State-of-the-art scientific and/or technologic reviews on the use of molecular methods and functional genomics in aquaculture

Outline for a special journal issue in Reviews in Fisheries Science.

Issue Editors: Prof. Kristina Sundell, Göteborg University, Sweden and Prof. Deborah Power, Centro de Ciencias de Mar (CCMAR), Univesidade do Algarve, Portugal

Issue outline:

Introduction on the state of the art of functional genomics applied to fish aquaculture: a European perspective and the objective of the journal issue, written by the coordinators of the action.
Authors: S. Sundell, D.M. Power, P. Prunet (INRA, Renne, France), A. Figueras (CSIC, Vigo, Spain).

Chapters:

1. Genomics tools for aquaculture: Status and Perspectives

Coordinating Author: Adelino Canario
Universidade do Algarve, Centro de Ciências do Mar, Faro, Portugal
Suggested co-authors: Filip Volckaert, Yan Guiguen, Chris Haley, Richard Reinhardt

2. Genomics of Fish Sex Determination and Sex Differentiation

Coordinating author: Francesc Piferrer
Institut de Ciències del Mar, Consejo Superior de Investigaciones Científicas (ICM-CSIC), Passeig Marítim, Barcelona, Spain
Suggested co-authors: Yann Guiguen and David Penman

3. Functional genomics and proteomic approaches for the study of gamete quality in finfish aquaculture

Coordinating author: Joan Cerdà
Lab IRTA-ICM, CMIMA-CSIC, 08003-Barcelona, Spain, and Center of Aquaculture-IRTA, Tarragona, Spain
Suggested co-authors: Julien Bobe, Patrick J. Babin, Arie Admon and Esther Lubzens

4. Functional genomic approach to the brain-gonad axis and puberty of fish in aquaculture

Coordinating author: Geir Lasse Taranger,
Institute of Marine Research, Bergen, Norway
Suggested co-authors: Jean-Jacques Lareyre, Manuel Carrillo

5. The molecular and endocrine basis of flatfish metamorphosis

Coordinating author: Björn Thrandur Björnsson
Fish Endocrinology Laboratory, Department of Zoology/Zoophysiology, Göteborg University, Göteborg, Sweden
Suggested co-authors: Ingibjörg E. Einarsdottir, Jon Hildahl, Glen Sweeney, Galay-Burgos, Saele, Karen Pittman, Smaradottir, Moutou, Deborah Power

6. Fish lipid nutrigenomics: Current state and prospects for fin-fish aquaculture

Coordinating author: Michael J. Leaver
Institute of Aquaculture, University of Stirling, Stirling, Scotland, UK
Suggested co-authors: Gregorios Krey, Douglas R. Tocher, Jose M. Bautista, Bente Tortensen, Thrandur Bjornsson, Elisabeth Jönsson

7. Functional molecular aspects of lipoprotein metabolism in fish and shellfish

Patrick J. Babin and Esther Lubzens
Genomique et Physiologie des Poissons, UMR NuAGe, Université Bordeaux 1, 33405 Talence cedex, France.
Israel Oceanographic and Limnological Research, National Institute of Oceanography, 31080 Haifa, Israel.

8. Functional genomics and stress responses in aquacultured fish

Coordinating author: Patrick Prunet
INRA/SCRIBE, campus de Beaulieu, Rennes cedex, France
Suggetsed co-authors: Svante Winberg, Michael Cairns, Tom G. Pottinger, Deborah Power, Adelino Canario, Snuttan Sundell, Geir Lasse Taranger, Andy Cossins

9. The molecular basis of diseases and immune function of fin-fish in aquaculture

Coordinating author: Chris Secombes
Department of Zoology, University of Aberdeen, Aberdeen, Scotland, UK
Suggetsed co-authors: , Oystein Evensen, Tony Ellis, Abdenour Benmansour, Patrick Prunet, Björn Olav Kvamme, Victor Mulero, Giuseppe Scapigliati, Beatriz Novoa

10. Genomics and diseases in bivalves

Coordinating author: Antonio Figueras
Instituto Investigaciones Marinas, CSIC, Spanish National Reference Laboratory for Mollusc Diseases, Vigo, Spain
Suggested co-authors: Tristan Renault, Paola Venier, Alberto Pallavicini, Beatriz Novoa.

K. Sundell
Göteborg, February 2007