



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2015

Turno de acceso general

Nombre: GUTIÉRREZ TORAL, PABLO

Referencia: RYC-2015-17230

Área Científica: Ganadería y Pesca

Correo Electrónico: pablo.toral@csic.es

Título:

Nutrición de rumiantes. Regulación del metabolismo lipídico en la glándula mamaria y el rumen en animales en lactación

Resumen de la Memoria:

La investigación realizada a lo largo de mi trayectoria se enmarca en el campo de la nutrición de rumiantes; esencialmente en el estudio de la regulación nutricional de la lipogénesis mamaria y el metabolismo ruminal, y en la nutrigenómica. La especialización en esta última disciplina constituye quizás mi principal fortaleza por lo que supone de innovación en el ganado lechero.

Uno de los aspectos que destacaría es la colaboración con excelentes especialistas del área. En primer lugar, señalaría la sólida formación recibida de los Drs. Frutos y Hervás durante mi doctorado en el Instituto de Ganadería de Montaña (IGM, CSIC-ULE, León), que incluyó aspectos ligados a la carrera científica en general y a la nutrición de rumiantes en particular. En esa etapa predoctoral me familiaricé con técnicas de cromatografía (e. g., GC-MS y HPLC) para el análisis pormenorizado de lípidos con el Dr. Shingfield (MTT, Finlandia). A continuación, el posdoctorado en el grupo del Dr. Chilliard (INRA, Francia) me aportaría nuevas perspectivas para el estudio del metabolismo lipídico a través de la nutrigenómica y del uso de isótopos estables. Su carácter marcadamente novedoso está generando una información de gran valía en nuestro campo que, ya de vuelta en España gracias a un Juan de la Cierva, me ha permitido aportar un enfoque diferente a la línea principal del equipo al que me he incorporado.

Los contactos establecidos durante mi etapa posdoctoral resultaron muy ventajosos para facilitar después la captación de recursos mediante contratos con instituciones y empresas francesas activas en estas áreas. Los años en Francia también me permitieron liderar el establecimiento de la colaboración entre los equipos del INRA y del IGM; esta comenzó con un estudio de nutrigenómica en ovejas lecheras, del que fui responsable, y continúa desarrollándose con éxito en la actualidad.

La idiosincrasia del trabajo realizado en la regulación nutricional del metabolismo lipídico en rumiantes en lactación ha dado lugar a publicaciones caracterizadas por un alto nivel técnico (e. g., por perfiles lipídicos muy detallados) e innovador, lo que ha permitido que se recogieran en las revistas de más alta calidad de su categoría. Otra característica determinante de esta línea de investigación es la internacionalización. Así se demuestra, por ejemplo, en las numerosas coautorías internacionales de mis artículos (tanto de los publicados con el equipo del IGM como de forma independiente). Por otro lado, dentro de esta línea he tenido la oportunidad de formar personal investigador, algo que considero obligado y de gran relevancia en la carrera científica.

Para finalizar, me gustaría señalar que durante este tiempo he participado también en proyectos dirigidos al estudio de la microbiota digestiva, de la interacción entre la nutrición y la sanidad animal, o de las estrategias para reducir el impacto ambiental de la producción de rumiantes. Aunque con menos peso en mi CV, estas experiencias han sido muy enriquecedoras, ya que, sumadas a la formación adquirida en mi línea principal, han contribuido a ampliar mi visión de conjunto para poder abarcar desde el ganadero, primer actor en el área de ganadería, hasta el animal, la escala molecular o el consumidor al que van destinados los productos finales.

Resumen del Currículum Vitae:

Mi primer contacto con la investigación tuvo lugar durante los últimos años de mi formación universitaria, a través de dos Becas de Introducción a la Investigación del CSIC (en 2005 y 2006). Seguidamente, y gracias al expediente alcanzado en mis estudios de Veterinaria (recibí los Premios Extraordinarios de Licenciatura y Fin de Carrera, así como otro de la Fundación Santos Ovejero al mejor expediente), conseguí una beca del CSIC para realizar el doctorado en el Instituto de Ganadería de Montaña (IGM; enero 2007-junio 2010), bajo la dirección de los Drs. Frutos y Hervás. Mi tesis, enfocada al estudio del metabolismo lipídico en las ovejas lecheras, incluyó 5 artículos publicados en revistas de alto impacto, cuya elevada calidad contribuyó a la obtención del Premio Extraordinario de Doctorado. Así mismo, trabajos derivados de la tesis fueron premiados, por ejemplo, por la Real Academia de Ciencias Veterinarias.

Entre mis estancias predoctorales en otros centros de investigación, destacaría la realizada con el Dr. Shingfield (MTT Agrifood Research, Finlandia; 3,5 meses en 2008), en la que recibí formación sobre técnicas de cromatografía para el análisis pormenorizado del perfil lipídico. Además, conseguí otra ayuda para trabajar en microbiología digestiva con la Dra. Stanton (Teagasc, Irlanda; 3 meses en 2009), tema en el que tendría la oportunidad de volver a implicarme durante una estancia posdoctoral con el Dr. Yáñez en la Estación Experimental del Zaidín (EEZ, Granada; 5 meses en 2011).

Como resumen de los logros obtenidos a partir del trabajo de mi etapa predoctoral, destacaría la publicación de 14 artículos SCI, 6 de los cuales como primer autor y 3 como segundo, en su mayoría en revistas Q1. También fui primer autor de 8 comunicaciones a congresos y 4



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2015

Turno de acceso general

artículos de divulgación.

Además de la mencionada estancia en la EEZ, realicé la mayor parte de mi posdoctorado (3,5 años entre 2010 y 2013) en el centro INRA de Clermont-Ferrand (Francia), donde trabajé en el grupo del Dr. Chilliard. El aspecto central y más novedoso de esta etapa fue la aplicación de técnicas moleculares para el estudio de la regulación nutricional de la expresión génica. A continuación, y gracias a la obtención de un contrato Juan de la Cierva, en enero de 2014 me reincorporé al equipo de la Dra. Frutos (IGM), al cual he podido aportar la formación adquirida en nutrigenómica.

A lo largo de mi carrera he participado en numerosos proyectos y contratos de investigación, incluyendo 4 recientes en los que he sido o soy investigador principal (1 proyecto intramural del CSIC, 2 contratos internacionales y 1 nacional). Con respecto a mi participación en publicaciones científicas, soy coautor de 37 artículos SCI (30 en revistas Q1, firmando de ellos 16 como primer o último autor y 7 como segundo), 9 artículos no SCI pero evaluados por pares y 49 comunicaciones a congresos. Además, he colaborado en diversas actividades de divulgación científica y publicado 8 artículos en revistas técnicas. Por último, en relación con mi capacidad formativa, el aspecto más destacable sería la oportunidad de haber codirigido dos tesis, una doctoral y otra de un máster internacional.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2015

Turno de acceso general

Nombre: CHAUVIGNÉ , FRANCOIS
Referencia: RYC-2015-17103
Área Científica: Ganadería y Pesca
Correo Electrónico: f_chauvigne@yahoo.fr

Título:

Molecular regulation and endocrinology of fish spermatogenesis

Resumen de la Memoria:

During my research career, I made the following major contributions:

- (1) During my PhD thesis at INRA-SCRIBE (France), I established for the first time the developmental expression of muscle specific markers during embryogenesis and hyperplastic growth in rainbow trout;
- (2) During the first postdoctoral period at INSERM (France), I characterized the toxicological effects of phthalate esters on the endocrine function of rat fetuses identifying their mechanism of action;
- (3) During my second postdoctoral period at IRTA-ICM (CSIC) in Barcelona (Spain), I discovered a novel role of the gonadotropin luteinizing hormone in flatfish germ cells regulating spermiogenesis, as well as the function of an aquaporin-mediated detoxification mechanism in marine fish spermatozoa for the maintenance of flagellar motility;
- (4) During my current postdoctoral position at the University of Bergen (Norway), I characterized for the first time four aquaporin-0 genes in Atlantic salmon and elucidated the molecular basis of the regulation of their permeation properties by the pH, as well as studied the molecular evolution of aquaporins in arthropods and in particular in the salmon louse.

The major research line that I have developed over the last years is the study of the endocrinology and cell biology of fish spermatogenesis with the aim of developing therapies for the reproductive dysfunctions of cultured animals. My most significant contributions in this area were:

- (1) Production of recombinant gonadotropins of the Senegalese sole that are biologically active both in vivo and in vitro, and the development of specific ELISAs for Fsh and Lh to determine the physiological levels of these hormones;
- (2) Discovery of a novel role of the gonadotropin luteinizing hormone (Lh) in Senegalese sole germ cells regulating spermiogenesis. To investigate the gonadotropic control of spermatogenesis in sole, I cloned and characterized the follicle-stimulating hormone (Fsh) and Lh receptors in this species using the recombinant hormones. With these tools, I discovered a novel role of Lh in vertebrate germ cells, where a signaling cascade activated in spermatids by the Lh receptor directs gene expression and the progression of spermiogenesis. This discovery was published in the PNAS journal and opens new possibilities for the control of reproduction of cultured Senegalese sole;
- (3) Discovery of a novel aquaporin-mediated detoxification mechanism in marine fish spermatozoa for the maintenance of flagellar motility. I investigated the role of aquaporin water channels during spermatogenesis and uncovered a novel mechanism for mitochondrial hydrogen peroxide transport mediated by aquaporin-8b in seawater-activated gilthead seabream spermatozoa, which is essential to maintain flagellar motility under hypertonic conditions.

Resumen del Currículum Vitae:

My name is Dr. François Chauvigné (born 1978, Angers, France). I obtained a BSc in Biology in 2000 and my first master in Marine Ecosystems and Biology of the Populations in 2001 by the University of Occidental Brittany (Brest, France). In 2002, I obtained a second master in Animal Biology and Aquaculture Production at the University of Rennes I (Rennes, France), where I followed my research on trout embryonic muscle development and obtained the PhD in Biology in 2006. I was then interested in focusing my research into reproductive biology, and in particular spermatogenesis. Thus, in February 2006 I took a one-year postdoctoral position at INSERM (Rennes, France) to study the toxicological effects of phthalates on rat embryonic spermatogenesis. In 2007, I became a Marie Curie postdoctoral fellow (funded by the European commission) at the joint laboratory Institut de Recerca i Tecnologia Agroalimentàries (IRTA)-Institute of Marine Sciences (CSIC) in Barcelona (Spain), and later in 2010 I was awarded with a Juan de la Cierva postdoctoral fellowship from the Spanish Ministry of Education and Science in the same laboratory. During this period, my main interests were the molecular endocrinology and cell biology of spermatogenesis and sperm physiology in fishes, with a special interest on gonadotropins and aquaporin water channels. In 2013, I moved to my current position at the University of Bergen (Norway) for another postdoctoral contract to work on aquaporin physiology in Atlantic salmon.

I have 14 years of research experience on the molecular physiology of fish development, with an emphasis on reproductive biology. I have participated in 9 research projects in France, Spain, Norway and Europe, and developed a strong network of national and international collaborations (France, Norway, Israel, Italia, Denmark, United Kingdom and India). I published 41 SCI articles (68% in Q1 journals among which are notable Nature Communications, Molecular Biology of Evolution and PNAS, and 21 as first or corresponding author) with an average impact factor of 3.76 and an h-index of 15 (648 total citations; Web of Science). I have also published a book chapter and I am



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD



DIVISIÓN DE PROGRAMACIÓN
Y GESTIÓN ECONÓMICA Y
ADMINISTRATIVA

SUBDIVISIÓN DE
PLANIFICACIÓN Y GESTIÓN
ADMINISTRATIVA

AGENCIA
ESTATAL DE
INVESTIGACIÓN

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2015

Turno de acceso general

author of 35 presentations in international meetings, 5 of them as invited lectures. Recently, I have applied for my own project as PI to the Spanish Ministry of Economy and Competitiveness (Proyectos de I+D+I para jóvenes investigadores; Project SOLESPERM), and I am waiting for the resolution. During my career, I trained various BSc and 3 master students, and I am currently co-advising two PhD thesis (one to be defended in a few months). I have also taught in the Master of Aquaculture from the University of Barcelona, University Autónoma of Barcelona, and Polytechnic University of Catalonia, Spain, in 2015. Finally, I am a regular referee of different international scientific journals in the areas of fish physiology and aquaculture.

My goal during the Ramon y Cajal contract would be to expand my previous work on the molecular regulation and endocrinology of spermatogenesis in the flatfish Senegalese sole, a species of high commercial interest for the Spanish aquaculture industry.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2015

Turno de acceso general

Nombre: MARTÍNEZ VALLADARES, MARÍA
Referencia: RYC-2015-18368
Área Científica: Ganadería y Pesca
Correo Electrónico: mmarva@unileon.es

Título:

CONTROL DE LAS INFECCIONES POR HELMINTOS DIGESTIVOS EN RUMIANTES

Resumen de la Memoria:

My PhD project was carried out at the University of León and it was focused on the study of the interactions between host and parasites to determine the resistance to the infection by the gastrointestinal nematode *Teladorsagia circumcincta* in sheep (2007). Then, I worked in the company Laboratorios Ovejero SA, for 11 months, as postdoctoral researcher with the aim to determine the efficacy and safety of vaccines for animals.

As postdoctoral researcher I have been working at the Instituto de Ganadería de Montaña although I have also worked abroad for a total period of 13 months (Moredun Research Institute, University of Ghent, University of Dublin). My aim has been the control of helminth infections in ruminants, being focused on the following topics: i) prevalence of helminth infections; ii) evaluation of new molecules and drugs combinations with anthelmintic activity; iii) development of new methods to detect the anthelmintic resistance; iv) alternative methods to control helminth infections by regulating the immune response; v) study of traits for genetic selection of resistant animals.

I have been the co-supervisor of three PhD students whose projects were the following ones: i) new molecular methods for the diagnosis and control of *Dicrocoeliosis* in its intermediate hosts, molluscs and ants; ii) control of fasciolosis in sheep using alternative methods: administration of an immunomodulator and diets rich with polyunsaturated fatty acids and phenolic compounds; iii) new molecular tests and bio-assays for studying strains of *Fasciola hepatica* from sheep with different origin and degree of resistance to benzimidazoles.

Currently I am supervising two other PhD students whose objectives are the followings: i) detect genomic markers to increase the genetic resistance against gastrointestinal nematodes in sheep, looking for quantitative trait locus associated with indicator traits of parasite resistance; ii) study of genes/mutations related with the development of anthelmintic resistance in gastrointestinal nematodes as well as new molecules or natural extracts with anthelmintic activity with the aim to combat the anthelmintic resistance.

Since 2015 I am involved in a new research line focused on the early diagnosis of parasitic and vector-borne diseases in animals due to my huge experience on molecular tests. This new line is the mission of the biotechnology spin-off, SOLPAX, founded by me in October 2015. I have developed a quantitative molecular test to diagnose the infection by *Leishmania infantum* in oral samples from dogs and currently I am developing another one for the detection of canine ehrlichiosis.

Resumen del Currículum Vitae:

Aportaciones más relevantes: autor de 37 publicaciones SCI (1º firmante: 17, último: 10, 2º: 5); 11 de éstas con autores extranjeros; índice de impacto medio 2,2 (23 en el Q1); índice de impacto medio de las publicaciones que no están en Q1 es 1,8 (índice dentro del Q1 de mi área, Veterinary Science). Autor de 27 publicaciones de divulgación científica. He participado en 47 comunicaciones a congresos, 24 de ellas internacionales. He participado en 17 proyectos de investigación financiados en convocatorias competitivas (Investigador principal de 3) y en 11 contratos de investigación con empresas (Investigador principal de 1). En 2015 fundé la spin-off biotecnológica SOLPAX gracias a la concesión de dos becas, una de la Fundación Bases y otra de ADE2020; recientemente SOLPAX recibió el primer premio, categoría Proyecto Empresarial, del concurso "Iniciativa Campus Emprendedor" para investigadores de Universidades y centros del CSIC de Castilla y León. Recientemente hemos enviado la Solicitud de Patente Nacional (Nº 201630002), Procedimiento de detección de *Fasciola* spp., oligonucleótidos utilizados y kit, Universidad de León.

Participación a nivel internacional: participación en 2 proyectos de investigación europeos dentro del V y VII Programa Marco de la UE dotados con 1,3 mill y 3,4 mill, respectivamente; participación en 4 contratos de investigación con Fort Dodge Veterinaria y Pfizer a nivel de la UE (120.298); 13 meses de estancias post-doctorales en el extranjero; actualmente dirijo una Tesis Doctoral a una estudiante Croata dentro del programa Marie Curie Initial Training Network; evaluadora de varias publicaciones internacionales destacando las revistas *Veterinary Parasitology* (Q1), *Parasitology* (Q2), *Small Ruminant Research* (Q2) y *Experimental Parasitology* (Q3); evaluadora un proyecto de l'Agence Nationale de la Recherche (ANR, Francia); supervisora de una estudiante de Doctorado Argentina.

Otros méritos: actividades de divulgación científica: Feria Internacional Empírica 2010 y la Semana de la Ciencia del CSIC; he organizado y desarrollado el Curso sobre control de enfermedades parasitarias de los ovinos en España; he evaluado 2 proyectos del Plan Gallego de Investigación, Desarrollo e innovación Tecnológica y de un tercero del Programa de Apoyo al Crecimiento Empresarial mediante el fomento de la investigación y la innovación empresarial y un 4º francés; acreditación por la ANECA como Profesor Ayudante Doctor, Contratado Doctor y de Universidad Privada; Profesor Colaborador de la Universidad de León (2008-09); investigador postdoctoral en la empresa farmacéutica Laboratorios Ovejero S.A.

Capacidad para liderar una línea de investigación: he dirigido tres Tesis Doctorales, y actualmente estoy dirigiendo otras 2, así como los Proyecto Final de Master Universitario a 4 estudiantes; invitación personal al seminario Drug Resistance: Turning the tide on microbial



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD



DIVISIÓN DE PROGRAMACIÓN
Y GESTIÓN ECONÓMICA Y
ADMINISTRATIVA
SUBDIVISIÓN DE
PLANIFICACIÓN Y GESTIÓN
ADMINISTRATIVA

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2015

Turno de acceso general

and parasitic resistance to drugs in the livestock en Edimburgo, a dar una ponencia en el congreso internacional XVIII Congreso de la Sociedad Española de Parasitología y Encuentro internacional de Parasitólogos de España, Francia, Italia y Portugal, a ser miembro internacional de la Alianza Global de Investigación en Agricultura sobre Gases de Efecto Invernadero (GRA) y a ser Miembro de un Tribunal para la defensa de una Tesis Doctoral.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2015

Turno de acceso general

Nombre: HIDALGO ROLDAN, JOSE MANUEL
Referencia: RYC-2015-18646
Área Científica: Ganadería y Pesca
Correo Electrónico: jm.hidalgo@ba.ieo.es

Título:

Impact of fishing activity and climatic variability on the ecological mechanisms regulating the exploited populations, communities and ecosystems

Resumen de la Memoria:

Dr. Manuel Hidalgo is an experienced fisheries scientist with a multidisciplinary research profile embracing fisheries modeling with fisheries ecology and fisheries oceanography. During his PhD period funded by a competitive FPI fellow (IMEDEA CSIC-UIB, 2004-2007), Dr. Hidalgo investigated the environmental influence on the recruitment processes of marine fishes and its implications for fisheries dynamics. After that, he specifically designed his postdoctoral project (a FP7 IEF Marie Curie, 2009-2011) at the Centre of Ecological and Evolutionary Synthesis (University of Oslo) to fulfill both scientific and trying objectives. During this period, he combined studies investigating the influence of oceanographic processes on the spatial distribution of larvae and adults of exploited species, with a focused research on the ecological and management implications of juvenescence processes (i.e. demographic erosion induced by fishing). Since 2012, Manuel works at the Balearic Oceanographic Centre (Spanish Institute of Oceanography, IEO) where he coordinates the scientific activities of three projects. The first, an FP7 European-funded project, deals with developing new tools to implement ecological scientific knowledge into fisheries management. The second, funded by the Spanish National Program, investigates how the synergies between fishing and climate impact harvested systems all over the whole Spanish coast, including Mediterranean and Atlantic. And the third, a recent funded project by the Balearic Islands Government to investigate the management implications of the connectivity processes (i.e. incoming of early life stages of marine organisms from adjacent areas) where Manuel is PI.

The overall research line of Dr. Hidalgo can be summarized as the **Impact of fishing activity and hydroclimatic variability on the ecological mechanisms regulating the exploited populations, communities and ecosystems**. At the basis of this main line, lay two specific topics. First, Manuel investigates **Combined effects of fishing and climate on the life history and population dynamics of exploited marine species and the structure of bottom communities**. This specific line is focused on applied fisheries ecology in which Dr. Hidalgo is currently investigating the complexity of anthropogenic and environmental effects on the distribution, abundance and life histories characteristics of exploited species and communities properties. In this topic, Manuel is currently supervising 3 PhD students. And second, he also devotes his efforts to understand the **Local-scale influence of oceanography affecting the population dynamics of key exploited species through connectivity processes**. This specific line is focused on applied fisheries oceanography in which he is currently investigating the influence of connectivity processes under a cross-disciplinary collaborative platform with scientists of other disciplines such as physics and fish larvae ecologists. This is of paramount importance for the Mediterranean Sea in which the geographical- and sociopolitical-based stock boundaries delimit small management areas that bias the estimates of stocks abundance. The expected outcomes on this topic will be of high impact at the international fisheries management level. Dr. Hidalgo currently supervises 1 MSc student in this specific line and he is PI of a research project.

Resumen del Currículum Vitae:

After 11 years of scientific dedication since Dr. Manuel Hidalgo started his PhD, he has participated in 7 national and 11 international research projects being the Principal Investigator (PI) of three European (included an FP7 IEF Marie Curie) and one national project (a total of 285500 Euros as PI). He has produced to date 65 peer-reviewed publications including 36 SCI publications, 2 book chapters, 20 Non-SCI publications and has currently 7 SCI manuscripts under review. From the 36 SCI publications, 29 (80 %) were published in high ranked journals of the first quartile of the specific area and 9 (25%) of them in first decile (e.g. Proceedings of the Royal Society B, Global Change Biology, Ecography, or ICES J. Marine Science and Fisheries Oceanography in the **Fisheries** area). 13 (36%) of the SCI publications were published as first author and 4 (11%) as last (senior) author. He accumulated 381 cites and an H-index of 12. He has presented 18 oral communications in international conferences in addition to other 23 collaborations in communications to conferences. Manuel has been always funded by post under competitive selection. Particularly, besides the PhD (FPI fellow) and postdoc (IEF Marie Curie) grants, he was granted for three post-graduated fellows in addition to several travel grants for conferences. He has also received funding in three projects from international organizations (EUROCEANS and EUROMARINE) to organize international workshops (2011 and 2015). Independently to the almost 4 years of postdoctoral period at the University of Oslo, he enjoyed 4 three-months funded stays during the PhD period: Bergen (2004), Seattle (2005) and Oslo (2006 and 2007).

In parallel to his scientific outcomes, Dr. Hidalgo serves a scientific editor of **ICES Journal of Marine Science** since early 2013 having handled 45 papers to date and leading the edition of 3 Special Issues in this Journal. He also shows an active reviewing activity with 48 papers reviewed for 20 different journals. Manuel also has an active and independent international leadership. He is co-chair of an Experts



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD



DIVISIÓN DE PROGRAMACIÓN
Y GESTIÓN ECONÓMICA Y
ADMINISTRATIVA
SUBDIVISIÓN DE
PLANIFICACIÓN Y GESTIÓN
ADMINISTRATIVA

AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2015

Turno de acceso general

Working Group from the International Council for the Exploration of the Sea (ICES) (WG COMEDA), coordinating the work of close to 20 scientists. He was also convener in Theme sessions in international scientific conferences (e.g. ICES Ann. Sci. Conf. 2015). Manuel regularly participates in evaluation panels of MSc projects of the University of the Balearic Islands (UIB), where he often gives lectures and seminars at the international Master in Marine Ecology, and has also participated in the PhD committees. For the course 2015-2016, he is teaching as ♦Honorary Collaborator♦ of the UIB giving lectures in two subjects of the international Master in Marine Ecology. He is member of the Panel of Experts of the European Commission (FP7 and H2020) having participated in the evaluation of 12 European projects, and has been evaluator for other National research agencies (NSF and CSF). As mentor, Dr. Hidalgo has supervised 4 MSc and 2 PhD students and is currently supervising the work of 1 MSc and 3 PhD students. Finally, he is committed with public science and he is often involved in activities promoting the engagement between science and society such as contributions to local and regional demonstrations, and activities in primary schools.



AYUDAS RAMÓN Y CAJAL CONVOCATORIA 2015

Turno de acceso general

Nombre: CORTEY MARQUÈS, MARTÍ
Referencia: RYC-2015-17154
Área Científica: Ganadería y Pesca
Correo Electrónico: marti.cortey@gmail.com

Título:

Population genetics, Immunology and Bioinformatics Approaches to Viral Diseases in Livestock

Resumen de la Memoria:

I am a Biologist with broad interests in evolution, host-pathogen interactions and immunology, and a strong background in population genetics, molecular biology and bioinformatics. I've been working into Veterinary Sciences in several European countries studying viral evolution, strain distribution and host-pathogen relations in a number of diseases of interest in swine (i.e. PMWS, PRRS, CSF, ASF, ADV), avian (i.e. IBD, Gumboro, ND) and cattle (i.e. BC, FMD) production.

Accordingly, the main research line that I have developed during my scientific career relates with population genetics applications to viral diseases in livestock, using a broad range of techniques in phylogeny, molecular evolution, bioinformatics and biostatistics. I have applied my expertise to characterize the temporal and spatial population diversity of the pathogen genomes and the antigenic diversity of the host. Hence, it is possible to predict not only the virulence of a certain pathogen, but also the susceptibility of a certain host, highlighting the benefits of integrative approaches to tackle complex diseases using a multidisciplinary method that joins population genetics, immunology and bioinformatics.

Swine industry in Spain is paramount, with a huge social and economic impact. A research line focused on endemic viral infections in pig will have a clear applicability in the improvement of swine industry competitiveness. Not only the virulence evaluation of the viral strains will be possible, also the genetic susceptibility of the pig breeds involved in an outbreak will be evaluated, leading to a powerful tool to increase livestock resistance to infections.

Overall, as candidate I do have an enormous potential to reach a leading position in Spain's science, as demonstrated with a solid and promising scientific career, the management of students, the successful cooperation with the industry, a long experience in prestigious research centers and the extensive multidisciplinary research collaborations.

Resumen del Currículum Vitae:

I obtained my degree in Biological Sciences (1993-1997) at the Universitat de Girona where I started my career in population genetics and molecular evolution. I did my master (1998-2000) and my PhD (2000-2005) at the Genetics Unit of the same university granted by the Spanish Government (FPU program). I have done two postgraduate courses in next generation sequencing given by the Cambridge University and the Wellcome Trust.

I have vast knowledge in virology, population genetics, molecular evolution and bioinformatics, and a deep technological knowledge of Sanger and deep sequencing, that have lots of applications to the veterinary field studying viral evolution, pathogenicity and strain distribution. I have held several postdoc positions related to evolutionary biology and viral veterinary diseases across Europe: CReSA (Barcelona, Spain), National Veterinary Institute (Uppsala, Sweden), CNRS-EFS (Marseille, France) and BBSRC National Virology Centre (The Pirbright Institute, UK), where I actively participated in 10 national and 6 international R&D&I projects funded in competitive calls. Nowadays, I am a Principal Investigator at IRTA-CReSA (Barcelona, Spain) granted by the JIN program of MINECO, studying the protective immunity against PRRSV using a multidisciplinary approach that joins population genetics, immunology and bioinformatics.

Up to now, I have published 44 peer-reviewed papers (plus 4 submitted, 16 as first and 3 as last author, 75% of them in the first quartile of Veterinary Sciences and Evolution fields, 833 citations, H-index=16), a book and a book chapter. I state 41 participations in congresses and symposia (15 oral and 26 posters) including 7 invited presentations and I have been awarded with several competitive grants (4 in Spain, 1 in France and 1 in UK). I do have wide teaching experience; I have been accredited as Associate Professor and did a postgraduate course in University teaching. I also participated in the Environmental Sciences grade adaptation to the EEES in the University of Girona.

Overall, as candidate I do have an enormous potential to reach a leading position in Spain's science, as demonstrated with a solid and promising scientific career, the management of students, the successful cooperation with the industry, a long experience in prestigious research centres and the extensive multidisciplinary research collaborations.