

# The structure and Immunolocalization of Na<sup>+</sup>, K<sup>+</sup>-ATPase in the Kidney Nephron of nude mouse (*Nude BALB / c*)

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## Abstract

The kidney of the mouse is model for the study of the structure and physiology of nephron in mammals, including humans. The laboratory animals, Nude mouse is used frequently as a model in the study of cancer. Due the importance of the relationship between sodium-potassium pump and cancer, the nephron structure and Immunolocalization of Na<sup>+</sup>, K<sup>+</sup>-ATPase in different parts of the kidney were examined in Nude mouse. Six Nude mouse from Pasteur Institute (Amol Branch) were prepared and their kidneys were isolated, then based on the usual histological method, dehydrating and embedding in paraffin were carried out. A number of tissue sections stained by using hematoxylin and eosin, and localization of Na<sup>+</sup>, K<sup>+</sup>-ATPase was performed using immunohistochemistry method. Histological observation showed that the kidney of the Nude mice composed of two parts: cortex and medulla, cortex is the analogue of the human kidney cortex and medulla is the analogue of the human kidney medulla. Immunohistochemistry photographs showed that the presence of Na<sup>+</sup>, K<sup>+</sup>-ATPase, as an indicator of presence of sodium-potassium pump, is different in segments of kidney. The results of this study suggests that Na<sup>+</sup>, K<sup>+</sup>-ATPase intensity in different segments of kidney shows the different function of ions absorption in these segments. Also immunohistochemical method is useful for the changes of Na<sup>+</sup>, K<sup>+</sup>-ATPase presence, due to using of drugs and their side effects on the kidney function.

**Key words:** Na<sup>+</sup>-K<sup>+</sup>-ATPase, Kidney, Nephron, Immunohistochemistry

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