

Histology and Immunolocalization of Ionocyte Cells in Gill of Juvenile's Grouper (*Epinephelus coioides*)

Pourkhadje, Mohammad Reza¹; Abdi, Rahim^{2*}; Zolgharnein, Hosein³;
Hoseinzade Sahafi, Homauon⁴; Morovvati, Hassan⁵

1- Postgraduated Student in Marine Biology, Faculty of Marine Science, Khorramshahr Marine Science and Technology University, Khuzestan Province, Khorramshahr, Email: pourkhadjemr@yahoo.com

2- Assistance Professor in Histology, Faculty of Marine Science, Khorramshahr Marine Science and Technology University, Khuzestan Province, Khorramshahr, Email: abdir@kmsu.ac.ir

3- Assistance Professor in Marine Biology, Faculty of Marine Science, Khorramshahr Marine Science and Technology University, Khuzestan Province, Khorramshahr, Email: zolgharnine@kmsu.ac.ir

4- Assistance Professor of Iranian Fisheries Research Organization, Tehran Province, Tehran, Email: h_hosseinzadeh@yahoo.com

5- Associated Professor in Histology, Faculty of Veterinary Medicine, Shahid Chamran University of Ahvaz, Khuzestan Province, Ahvaz, Email: hmorovvati@scu.ac.ir

Received Date: February 2011

*Corresponding Author

Accepted Date: May 2011

© 2011 Oceanography All rights reserved.

Abstract

In order to assess the position of ionocyte cells in the gill of juvenile *E. coioides* using immunolocalization method, 10 specimens were prepared and fixed in the bouin's solution for 24 h. After fixation, specimens were dehydrated through a graded ethanol series and embedded in paraffin. Then, the serial sections of 5 μ m were mounted onto the glass slides. The slides were stained by applying H&E methods for histological examination in ten microscopic field. Primary (IgG α 5) and secondary (FITC) antibodies were used for immunohistochemical staining. In this study, fluorescent microscope includes 450- 490 nm filters was used for observation of ionocytes cells. Ionocyte cells are detectable with high frequency of Na⁺, K⁺-ATPase in their basolateral membrane, using immunohistochemical method. In the present study, Na⁺, K⁺-ATPase was identified in the basolateral membrane of ionocyte cells of gill. As was mentioned, ionocyte cells and subsequently Na⁺, K⁺-ATPase could be localized in gill of *E. coioides* using immunohistochemical method. The results showed that ionocyte cells located in base and inter lamellar situation. The presence of enzyme in the basolateral membrane of ionocyte cells, characterized the role of ionocyte cells in osmoregulation.

Keywords: *Epinephelus coioides*, Gill, Ionocyte cells, Na⁺, K⁺-ATPase
