Dr. Agustín Tortajada Alonso

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Dpto.Microbiology I - Immunology
Medical School. Complutense University
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Research Experience

Research and Teaching staff
since Feb 2017

Juan de la Cierva fellowship from the Spanish Ministry of Economy,Industry and Competitivity.
Medical School. Complutense University. Madrid.

PhD researcher
Jan 2012 – Sep 2016

funded under the project: European Consortium for High-Throughput Research in Rare Kidney Diseases. EURenOmics. 2012-2017.Centro de Investigaciones Biológicas (CSIC), Madrid.

Graduate researcher
Sep 2011 – Dec 2012

Centro de Investigaciones Biológicas (CSIC), Madrid.
Complement Genetics and Molecular Pathology group; Prof. Santiago Rodríguez de Córdoba.

PhD student
Jul 2007 – Jun 2011

Predoctoral fellowship from the Spanish Ministry of Economy and Competitivity.
Centro de Investigaciones Biológicas (CSIC), Madrid.
Complement Genetics and Molecular Pathology group; Prof. Santiago Rodríguez de Córdoba.

Education

PhD Biology. Genetic and Molecular Biology program — Jun 2012
Complutense University of Madrid. Autonomus University of Madrid
Thesis: "Structural and Functional Analyses of Complement Proteins Associated with Pathology". Extraordinary **Prize** for Best PhD Thesis in Biological Science (UCM, 2012).

Bachelor Biology (speciality in Biotechnology) — Jun 2006
Complutense University of Madrid.

Teaching Activity

Course: Diagnosis, Therapy and Research in Complement System mediated Diseases. Nov 2014. 1,5 credits accredited by the National group of Continuous Education for Health Professionals (NHS).

Continuous training programme in Immunology at "La Paz" University Hospital (Madrid). Jun 2012. 4.9 credits accredited by the National group of Continuous Education for Health Professionals (NHS)

PUBLICATIONS

- Subías Hidalgo M, Yébenes H, Rodríguez-Gallego C, Martín-Ambrosio A, Domínguez M, **Tortajada A**, Rodríguez de Córdoba S, Llorca O. Functional and structural characterization of four mouse monoclonal antibodies to complement C3 with potential therapeutic and diagnostic applications. **Eur J Immunol.** 2017 Mar.
- Xiao X, Ghossein C, **Tortajada A**, Zhang Y, Meyer N, Jones M, Borsa NG, Nester CM, Thomas CP, de Córdoba SR, Smith RJ. Familial C3 glomerulonephritis caused by a novel CFHR5-CFHR2 fusion gene. **Mol Immunol**. 2016 Sep.
- Recalde S, **Tortajada A**, Subías M, Anter J, Blasco M, Mranta R, Coco R, Pinto S, Noris M, García-Layana A, de Córdoba SR. Molecular Basis of Factor H R1210C Association with Ocular and Renal Diseases. **JASN** 2016 May.
- Corvillo F, García-Morato MB, Nozal P, Garrido S, Tortajada A, de Córdoba SR, López Trascasa M. Serum properdin consumption as a biomarker of C5 convertase dysregulation in C3 glomerulopathy. **Clin Exp Immunol**. 2016 Abr.
- Martínez-Barricarte R, Meike Heurich, López-Perrote A, **Tortajada A**, Pinto S, López-Trascasa M, Sánchez-Corral P, B. Paul Morgan, Llorca O, Claire L. Harris, Rodríguez de Córdoba S. The molecular and structural bases for the association of complement C3 mutations with atypical hemolytic uremic syndrome. **Mol Immunol**. 2015 Aug.
- Józsi M, **Tortajada A**, Uzonyi B, de Jorge EG and de Córdoba SR. Factor H-related proteins determine complement-activating surfaces. **Trends in Immunology**. 2015 Jun.
- Subías M, **Tortajada A**, Gastoldi S, Galbusera M, López-Perrote A, Lopez J, González-Fernández FA, Villegas-Martínez A, Dominguez M, Llorca O, Noris M, Morgan BP, Rodríguez de Córdoba S. A novel antibody against human factor B that blocks formation of the C3bB proconvertase and inhibits complement activation in disease models. **J Immunol**. 2014 Dec.
- Valoti E, Alberti M, **Tortajada A**, Gastoldi S, Besso L, Bresin E, Remuzzi G, Rodríguez de Córdoba S, and Noris M. A Novel Atypical Hemolytic Uremic Syndrome–Associated Hybrid CFHR1/CFH Gene Encoding a Fusion Protein That Antagonizes Factor H–Dependent Complement Regulation. **J Am Soc Nephrol**. 2015 May.
- Rodríguez de Córdoba S, Hidalgo MS, Pinto S, **Tortajada A**. Genetics of atypical hemolytic uremic syndrome (aHUS). **Semin Thromb Hemost**. 2014 Jun.
- Alcorlo M, **Tortajada A**, Rodríguez de Córdoba S, Oscar Llorca. Structural basis for the stabilization of the complement alternative pathway C3 convertase by properdin. **Proc Natl Acad Sci USA**. 2013 Aug.
- **Tortajada, A.**, Yébenes H., Abarrategui-Garrido C., Anter J., García-Fernández JM., Martínez Barricarte R., Alba-Domínguez M., Talak HM., Bedoya R., Cabrera-Pérez R., López-Trascasa M., Pickering MC., Harris CL., Sánchez-Corral P., Llorca O., Rodríguez de Córdoba S. C3 glomerulopathy-associated CFHR1 mutation alters FHR oligomerization and complement regulation. **J Clin Invest**. 2013 May.
- Santiago Rodríguez de Córdoba, **Agustín Tortajada**, Claire L. Harris and B. Paul Morgan. Complement dysregulation and disease: From genes and proteins to diagnostic and drugs. **Immunobiology**. 2012 Nov. Review.
- Kopp A, Strobel S, **Tortajada A**, Rodríguez de Córdoba S, Sánchez-Corral P, Prohászka Z, López-Trascasa M, Józsi M. Atypical hemolytic uremic syndrome-associated variants and autoantibodies impair binding of factor H and factor H-related protein 1 to Pentraxin 3. **J Immunol**. 2012 Aug.
- **Tortajada A**, Pinto S, Martínez-Ara J, López-Trascasa M, Sánchez-Corral P, de Córdoba SR. Complement factor H variants I890 and L1007 while commonly associated with atypical hemolytic uremic syndrome are polymorphisms with no functional significance. **Kidney Int**. 2012 Jan.
- Martínez-Barricarte R, Heurich M, Valdes-Cañedo F, Torreira E, Montes T, **Tortajada A**, Pinto S, Lopez-Trascasa M, Morgan BP, Llorca O, Harris CL, Rodríguez de Córdoba S. Human C3 mutation reveals a mechanism of dense deposit disease pathogenesis and provides insights into complement activation and regulation. **J Clin Invest**. 2010 Oct.
- Hakobyan S, **Tortajada A**, Harris CL, de Córdoba SR, Morgan BP. Variant-specific quantification of factor H in plasma identifies null alleles associated with atypical hemolytic uremic syndrome. **Kidney Int**. 2010 Oct.

- Torreira E, **Tortajada A**, Montes T, Rodríguez de Córdoba S, Llorca O. Coexistence of closed and open conformations of complement factor B in the alternative pathway C3bB(Mg2+) proconvertase. **J Immunol**. 2009 Dec.
- **Tortajada A**, Montes T, Martínez-Barricarte R, Morgan BP, Harris CL, de Córdoba SR. The disease-protective complement factor H allotypic variant Ile62 shows increased binding affinity for C3b and enhanced cofactor activity. **Hum Mol Genet**. 2009 Sep.
- Montes T, **Tortajada A**, Morgan BP, Rodríguez de Córdoba S, Harris CL. Functional basis of protection against age-related macular degeneration conferred by a common polymorphism in complement factor B. **PNAS USA**. 2009 Mar.
- Torreira E, **Tortajada A**, Montes T*, Rodríguez de Córdoba S, Llorca O. 3D structure of the C3bB complex provides insights into the activation and regulation of the complement alternative pathway convertase. **PNAS USA**. 2009 Jan.
- Hakobyan S, Harris CL, **Tortajada A**, Goicochea de Jorge E, García-Layana A, Fernández-Robredo P, Rodríguez de Córdoba S, Morgan BP. Measurement of factor H variants in plasma using variant-specific monoclonal antibodies: application to assessing risk of age-related macular degeneration. **Invest Ophthalmol Vis Sci**. 2008 May.

ORAL COMMUNICATIONS

- VII Reunión Anual del Centro de Investigaciones Biomédicas en Red de Enfermedades Raras (CIBERER). San Lorenzo del Escorial, Mar 2015. "Implicación de las proteínas FHR en el Síndrome Hemolítico Urémico atípico y la Glomerulopatía de C3"
- Workshop: Complement and Renal Disease. Madrid, Nov 2013. "Role of FHRs in C3 glomerulopathy and aHUS"
- Ciclo Seminarios Departamento de Medicina Celular y Molecular Centro de Investigaciones Biológicas. (CSIC). Madrid, Sep 2013. "C3 glomeerulopathy-associated CFHR1 mutation alters FHR oligomerization and complement regulation"
- 12th European Meeting of Complement in Human Disease. Visegrád (Hungary), Sep 2009. "Complement factor H Ile62 polymorphism increases binding affinity for C3b and enhances cofactor activity". **Awarded Prize for excellent ORAL presentation.**
- 11th European Meeting of Complement in Human Disease. Cardiff (Gales), Sep 2007. "Factor H allele.specific quantification in Tyr402His heterozygotes reveals the existence of low expression alleles associated with atypical haemolytic uraemic syndrome".
- I Reunión Anual del Centro de Investigaciones Biomédicas en Red de Enfermedades Raras (CIBERER). Barcelona, Nov 2007. "Identificación de alelos de baja expresión en el gen de factor H y su asociación con SHUa".

PATENTS AND UTILITY MODELS

Antibody against Factor B, pharmatical composition useful to treatment of complement diseases and its applications. Patent number: P201330452, granted on March 27th 2013.

Inventors: Santiago Rodríguez de Córdoba and Mercedes Domínguez.

Contributors: Oscar Llorca, Marta Subías, Martín Alcorto, **Agustín Tortajada**, Angela Ruiz, Lucía Juana and Sheila Pinto.