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Histological and histochemical Study of Brunner's glands in Wild Brown Rat (*Rattus norvegicus*)

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Abstract

The goal of the current study is to describe the characteristics of Brunner's glands and their location throughout the wild rat duodenum. Six healthy brown wild rats were purchased from a local animal shop in Baghdad city. Xylazine and ketamine were used to euthanize the experimental animals. Dissection was done, and specimens were obtained from various sections of the duodenum and fixed with 10 % neutral buffered formalin. Routine histological processing procedures were used for samples, and 7 µm sections were prepared and stained with Hematoxylin, eosin, and Alcian blue (2.5 pH) stain to detect neutral mucin. Then, the samples were examined under a light microscope, and images were captured. Various glands were seen in wild brown rats, including mucous-based intestinal glands. The glands were made up of tightly connected acini within the submucosa. These glands were distributed as crowded acinar groups close to the pancreatic duct. However, the most obvious Brunner's glands were mucous type. Nonetheless, the mixed type was also seen close to the pancreatic duct. Sections also showed the extension of glands from mucosa to submucosa and individually drained by a single excretory duct. Additionally, the individual gland ducts progressively expand after penetrating the muscular smooth muscle layer, showing huge pyramids of cells that comprise the secretory units.

Keyword: Histology, Mucous, Brunner's glands , Wild brown Rat.

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