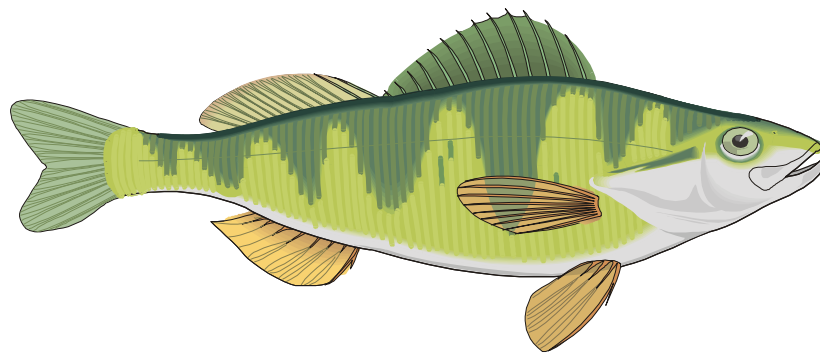


Molecular Studies in Fish Endocrinology

**John Trant
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Don MacKinlay**



International Congress on the Biology of Fish
Towson University, Baltimore MD July 26-30, 1998

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Fish Endocrinology***

SYMPOSIUM PROCEEDINGS

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*International Congress on the Biology of Fish
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PREFACE

This symposium was organized to detail some of the cutting-edge research being conducted in the field of molecular endocrinology using fish as research models. Recently, there have been some exciting advancements in the areas of neuroendocrinology, gonadal endocrinology, growth, development, onset of puberty, and gamete maturation which were generated via a molecular approach and some were described in this symposium. Most of the symposium presentations were designed to enhance our understanding of the reproductive process in fish and many utilized studies of ontogeny, development, and growth to test their hypotheses. It has become increasingly evident that the reproductive process is not restricted to the adult phase of the life history of fish, instead the reproductive process is initiated during early development (e.g., sex determination) and the onset of puberty and gamete maturation is intertwined with a number of endocrine systems (growth regulators, steroids, gonadotropins, and thyroid hormones).

This symposium established a forum for the presentation of some of the outstanding molecular research currently being conducted on the endocrine systems in fish. This work is to be discussed as to its implication to both applied and basic research. Highlights of this symposium include:

- 1) Multiple aspects of steroidal control of final oocyte maturation and ovulation (Frederick Goetz) were examined.
- 2) The genes and gene products of a number of steroidogenic enzymes are characterized along with a description of the differential expression of 4 genes throughout the reproductive cycle in catfish (John Trant) and the reproductive significance of multiple forms of aromatase (converts androgens to estrogens) in goldfish (Gloria Callard).
- 3) A discussion of regulators of muscle formation (Jim Du), and the role of growth factors (IGF) and their receptors (Thomas Chen) during early development in fish is woven into the description of a novel hypothesis for the mechanism of gonadal differentiation in catfish (Reynaldo Patino).
- 4) In addition to the descriptions of the cDNA encoding receptors of endocrine agents (estradiol, GnRH, and IGF), the oocyte receptor for the blood-born vitellogenin is described (Craig Sullivan).
- 5) In association with this symposium, Yonathan Zohar presented a plenary lecture concerning the significance of multiple forms of gonadotropin releasing hormone (GnRH) in fish.

SYMPOSIUM ACKNOWLEDGEMENTS

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John M. Trant (Chair), Yonathan Zohar, and Allen Place
Center of Marine Biotechnology
University of Maryland Biotechnology Institute

Don MacKinlay
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Fisheries and Oceans Canada

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Don MacKinlay
Congress Chair

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