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Normal Morphometric and Morphological Changes in the Colon Wall of White-Breed Rats

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When morphological and morphometric examination of the colon tissue obtained after autopsy from white-bred rats in the control group was carried out, it was determined that the intestine has a normal 4-layer structure.

The mucosa is covered with a single-layer prismatic epithelium, and in the field of view, tall columnar epitheliocytes, goblet-shaped and a large number of undifferentiated cells were visible. The mucosa is represented by a special plate, thin connective tissue layers between the crypts, and the thickness of this tissue in white-bred rats in the control group was on average 3.1-5.3 μm .

The crypts were deep, slightly expanded in the apical part, and their diameter was found to be on average 9.4-9.7 μm in the control group of white outbred rats. Under the microscope, it was found that the crypts were composed of weakly oxyphilic cytoplasm and contained goblet-shaped cells. The number of these goblet cells in each crypt was found to be on average 7-19.

There were few lymphocytes and macrophages in the field of view. An average of 57 lymphocytes were counted in one field of view. The muscular layer of the mucosa has a 2-layer structure: the outer layer is longitudinal (muscle cells) and the inner layer is circular muscles. The cellular composition of the submucosal layer is mainly represented by loose fibrous connective tissue cells, with a small amount of fat and mast cells. The muscular membrane has a typical morphological structure. The outer layer is represented by folded longitudinal, three-ribbed fibers.

Among these bands, a small number of bundles of smooth myocytes were found, and the inner layer was represented by circularly oriented fibers. Between them, loose fibrous connective tissue, blood vessels, and a small amount of lymphatic and nerve fibers were found to be located in the musculo-intestinal tangle. When the submucosa and muscle layer of the colon of the control group of white outbred rats were measured together, their thickness was 492.43 μm .

When microscopic studies of the colon tissue of white outbred rats were performed by staining with alcian blue, characteristic structures were observed that reflect their anatomical and functional properties. In sections, crypts are visible, which are deep extensions of the mucous membrane, which play an important role in the processes of secretion and absorption. The crypts contain goblet cells, stained light blue, responsible for the production of mucous substances to protect against mechanical damage and pathogenic microorganisms. The layer that makes up the mucosa exhibits a variety of cell types and structures, which indicates that the rectum is a complex

organ. These results emphasize the importance of microscopic analysis in understanding the morphology of intestinal structures.

1. Гусакова Е. А., Городецкая И. В. Йодсодержащие гормоны щитовидной железы и защитный эффект глюкокортикоидов при стрессе //Российский физиологический журнал им. ИМ Сеченова. – 2019. – Т. 105. – №. 12. – С. 1535–1545.
2. Гусакова Е. А., Городецкая И. В. Влияние глюкокортикоидных гормонов на функцию щитовидной железы //Известия Национальной академии наук Беларуси. Серия медицинских наук. – 2021. – Т. 18. – №. 1. – С. 117-126.
3. Кащенко С. А., Мосин Д. В. Структурные и органомерические изменения щитовидной железы крыс в условиях иммуносупрессии и иммуномодуляции на ранних сроках воздействия //Ульяновский медико-биологический журнал. – 2019. – №. 1. – С. 110-118.
4. Клименкова И. В. и др. Морфометрические и некоторые гистохимические показатели щитовидной железы крыс. – 2014.
5. Ларина И. И. и др. Синдром первичной резистентности к глюкокортикоидам: сложности диагностики (клинический случай и краткий обзор) //Problems of Endocrinology. – 2024. – Т. 70. – №. 1. – С. 30.
6. Astiz M, Heyde I, Fortmann MI, Bossung V, Roll C, Stein A, et al. The circadian phase of antenatal glucocorticoid treatment affects the risk of behavioral disorders. Nat Commun. 2020;11(1):3593–3593.