID-19 Registry. *J Clin Med.* 2022; 11(7): 1949. Article. IF: 3.9; Q2

- Rubio-Rivas M, Mora-Lujan JM, Formiga F, Arévalo-Canas C, Ramos JML, García MVV, Aizpuru EMF, Díez-Manglano J, Fernández FA, Cabrera JLR, García GMG, Fontán PMP, Núñez JAV, Castro SJF, Amigo JL, Pérez MDP, Pedrajas JNA, Encinas-Sánchez D, Pérez CM, Ena J, Gutiérrez AG, Giner MJE, Varona JF, Núñez-Cortés JM, Casas-Rojo JM. Who ordinal scale and inflammation risk categories in COVID-19. Comparative study of the severity scales. *J Gen Intern Med.* 2022; 37(8): 1980-7. Article. IF: 5.7; Q1
- Ruiz-Alguero M, Alejos B, Yubero CG, Jaume MR, Iribarren JA, Asensi V, Pasquau F, Galera CE, Pascual-Carrasco M, Muñoz A, Jarrín I, Suárez-García I, (Arnalich Fernández F). Use of generic antiretroviral drugs and single-tablet regimen simplification for the treatment of hiv infection in spain. *AIDS Res Hum Retrov.* 2022; 38(6): 433-40. Article. IF: 1.5; Q4
- Tello BG, Ibáñez ER, Mateo PF, Comet LS, Robles EM, Blanco JJR, Alfonso BM, Garriga GE, Todoliparra J, Ortego-Centeno N, Rubio JLC, Dapena MF, Ballve AM, Selva-O'Callaghan A, del Castillo AG, Simeón-Aznar CP, Pla VF. The challenge of comprehensive nailfold videocapillaroscopy practice: a further contribution. *Clin Exp Rheumatol.* 2022; 40(10): 1926-32. Article. IF: 3.7; Q3
- Trujillo-Santos J, Farge-Bancel D, Pedrajas JM, Gómez-Cuervo C, Ballaz A, Braester A, Mahe I, Villalobos A, Porras JA, Monreal M, (Fernández Capitán MC). Enoxaparin versus dalteparin or tinzaparin in patients with cancer and venous thromboembolism: The RIETECAT study. *Res Pract Thromb Haemost.* 2022; 6(4): e12736. Article. IF: 4.6; Q2
- Trullas JC, Aguilo O, Miro O, Díez-Manglano

J, Carrera-Izquierdo M, Quesada-Simón MA, Álvarez-Rocha P, Llorens P, Gonzalez-Franco A, Montero-Pérez-Barquero M. Prevalence and impact on prognosis of right-bundle branch block in patients with acute heart failure: Findings from the RICA registry. *Rev Clin Esp.* 2022; 225(5): 272-80. Article. IF: 2.9; Q2

● Research projects

Ríos Blanco JJ. Estudio de hipertensión pulmonar en la cohorte de pacientes con infección VIH del Hospital La Paz. Glaxosmithkline S.A. 2010-Ongoing.

Management centre: FIBHULP

● **Arnalich Fernández F.** Estudio de disfunción ventricular precoz en pacientes con esclerodermia. Glaxosmithkline S.A. 2011-Ongoing.

Management centre: FIBHULP

Arnalich Fernández F, Montiel López C. Resistencia a quimioterapia y a terapia dirigida a EGFR inducida por consumo de tabaco a través de receptores nicotínicos en cáncer de pulmón no microcítico: estudio in vitro, in vivo y en pacientes (SAF2017-82689-R). Ministerio de Economía y Competitividad. 2018-2022.

Management centre: Fundacion UAM

● Clinical trials

Quesada Simón MA. Valoración del manejo y adecuación del tratamiento antitrombótico de los pacientes con fibrilación auricular no valvular que ingresan en los servicios de medicina interna de España.

Type: EPA-OD. PI-5022.

Sponsored by: Daiichi Sankyo España.

Signed date: 24/03/2022

