Egyptian Journal of Aquatic Biology & Fisheries
Zoology Department, Faculty of Science,
Ain Shams University, Cairo, Egypt.
ISSN 1110 – 6131
Vol. 24(7): 973 – 979 (2020)
www.ejabf.journals.ekb.eg

Effect of some growth factors on *Cyprinus carpio* oocytes maturation (*in vitro* study)

Azal N. B. Al-Nusear

Department of Anatomy and Histology, College of Veterinary Medicine,
University of Basrah, Basrah, Iraq.

email**:** azel.bader@uobasrah.edu.iq

ARTICLE INFO
Article History:
Received: Oct. 18, 2020
Accepted: Nov. 29, 2020
Online: Dec. 30, 2020

Keywords:
oocyte,
Cyprinus carpio,
Common carp,
IGF,
FGF,
TGF.

ABSTRACT

In fish, prior to ovulation, the process that includes oocyte maturation is essential for successful and guaranteed fertilization. In the current study, *Cyprinus carpio* L. oocytes were exposed to three different types of recombinant growth factors: Insulin-like growth factor (IGF), Fibroblast growth factor (FGF), and Transforming growth factor (TGF). A sample of 5 ng /ml of the three upper- mentioned growth factors was utilized on common carp follicles for 3 different periods of time (24,48, and 72 hours). The current study was conducted from December 2019 till January 2020 at the college of veterinary medicine. The results recorded a significant effect ($P<0.01$) between the polarization index (PI) and the different times of incubation. Additionally, an interaction between the treatments and incubation time, using F test, was spotted. Using the Tukey test for multiple comparisons, a highly significant difference ($P<0.01$) between various treatments was noted, except for the comparable relationship between the control and G1.

INTRODUCTION

Cyprinus carpio L., one of the most significant fish species in fish farming, is common and widespread in ponds, lakes, and rivers in central Asia and Europe (**Bakos &Gorda, 2001**).

Fish oogenesis is classified into three stages: previtellogenesis, vitellogenesis, and oocyte maturation. Studies have been conducted dwelling with the two latter stages in addition to the controlling involvement of the hypothalamopituitary- gonadal axis (**Nagahama, *et al.* ,1995**).

Oocyte maturation in teleost (like other vertebrates) occures before ovulation including germinal vesicle migration and breakdown, chromosome condensation and formation of the first polar body **(Patiño & Sullivan, 2002; Nagahama & Yamashita, 2008).**