

## عنوان مقاله:

Research Article: Localization of Na<sup>+</sup>-K<sup>+</sup>-ATPase and Na<sup>+</sup>-K<sup>+</sup>- $\gamma$ Cl<sup>-</sup> cotransporter, and Na<sup>+</sup>-H<sup>+</sup> exchanger in the renal system of Walton's mudskipper (*Periophthalmus waltoni*) using immunohistochemistry and histology methods

## محل انتشار:

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## نویسندگان:

- .K. Esfandiari - *Department of Basic Science, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran*
- .M. Babaei - *Department of Clinical Sciences, Faculty of Veterinary Science, Bu-Ali Sina University, Hamedan, Iran*
- .H. Morovvati - *Department of Basic Science, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran*
- .A.M. Tarabi - *Food industry science and engineering, Islamic azad university- Tehran north branch, Tehran, Iran*
- A. Kalantari-Hesari - *Department of Pathobiology, Faculty of Veterinary Science, Bu-Ali Sina University, Hamedan, Iran*

## خلاصه مقاله:

Kidneys play an important role in regulating the balance of water and ions in freshwater and seawater fish. However, complex kidney structures impair a comprehensive understanding of kidney function. In this study, in addition to the investigation of renal histology, Na<sup>+</sup>-K<sup>+</sup>-ATPase, Na<sup>+</sup>-K<sup>+</sup>- $\gamma$ Cl<sup>-</sup> cotransporter (NKCC), and Na<sup>+</sup>-H<sup>+</sup> exchanger (NHE) were localized in the renal system of Walton's mudskipper (*Priophthalmus waltoni*). The kidney samples were fixed and they passed the preparing section and staining stages. The renal tubules were composed of proximal tubules and distal tubules, followed by collecting tubes and finally collecting ducts. The distribution of the Na<sup>+</sup>-K<sup>+</sup>-ATPase immune response varied in different sections of the nephron. The NKCC positioning was reported only in collecting tubes and collecting ducts, and proximal tubes and distal tubes did not respond to the antibody. Immunohistochemical response for NHE<sup>3</sup> localization was detected only at the apex of epithelial cells of proximal tubules and collecting tubes. The distal tubes showed a negative reaction and the collecting ducts showed a weak response to NHE<sup>3</sup> immunolocalization. In conclusion, Na<sup>+</sup>-K<sup>+</sup>-ATPase, NKCC, and NHE were differentially located in the renal system, suggesting that various physiological system operates in the renal system for ionic retention. This study provided valuable information to understand the ion regulation abilities of epithelial cells in various parts of P. waltoni nephrons.

## کلمات کلیدی:

Periophthalmus, Nephrons tubules, Ionic retention, Antibody, Kidney

## لینک ثابت مقاله در پایگاه سیویلیکا:

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