

# KATERINA A. MOUTOU

## Curriculum Vitae

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### PERSONAL DETAILS

Date and Place of Birth: 16 July 1969, Volos, Greece  
Current Position: Associate Professor, Vertebrate Biology  
Work Address: Department of Biochemistry and Biotechnology, University of Thessaly  
Biopolis, 41500 Larissa, Greece  
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### UNIVERSITY EDUCATION

Jan 1993-May 1996 Ph.D. project, University of Aberdeen, U.K. Departments of Zoology and Pharmacology "Feeding behaviour, growth performance and toxicological responses in rainbow trout (*Oncorhynchus mykiss* (Walbaum)) fed on normal and medicated diets"; Supervised by Prof. D.F. Houlihan and Prof. M.D. Burke; Funded by the Greek State Scholarship Foundation

Sep 1987-Oct 1991 Aristotle University of Thessaloniki, Greece, B.Sc. (Hons) in Biology; Final Mark: 7.55 (max 10.0) equivalent to B-upper

### PARTICIPATION IN RESEARCH PROJECTS

Apr 1997-Aug 1998: UCTRA, University of Algarve, Portugal. EU Research Fellow in **FAIR961422: *Endocrine control as a determinant of larval quality in fish aquaculture.***

2001–2002: *Molecular cloning and sequence of the embryonic form of Sparus aurata skeletal myosin alkali light chain: developmental expression* funded by Instituto de Cooperação Científica e Tecnológica Internacional (ICCTI) of Portugal.

Mar 2001–Mar 2002: *Sex differentiation and stress: correlation of the levels of expression of P450 aromatase and the brain peptide pro-opiomelanocortin (POMC)* funded by the Research Committee of University of Thessaly, Greece.

Nov 2002-Oct 2005: *Molecular cloning and characterization of the main serine proteases in the euryhaline teleost Sparus aurata: salinity and hormonal regulation of gene expression and enzyme activity levels* funded by the Ministry of Education, Greece.

2004-2005: *The importance of the genetic polymorphism of Major Histocompatibility Complex (MHC) in disease susceptibility in mammals: the case of European brown hare (Lepus europaeus)* funded by the Ministry of Education, Greece.

Jan 2004-Jan 2007: *Incorporation of legumes and carob seed germ meal in sea bream and sea bass feeds* funded by the General Secretariat of Research and Technology, Greece.

2004-2008: Member of Working Group 2 *Genetic variation in prenatal events and its effect on postnatal growth and meat/fish quality* of COST Action 925 «The importance of prenatal events for postnatal muscle growth in relation to the quality of muscle based foods» ([www.agrsci.dk/costaction925](http://www.agrsci.dk/costaction925)).

2008- currently: Member of Working Group 1 *Basic knowledge on fish larvae biology* of COST Action FA0801 «LARVANET: Critical success factors for fish larval production in European Aquaculture: a multidisciplinary network» ([www.larvanet.org](http://www.larvanet.org))

2010 – 2013: *Expression of skeletal myosin light chain 2 (MLC2) in gilthead sea bream (Sparus aurata L.): regulation and correlation with growth markers* funded by the Ministry of Education, Greece.

Sep 2010: *Alternative polyadenylation and fish muscle growth: the case of myosin light chain 2* research visit funded by the Association of European Marine Biological Laboratories (ASSEMBLE)

Sep 2012: *Adipocyte-Myocyte cross-talk: systemic supervision* research visit funded by the Association of European Marine Biological Laboratories (ASSEMBLE)

Sep-Nov 2012: *Structure of the trophic web in the lake Karla, Greece*, funded by the Managing Body of Lake Karla

Feb – Aug 2015: *Identifying the threats against aquatic organisms of different trophic levels in the lake Karla, Greece*, funded by the Managing Body of Lake Karla

Mar 2015- Feb 2018: *COLUMBUS- Monitoring, managing and transferring marine and maritime knowledge for sustainable Blue Growth* (H2020-BG-2014-1), CSA, participating as Aquaculture Expert.

May 2017 – Apr 2022: [PerformFISH - Consumer Driven Production: Integrating Innovative Approaches for Competitive and Sustainable Performance across the Mediterranean Aquaculture Value Chain](#), Grant Agreement 727610, Research and Innovation Action; H2020-SFS-23-2016, Coordinator.

2018-2021: *Development of novel methodology for the genetic selection of fish with high food conversion capacity*, Grant number 5010669, Greek Ministry of Rural Development and Food, Coordinator.

2018-2021: *Development and validation of a novel harvesting system towards the improvement of welfare of marine farmed fishes*, Grant number 5010690, Greek Ministry of Rural Development and Food.

2018-2021: *Study of size variation in juveniles of farmed great amberjack to improve farming and handling practices*, Grant number 5010923, Greek Ministry of Rural Development and Food.

2018-2021: *Study and application of novel methods at harvesting and processing to improve the quality and self-life span of fresh farmed fish*, Grant number 5010939, Greek Ministry of Rural Development and Food.

2018-2021: *Improvement of fertility in dairy cows through the identification and recruitment of individuals with genetically determined thermotolerance*, RESEARCH-CREATE-INNOVATE, General Secretariat of Research and Technology, Greece.

November 2018 – Oct 2021: [Legumes Translated – Translating knowledge for legume-based farming for feed and food systems](#), Grant Agreement 817634, CSA; H2020-RUR-2018-1.

2019-2023: *FishPhytoFeed- Development of an Advanced Integrated Toolbox for in vitro high-throughput screening of quality and phyto-estrogens in feed ingredients for Mediterranean finfish*, Special Actions, General Secretariat of Research and Technology, Greece.

2020-2023: *Fish\_Superfoods- Development of novel functional fish superfoods for sustainable fish farming*, RESEARCH-CREATE-INNOVATE, General Secretariat of Research and Technology, Greece.

2020-2023: *Development of an innovative evaluation system for ingredients and fishfeeds to promote competitive performance in the Mediterranean fish farming*, RIS3 Implementation, Operational Program in the Region Sterea Ellada 2014-2020, Greece.

#### PEER-REVIEWED PUBLICATIONS

1. Martha Kaloyianni, Basile Michaelides and **Katerina Moutou** (1993). Effect of adenosine on glucose metabolism of *Rana ridibunda* erythrocytes. *Journal of experimental Biology*, 177, 41-50.
2. Ian D. McCarthy, Dominic F. Houlihan, Chris G. Carter and **Katerina Moutou** (1993). Variation in individual food consumption rates in fish and its implications for the study of fish nutrition and physiology. *Proceedings of the Nutrition Society*, 52, 427-436.
3. Martha Kaloyianni and **Katerina Moutou** (1994). Substrate utilization by *Rana ridibunda* erythrocytes. *Comparative Biochemistry and Physiology*, 108B, 357-366.
4. **Katerina A. Moutou**, Thomas Braunbeck and Dominic F. Houlihan (1997). Quantitative analysis of alterations in liver ultrastructure of rainbow trout (*Oncorhynchus mykiss* (Walbaum)) after administration of the aquaculture antibacterials oxolinic acid and flumequine. *Diseases of Aquatic Organisms*, 29, 21-34.
5. **Katerina A. Moutou**, Ian D. McCarthy and Dominc F, Houlihan (1998). The effect of feeding ration and social rank on the fin damage in rainbow trout, *Oncorhynchus mykiss* (Walbaum). *Journal of Fish Biology*, 52, 756-770.
6. **Katerina A. Moutou**, M. Danny Burke and Dominc F, Houlihan. (1998). Hepatic P450 Monooxygenase response in rainbow trout (*Oncorhynchus mykiss* (Walbaum)) administered aquaculture antibiotics. *Fish Physiology and Biochemistry*, 18, 97-106.

7. Zissis Mamuris, Costas Stamatis, **Katerina A. Moutou**, Apostolos Apostolidis and Costas Triantaphyllidis (2001). Application of RFLP analysis of PCR amplified mitochondrial DNA segments to evaluate genetic variation in striped red mullet (*Mullus surmuletus* L.) and in red mullet (*Mullus barbatus* L.) populations. *Marine Biotechnology*, 3, 264-274.
8. **Katerina A. Moutou**, Silvia Socorro, Deborah M. Power, Zissis Mamuris, and Adelino V.M. Canario (2001). Molecular cloning and sequence of gilthead sea bream (*Sparus aurata*)  $\alpha$ -skeletal actin: tissue and developmental expression. *Comparative Physiology and Biochemistry B*, 130, 13-21.
9. **Katerina A. Moutou**, Ian D. McCarthy and Dominic F. Houlihan (2001). The effect of dietary flumequine on food consumption and growth of rainbow trout. *Aquaculture International*, 9, 95-102.
10. **K.A. Moutou**, A.V.M. Canario, Z. Mamuris, and D.M. Power (2001). Molecular cloning and sequence of *Sparus aurata* skeletal myosin light chains expressed in white muscle: developmental expression and thyroid regulation. *Journal of Experimental Biology*, 204, 3009-3018.
11. Marco A. Campinho, **Katerina A. Moutou**, and Deborah M. Power (2004). Temperature sensitivity of skeletal ontogeny in *Oreochromis mossambicus*. *Journal of Fish Biology*, 65, 1003-1025.
12. **Katerina A. Moutou**, Panagiota Panagiotaki, and Zissis Mamuris (2004). Effects of salinity on digestive protease activity in the euryhaline sparid *Sparus aurata* L: a preliminary study. *Aquaculture Research*, 35, 1-3.
13. Costas Stamatis, Alexander Triantafyllidis, **Katerina A. Moutou** and Zissis Mamuris (2004). Mitochondrial DNA variation in Northeast Atlantic and Mediterranean populations of Norway lobster, *Nephrops norvegicus*. *Molecular Ecology*, 13, 1377-1390.
14. Zissis Mamuris, Maria Th. Stoumboudi, Costas Stamatis, Roberta Barbieri and **Katerina A. Moutou** (2005). Genetic variation in populations of the endangered fish *Ladigesocypris ghigii* and its implications for conservation. *Freshwater Biology*, 50, 1441-1453.
15. Elena Sarropoulou, Deborah M. Power, Zissis Mamuris and **Katerina A. Moutou** (2006). The two isoforms of myosin light chain 2 in gilthead sea bream (*Sparus aurata*); alternative polyadenylation site selection and tissue expression. *Archives of Animal Breeding*, 49 Special Issue, 92-96.
16. Costas Stamatis, Alexander Triantafyllidis, **Katerina A. Moutou** and Zissis Mamuris (2006). Allozymic variation in Northeast Atlantic and Mediterranean populations of Norway lobster, *Nephrops norvegicus*. *ICES Journal of Marine Science*, 63, 875-882
17. Eleni Psochiou, Zissis Mamuris, Panagiota Panagiotaki, Dimitrios Kouretas, **Katerina A. Moutou**. (2007) The response of digestive proteases to abrupt salinity decrease in the euryhaline sparid *Sparus aurata* L. *Comparative Biochemistry & Physiology*, 147B, 156-163.
18. Eleni Psochiou, Elena Sarropoulou, Zissis Mamuris, **Katerina A. Moutou** (2007). Sequence analysis and tissue expression pattern of *Sparus aurata* chymotrypsinogens and trypsinogen. *Comparative Biochemistry & Physiology*, 147B, 367-377.
19. Costas Stamatis, Franz Suchentrunk, **Katerina A. Moutou**, ..... , Zissis Mamuris (2009). Phylogeography of the brown hare (*Lepus europaeus*) in Europe: a legacy of south-eastern Mediterranean refugia? *Journal of Biogeography*, 36, 515-528.
20. Apostolos P. Apostolidis, **Katerina A. Moutou**, Costas Stamatis, Zissis Mamuris. Genetic structure of three marine fishes from the Gulf of Pagasitikos (Greece) based on allozymes, RAPD and mtDNA RFLP markers. *Biologia*, 64, 1005-1010
21. Evagelia A. Koutsogiannouli, **Katerina A. Moutou**, Theologia Sarafidou, Costas Stamatis, Vasiliki Spyrou, Zissis Mamuris (2009). Major histocompatibility complex variation at class II *DQA* locus in the brown hare (*Lepus europaeus*). *Molecular Ecology*, 18, 4631-4649.
22. Evagelia A. Koutsogiannouli, **Katerina A. Moutou**, Theologia Sarafidou, Costas Stamatis, Zissis Mamuris (2010). Detections of hybrids between wild boars (*Sus scrofa scrofa*) and domestic pigs (*Sus scrofa F. domestica*) in Greece, using the PCR-RFLP method on melanocortin-1 receptor (MC1R) mutations. *Mammalian Biology*, 75, 69-73.

23. Zisis Mamuris, **Katerina A. Moutou**, Costas Stamatis, Theologia Sarafidou, Franz Suchentrunk. (2010) Y DNA and Mitochondrial lineages in European and Asian populations of the brown hare (*Lepus europaeus*). *Mammalian Biology*, 75, 233-242.
24. Nikolopoulou, D., **Moutou, K.A.**, Fountoulaki, E., Venou, B., Adamidou, S., Alexis, M.N. (2011) Patterns of gastric evacuation, digesta characteristics and pH changes along the gastrointestinal tract of gilthead sea bream (*Sparus aurata* L.) and European sea bass (*Dicentrarchus labrax* L.) *Comparative Biochemistry & Physiology*, 158A, 406-414.
25. **Katerina A. Moutou**, Zisis Mamuris, Tania Firme, Maria Kontou, Theologia Sarafidou, Maria Th. Stoumboudi (2011). Patterns of variability at the major histocompatibility class I and class II loci in populations of the endangered cyprinid *Ladigesocypris ghigii*. *Conservation Genetics*, 12, 1159-1171.
26. **Moutou, K.A.**, Tsikogias, S., Papadimitriou, T., Kagalou, I. (2012) Oxidative stress in *Cyprinus carpio* to analyze microcystin impact in eutrophic shallow lakes: A preliminary study. *Journal of Environmental Monitoring*, 14, 2195-2203.
27. Koutsogiannouli, E.A., **Moutou, K.A.**, Stamatis, C., Mamuris, Z. (2012) Analysis of MC1R genetic variation in *Lepus* species in Mediterranean refugia. *Mammalian Biology*, 77, 428-433.
28. **Moutou, K.A.**, Koutsogiannouli, E.A., Stamatis, C., Billinis, C., Kalbe, C., Scandura, M., Mamuris, Z. (2013) Domestication does not narrow MHC diversity in *Sus scrofa*. *Immunogenetics*, 65, 195-209.
29. Valente, L.M.P., **Moutou, K.A.**, Conceição, L.E.C., Engrola, S., Fernandes, J.M.O., Johnston, I.A. (2013) What determines growth potential and juvenile quality of farmed fish species? *Reviews in Aquaculture*, 5, S168-S193.
30. Iacovakis, C., Mamuris, Z., **Moutou, K.A.**, Touloudi, A., Hammer, A.S., Valiakos, G., Giannoulis, T., Stamatis, C., Spyrou, V., Athanasiou, L.V., Kantere, M., Asferg, T., Giannakopoulos, A., Salomonsen, C.M., Bogdanos, D., Birtsas, P., Petrovska, L., Hannant, D., Billinis, C. (2013) Polarisation of Major Histocompatibility Complex II Host Genotype with Pathogenesis of European Brown Hare Syndrome Virus. *PLoS ONE*, 8 (9), art. no. e74360.
31. Koutsogiannouli, E.A., **Moutou, K.A.**, Stamatis, C., Walter, L., Mamuris, Z. (2014) Genetic variation in the major histocompatibility complex of the European brown hare (*Lepus europaeus*) across distinct phylogeographic areas. *Immunogenetics*, 66, 379-392.
32. Georgiou, S., Makridis, P., Dimopoulos, D., Power, D.M., Mamuris, Z., **Moutou, K.A.** (2014) Myosin light chain 2 isoforms in gilthead sea bream (*Sparus aurata* L.): Molecular growth markers at early stages. *Aquaculture*, 432, 434-442.
33. Stamatis, C., Sarri, C.A., **Moutou, K.A.**, Argyrakoulis, N., Galara, I., Godosopoulos, V., Kolovos, M., Liakou, C., Stasinou, V., Mamuris, Z. (2015) What do we think we eat? Single tracing method across foodstuff of animal origin found in Greek market. *Food Research International*, 69, 151-155.
34. Georgiou, S., Alami-Durante, H., Power, D.M., Sarropoulou, E., Mamuris, Z., **Moutou, K.A.** (2015) Transient up- and down- regulation of myosin light chain 2 and myostatin mRNA mark the changes from stratified hyperplasia to muscle fiber hypertrophy in larvae of gilthead sea bream (*Sparus aurata* L.). *Cell and Tissue Research*, DOI 10.1007/s00441-015-2254-0.
35. Villasante, A., Powell, M. S., Moutou, K., Murdoch, G.K., Overturf, K., Wacyk, J. and Hardy, R.W. (2016). Effects of anthocyanidins on myogenic differentiation and antioxidant defense in primary myogenic cells isolated from rainbow trout (*Oncorhynchus mykiss*). *Aquaculture*, 454, 81-89.
36. Amoutzias, G.D., Giannoulis, T., Moutou, K.A., Psarra, A.-M.G., Stamatis, C., Tsipourlianos, A., Mamuris, Z. (2016) SNP identification through transcriptome analysis fo the European brown hare (*Lepus europaeus*): cellular energetics and mother's curse. *PLoS ONE*, 11, e0159939.
37. Koutsogiannouli, E.A., Moutou, K.A., Stamatis, C., Mamuris, Z. (2016). MHC class II DRB1 and DQA2 gene polymorphisms in four indigenous breeds of sheep (*Ovis aries*). *Mammalian Biology*, 81, 628-636.

38. Stamperna, K., Giannoulis, T., Nanas, I., Kalemkeridou, M., Dadouli, K., **Moutou, K.**, Amiridis, G.S., Dovolou E. (2020). Short term temperature elevation during IVM affects embryo yield and alters gene expression pattern in oocytes, cumulus cells and blastocysts in cattle. *Theriogenology* 156, 36-45.

#### ***Development and supply of novel methodology***

***OptiFeed Services***: an integrated methodology package for the determination in vitro of the digestibility and bioavailability of dietary proteins in raw materials and fish feeds.

OptiFeed: An *in vitro* system for accurate prediction of biological larval performance (2013). *Hatchery Feed*, Vol 1, p14-19.

#### ***Participation in Expert Groups***

- Member of the expert group for the “*Ex-Post Evaluation and Impact Assessment of FP7 funded projects in the area of Food, Agriculture, Fisheries and Biotechnology (FAFB)*”, European Commission, Feb-Nov 2014.
- Member of the expert group for the “*Interim Evaluation and Impact Assessment of SC2 H2020 projects*”, European Commission, Feb 2016 – Sep 2017.

**Report 1:** [\*Portfolio Analyses, Impact Assessment and Approaches to examining how Framework Programmes from FP5 to Horizon 2020 address Societal Challenge 2: Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy Expert Group Report, European Commission.\*](#)

**Report 2:** [\*Interim Evaluation of Horizon 2020: Societal challenge 2: Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy. Expert evaluation Report\*](#)

- Member of the expert group for the “*FOOD2030- Research and Innovation Strategic Planning*”, European Commission, Feb 2017 – Jun 2018.  
**Report:** [\*Recipe for change- An agenda for a climate-smart and sustainable food system for healthy a Europe.\*](#)
- [2<sup>nd</sup> FOOD HIGH LEVEL EVENT: Research and Innovation for Food and Nutrition Security- Transforming our Food Systems](#), June 2018
- Member of the Advisory Board of the research project *FIT4FOOD2030*: fostering integration and transformation for FOOD2030 (<https://fit4food2030.eu/>), Grant Agreement 774088, CSA; H2020-SFS-18-2017.
- Member of the External Advisory Group of the research project *ClimeFish*: co-creating a decision support framework to ensure sustainable fish production in Europe under climate change (<https://climefish.eu/>), Grant Agreement 677039, RIA; H2020-BG-02-2015.

#### **Other relevant experience**

- Reviewer of the international scientific journals *Comparative Biochemistry & Physiology*, *Journal of Fish Biology*, *Journal of Experimental Biology*, *Fish Physiology & Biochemistry*, *Aquaculture*, *Aquaculture Research* and research proposal reviewer of the Biotechnology and Biological Sciences Research Council (BBRSC), UK, and Seventh Framework Programme (FP7), European Commission.
- Invited speaker in the undergraduate and postgraduate courses of Faculdade de Engenharia dos Recursos Naturais, University of Algarve, Portugal in the frame of Socrates Exchange Programme.
- Invited speaker in the MSc course “Aquaculture”, organized by Universitat de Barcelona in collaboration with Universitat Autònoma de Barcelona and Universitat Politècnica de Catalunya.
- Director of the MSc Course “*Biotechnology-Quality Assessment in Nutrition and the Environment*”, Department of Biochemistry & Biotechnology, University of Thessaly
- Supervisor of four PhD and ten MSc projects, Department of Biochemistry & Biotechnology, University of Thessaly.