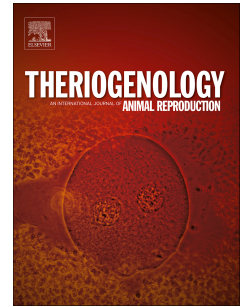


Accepted Manuscript

17 α -Methyltestosterone implants accelerate spermatogenesis in common snook, *Centropomus undecimalis*, during first sexual maturation

Gabriel Passini, Fabio Carneiro Sterzelecki, Cristina Vaz Avelar Carvalho, Manecas Francisco Baloi, Virginia Naide, Vinicius Ronzani Cerqueira



PII: S0093-691X(17)30489-2

DOI: [10.1016/j.theriogenology.2017.10.015](https://doi.org/10.1016/j.theriogenology.2017.10.015)

Reference: THE 14298

To appear in: *Theriogenology*

Received Date: 6 May 2017

Revised Date: 29 August 2017

Accepted Date: 7 October 2017

Please cite this article as: Passini G, Sterzelecki FC, Carvalho CVA, Baloi MF, Naide V, Cerqueira VR, 17 α -Methyltestosterone implants accelerate spermatogenesis in common snook, *Centropomus undecimalis*, during first sexual maturation, *Theriogenology* (2017), doi: 10.1016/j.theriogenology.2017.10.015.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

17 α -Methyltestosterone implants accelerate spermatogenesis in common snook, *Centropomus undecimalis*, during first sexual maturation

Abstract

The common snook, *Centropomus undecimalis*, is an emerging species for intensive fish culture, however, some reproductive aspects of this species, especially the development of the testes and the action of androgen hormones on spermatogenesis have not been studied. The objective of this study was to evaluate the effects of 17 α -methyltestosterone (MT) on spermatogenesis and steroidogenesis during the first sexual maturation of the common snook. The fish, which were reproduced in captivity, had a body weight of 305.80 ± 35.60 g and a total length of 34.11 ± 1.08 cm. We used ethylene-vinyl-acetate (EVAc) implants with four concentrations of the hormone MT: T1 (0.3 mg/kg); T2 (3.0 mg/kg); T3 (15.0 mg/kg) and T4 (30.0 mg/kg), and a control group that did not receive the hormone. The gonads increased ($P < 0.05$) in relation to the concentrations of MT. Histological analysis revealed a progression of spermatogenesis in the MT treatments, especially in T3 and T4. Sperm release was attained in some fish treated with MT. However, there was a partial suppression of the levels of testosterone (T) and 11-ketotestosterone (11-KT) in plasma in the MT treatments, indicating a negative feedback on steroidogenesis. However, this suppression of T and 11-KT in plasma did not prevent an increase in the gonadosomatic index and the progression of gametogenesis. There was also an increase of estradiol (E2) in plasma in the treatments with the highest MT concentrations. The results suggest that the application of EVAc implants with MT at concentrations of 15 and 30 mg/kg stimulates the development and growth of the testes and accelerates spermatogenesis.

Keywords: Androgens, puberty, steroidogenesis, protandric.

1. Introduction

The common snook (*Centropomus undecimalis*) is one of the largest fish in the Centropomidae family. It has fast growth, high market value, excellent flesh quality and is important to sport fishing in the American continent [1,2]. It is also considered an emerging species for intensive fish culture in the Americas [3]. The species is a protandrous hermaphrodite [4] and great efforts have been made to understand and improve its reproductive process in captivity.

Download English Version:

<https://daneshyari.com/en/article/8427821>

Download Persian Version:

<https://daneshyari.com/article/8427821>

[Daneshyari.com](https://daneshyari.com)