



CURRICULUM VITAE (CVA)

CV date	13/01/2022
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Part A. PERSONAL INFORMATION

First and Family name	Enric Gisbert Casas		
Social Security, Passport, ID number		Age	
Researcher numbers	Researcher ID	B-3654-2011	
	ORCID	0000-0002-7457-8468	

A.1. Current position

Institution	Institut de Recerca i Tecnologia Agroalimentàries (IRTA)		
Department	Aquaculture Program		
Address and Country	Cta. Poble Nou km 5.5, 43540 Sant Carles de la Ràpita, Spain		
Phone number	+34 977745427 ext. 1835	E-mail	Enric.gisbert@irta.es
Current position	Researcher and Head of the Aquaculture Program	From	01/03/2004
Espec. cód. UNESCO	251092, 310406; 310502; 310906; 240110		
Keywords	Aquaculture; fish nutrition; functional feeds; health; aquafeeds		

A.2. Education

Name of Institution	Institut de Recerca i Tecnologia Agroalimentàries (IRTA)		
Department	Aquaculture Program		
Address and Country	Cta. Poble Nou km 5.5, 43540 Sant Carles de la Ràpita, Spain		
Phone number	+34 977745427 ext. 1835	E-mail	Enric.gisbert@irta.cat
Current position	Researcher and Head of the Aquaculture Program	From	01/03/2004
Espec. cód. UNESCO	251092, 310406; 310502; 310906; 240110		
Keywords	Aquaculture; fish nutrition; functional feeds; digestive physiology; larvae; ontogeny		

Part B. CV SUMMARY

My scientific career begins at the end of my studies in Biology (UB) with the start of my Master thesis (Dep Biol. Animal, Fac Biology) on the trophic ecology of grey mullet fingerlings that I presented in 1995 (Extraordinary MSc Award by UB). The output of these studies allowed describing the existence of trophic competition among fry from several Mugilidae species naturally recruiting in the Ebro delta river (Northwest Mediterranean). At the same time, I did a Master's Degree in Aquaculture (UB) and I started my doctorate studies (PhD grant AGAUR, Generalitat de Catalunya). My doctoral thesis was focused on the improvement of Siberian sturgeon larval culture and how to synchronize the stage of

larval development with rearing procedures, a work that took place between the UB and the former Cemagref (INRAE nowadays) in Bordeaux (France). During this time, I was trained in cell biology and histology by Dr. C. Sarasquete (ICMAN-CSIC), techniques that I have continued using since then. I defended the PhD thesis in 1999 (Extraordinary Doctorate Award by UB). Then, my scientific career continues in the USA (Fullbright postdoctoral fellowship, 2001), moving to the University of California, Davis (Dept Animal Science) where with Drs. Doroshov and Hung I continued my studies sturgeon nutrition. It is at UC Davis where with Drs R. Piedrahita and D. Conklin I started to work on marine fish. In 2002, I returned to Europe and started a period of 2 years at the Ifremer in Brest together with Drs Zambonino-Infante and Cahu (Marie Curie grant, EU). During this stage, I became familiar with the formulation and manufacture of microdiets for fish, I learned enzymatic techniques for the study of the digestive function, I studied the effect of diet on the development of skeletal deformations, as well as learning the use of molecular markers for the study of the development and condition of the organism. It is during this stage where I was able to expand and integrate a whole repertoire of tools and methodologies allowed me to study in a comprehensive and integrated way the effect of diet on the organism. My postdoctoral period ends in 2004 when I joined IRTA (Ramón y Cajal Program) to work in nutritional requirements in fish larvae and improvement of larval quality through diet. Although the larval period has been the main axis of my research career for more than ten years, there has been a shift during these last years. This change has been driven by the interaction with the private industry that makes me interested in developing and/or improving aquafeeds by means of testing dietary zootechnical feed additives. In this context, the previous experience in the study of the organization and functionality of the digestive system, evaluation of the quality of the organism and use of molecular markers for the study of different processes in the animal, has allowed me to complete such successful works. In this sense, I have been the PI of several national research projects and private contracts on this area. In addition, I have expanded my methodological repertoire with techniques related to oxidative stress, immunological parameters and microbiota analyses. I would also like to highlight that my activity is not restricted to the tasks of the projects/contracts in which I participate, but also to collaborate with other researchers at the international level (Mexico, Iran, Peru, Russia, India, Ecuador, Argentina among others), a clear example is the CYTED Network LARVApplus (www.larvaplus.org) that I coordinate and joins 9 Iberoamerican countries and more than 10 academic institutions in order to promote the aquaculture in Latin America. I have supervised eight PhD (two of them that will be defended during the first trimester of 2022). Additionally, I am Associate Editor of *Frontiers in Physiology* and *Frontiers in Marine Science* (Frontiers Media publisher) and currently editing three research topics. Since September 2021, I am the scientific coordinator of the Subarea of “Ganadería y Acuicultura (GyA)” in the Area of “Ciencias Agrarias y Agroalimentarias (CAA)” of the Agencia Estatal de Investigación, previously I had been just manager of the topic “Acuicultura producción”. The last but not the least, I am currently the Head of the Aquaculture Program at the Center of Sant Carles de la Ràpita (IRTA), taking care of the scientific direction and financial management (1,5 M€ of annual budget). This research program is composed of 9 researchers and 4 technicians supporting laboratory tasks.

Part C. RELEVANT MERITS

C.1. Publications

Total of publications (1994-2022) = 237; **h index** = 39; **Times cited** = 5.511 (without self citations = 4.684). (information retrieved from the Web of Science on the 9th January 2022). Selected publications (5) related to fish nutrition, alternative protein sources and functional feeds:

Salomón, R.; Reyes-Lopez, F.E.; Tort, L.; Firmino, J.P.; Sarasquete, C.; Ortiz-Delgado, J.B.; Quintela, J.C.; Pinilla-Rosas, J.M.; Vallejos-Vidal, E.; **Gisbert, E.** (2021). Medicinal plant leaf extract from sage and lemon verbena promotes intestinal immunity and barrier function in gilthead seabream (*Sparus aurata*). FRONTIERS IN IMMUNOLOGY 12, 670279. IF: 7.56 (Q1, Immunology).

Firmino, J.P.; Galindo-Villegas, J.; Reyes-Lopez, F.E.; Gisbert, E. (2021). Phytogetic bioactive compounds shape fish mucosal immunity. FRONTIERS IN IMMUNOLOGY 12, 95973. IF: 7.56 (Q1, Immunology).

Gisbert, E.; Luz, R.K.; Fernandez, I.; Pradhan, P.K.; Salhi, M.; Mozanzadeh, M.T.; Kotzamanis, Y.; Castro-Ruiz, D.; Bessonart, M.; Darias, M.J. (2021). Development, nutrition, and rearing practices of relevant catfish species (Siluriformes) at early stages. REVIEWS IN AQUACULTURE 14, 73 - 105. IF: 10.59 (Q1, Fisheries).

Firmino, J.P.; Fernandez-Alacid, L.; Vallejos-Vidal, E.; Salomon, R.; Tort, L.; Reyes-Lopez, F.E.; **Gisbert, E.** (2021). Carvacrol, thymol, and garlic essential oil promote skin innate immunity in gilthead seabream through the multifactorial modulation of the secretory pathway and enhancement of mucus protective capacity. FRONTIERS IN IMMUNOLOGY 12, 633621. IF: 7.56 (Q1, Immunology). IF: 7.56 (Q1, Immunology).

Firmino, J.P.; Vallejos-Vidal, E.; Balebona, M.C.; Ramayo-Caldas, Y.; Cerezo, I.M.; Salomon, R.; Tort, L.; Estevez, A.; Reyes-Lopez, F.E.; **Gisbert, E.** (2021). Diet, immunity, and microbiota interactions: an integrative analysis of the intestine transcriptional response and microbiota modulation in gilthead seabream fed an essential oils-based functional diet. FRONTIERS IN IMMUNOLOGY 12, 625297. IF: 7.56 (Q1, Immunology).

Reyes-Lopez, F.E.; Ibarz, A.; Ordonez-Grande, B.; Vallejos-Vidal, E.; Andree, K.B.; Balasch, J.C.; Fernandez-Alacid, L.; Sanahuja, I.; Sanchez-Nuno, S.; Firmino, J.P.; Pavez, L.; Polo, J.; Tort, L.; **Gisbert, E.** (2021). Skin multi-omics-based interactome analysis: integrating the tissue and mucus exuded layer for a comprehensive understanding of the teleost mucosa functionality as model of study. FRONTIERS IN IMMUNOLOGY 11, 613824. IF: 7.56 (Q1, Immunology).

Vallejos-Vidal, E.; Reyes-Cerpa, S.; Tort, L.; Polo, J.; Reyes-López, F.E.; **Gisbert, E.** (2021). Spray-dried porcine plasma (SDPP) promotes the association between metabolic and immunological processes at transcriptional level in gilthead sea bream (*Sparus aurata*) gut. FRONTIERS IN PHYSIOLOGY in press doi: 10.3389/fmars.2022.814233. IF: 4.92 (Q1, Marine & Freshwater Biology).

Zamani, A.; Khajavi, M.; Nazarpak, M.H.; **Gisbert, E.** (2020). Evaluation of a bacterial single-cell protein in compound diets for rainbow trout (*Oncorhynchus mykiss*) fry as an alternative protein source. ANIMALS 10, 1676. IF: 2.94 (Q1, Veterinary Sciences).

Salomón, R.; Firmino, J.P.; Reyes-Lopez, F.E.; Andree, K.B.; Gonzalez-Silvera, D.; Esteban, M.; Tort, L.; Quintela, J.C.; Pinilla-Rosas, J.M.; Vallejos-Vidal, E.; **Gisbert, E.** (2020). The growth promoting and immunomodulatory effects of a medicinal plant leaf extract obtained from *Salvia officinalis* and *Lippia citriodora* in gilthead seabream (*Sparus aurata*). AQUACULTURE. 524, 735291. IF: 4.24 (Q1, Fisheries).

C.2. Congress

In the last 5 years (2017-2021), I have presented a total of 98 communications (53% oral communications or keynote presentations) in international and national conferences linked to aquaculture and nutrition (due to limited space, no details can be provided on this issue).

C.3. Research projects

Name of the project: Effect of diet on the quality of larvae and juveniles in marine fish: establishment of molecular mechanisms responsible for skeletal malformations and pigmentation problems

Name of the organisation hosting the project: IRTA; Role: PI

Amount of funding: 100,579 € Start year: 2005 End year: 2008

Source of funding: Ministerio de Asuntos Económicos y Transformación Digital (Spanish Government)

Name of the project: Protein sources and alternative treatments to improve the sustainability of culture of gilthead sea bream and Senegalese sole; Role: PI

Name of the organisation hosting the project: IRTA

Amount of funding: 122,284 € Start year: 2015 End year: 2018

Source of funding: Ministerio de Asuntos Económicos y Transformación Digital (Spanish Government)

Name of the project: Nutritional strategies for improving productive performance: use of functional feeds and health diets for aquaculture.

Name of the organisation hosting the project: IRTA; Role: PI

Amount of funding: 298,725 € Start year: 2017 End year: 2019

Source of funding: Ministerio de Agricultura, Pesca y Alimentación (Spanish Government)

Name of the project: Mediterranean Aquaculture Integrated Development (MEDAID)

Name of the organisation hosting the project: CIHEAM – IRTA; Role: researcher in WP2

Amount of funding: 6,999,996 € (IRTA funding: 596.900,00 €) Start year: 2017 End year: 2021

Source of funding: European Commission (Horizon 2020)

Name of the project: New Technologies, Tools and Strategies for a Sustainable, Resilient and Innovative European Aquaculture (NewTechAqua). Role: WP2 leader (Production systems and Big Data analyses)

Name of the organisation hosting the project: University of Bologna.

Amount of funding: 5,990,000 € (IRTA funding: 727.000,00 €) Start year: 2018 End year: 2023

Source of funding: European Commission (H2020 Program)

Name of the project: Dietary and gut microbiota interventions as tools for regulating fish adiposity

Name of the organisation hosting the project: IRTA; Role: PI

Amount of funding: 205,700 € Start year: 2019 End year: 2022

Source of funding: Agencia Estatal de Investigación (Spanish Government)

Name of the project: Improving aquaculture production with bioactives from olive biomass

Name of the organisation hosting the project: IRTA; Role: PI

Amount of funding: 136,450 € Start year: 2020 End year: 2021

Source of funding: European Commission (SME Instrument)

Name of the project: Aquaculture sustainability and resilience through nutritional strategies (ACUISOST)

Name of the organisation hosting the project: IRTA; Role: PI

Amount of funding: 747,932 € Start year: 2021 End year: 2023

Source of funding: Ministerio de Agricultura, Pesca y Alimentación – PRTR (Spanish Government)

C.4. Contracts, technological or transfer merits

- Private R+T+D contract with DIANA SPF-AQUATIV (France). Estudios con hidrolizados de proteína con efectos funcionales sobre el sistema inmune. Year: 2014. Value: 31.000 €. PI: E. Gisbert.
- Private R+T+D contract with SPF DIANA Feeds (France): Estudios de distintos hidrolizados de proteína en dietas para trucha y lubina. Year: 2017. Value: 51.000 €. PI: E. Gisbert.
- Private R+T+D contract with Skretting ARC (Norway): Evaluación de distintas dietas con altos niveles de sustitución de harina de pescado y su efecto sobre la inmunidad. 2017. Value: 27.600 €. PI: E. Gisbert.
- Private R+T+D contract with LUCTA S.A. (Spain): Efecto de aceites esenciales sobre la digestibilidad de fuentes lipídicas en trucha. Year: 2018. Value: 26.900 €. PI: E. Gisbert.
- Private R+T+D contract with BIOMAR (Denmark): Evaluación de distintas microdietas para lubina y su efecto sobre la calidad de los animales. Year: 2017. Value: 18.000 €. PI: E. Gisbert.
- Private R+T+D contract with DSM Nutrition & Health (Switzerland): Inclusión de fitasa en dietas vegetales en trucha arco iris. Year: 2020. Value: 18.000 €. PI: E. Gisbert.
- Private R+T+D contract with BIOMAR (Denmark): Evaluación de distintas para alevines de lubina basadas en distintas fuentes de hidrolizados proteicos. Year: 2020. Value: 35.000 €. PI: E. Gisbert.