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AQUACULTURE COLLABORATIVE RESEARCH SUPPORT PROGRAM



## RESEARCH REPORTS

Sustainable Aquaculture for a Secure Future

**Title:** Trends in the evolution of the prodynorphin gene in teleosts: Cloning of eel and tilapia prodynorphin cDNAs

**Author(s):** Jasem Alrubaian<sup>a</sup>, Stephanie Lecaude<sup>c</sup>, Justin Barba<sup>c</sup>, Laura Szynskie<sup>c</sup>, Nicole Jacobsc, David Bauer<sup>c</sup>, Christopher Brown<sup>b</sup>, Irina Kaminer<sup>c</sup>, Brian Bagrosky<sup>c</sup> and Robert M. Dores,

<sup>a</sup>Department of Biological Sciences, University of Kuwait, Kuwait City, Kuwait

<sup>b</sup>Marine Biology, Florida International University, North Miami, FL USA

<sup>c</sup>Department of Biological Sciences, University of Denver, Denver, CO USA

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**Abstract:** The detection of the prodynorphin gene in anuran amphibians and lungfishes may indicate that this gene arose as a result of the duplication of the proenkephalin gene early during the divergence of the Sarcopterygii, or that this gene may predate the divergence of the ray-finned fish and the lobe-finned fish. The cloning of prodynorphin-related genes from the pufferfish and zebrafish supports the latter hypothesis. This study analyzes trends in the radiation of the prodynorphin gene in teleosts. Prodynorphin cDNAs were cloned from the brain of the eel *Anguilla rostrata* and the Nile tilapia, *Oreochromis niloticus*. These teleost prodynorphin sequences have distinct  $\alpha$ -neoendorphin, dynorphin A, and dynorphin B sequences, and a novel opioid sequence, YGGFI. The relationship of these teleost prodynorphin sequences to other actinopterygian and sarcopterygian prodynorphin sequences will be discussed.

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