

**IMMUNOHISTOCHEMICAL ANALYSIS OF
MORPHOLOGICAL CHANGES IN LUNG TISSUE IN
VARIOUS DEGREES OF CHEMICAL BURNS OF THE
DIGESTIVE TRACT**

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Abstrakt. *In this study, the experimental digestive tract was examined immunogystochemically for morphological changes occurring in lung tissue in different levels of chemical burns. Micropreparates made from lung tissue structures isolated from them were examined on an immunogystochemical Ki-67 marker and reported results based on the expression level of the same marker.*

Keywords: *lung, digestive tract, Ki-67 marker, cell proliferation, proliferation index.*

**HAZM TRAKTI TURLI DARAJADAGI KIMYOVIY
KUYISHLARIDA O'PKA TO'QIMASIDA YUZAGA
KELADIGAN MORFOLOGIK O'ZGARISHLARNING
IMMUNOGISTOKIMYOVIY TAHLILI**

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Annotatsiya. Ushbu tadqiqotda eksperimental hazm nayi turli darajadagi kimyoviy kuyishlarida o'pka to'qimasida yuzaga keladigan morfologik o'zgarishlar immunogistokimyoviy usulda tekshirilgan. Ulardan ajratib olingan o'pka to'qimasi tuzilmalaridan tayyorlangan mikropreparatlar immunogistokimyoviy Ki-67 markerida tekshirilgan va shu markerning ekspressiyalanish darajasiga qarab olingan natijalar haqidagi ma'lumotlar keltirilgan.

Kalit so'zlar: o'pka, hazm trakti, Ki-67 marker, hujayra proliferatsiyasi, proliferatsiya indeksi.

**ИММУНОГИСТОХИМИЧЕСКИЙ АНАЛИЗ
МОРФОЛОГИЧЕСКИХ ИЗМЕНЕНИЙ ЛЕГОЧНОЙ
ТКАНИ ПРИ РАЗЛИЧНЫХ СТЕПЕНЯХ ХИМИЧЕСКИХ
ОЖОГОВ ПИЩЕВАРИТЕЛЬНОГО ТРАКТА**

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Аннотация. В этом исследовании морфологические изменения, происходящие в легочной ткани при химических ожогах различной степени тяжести в экспериментальной пищеварительной трубке, были исследованы иммуногистохимически. Выделенные из них микропрепараты, изготовленные из структур легочной ткани, исследовались на иммуногистохимическом маркере Ki-67 и приводились данные о полученных результатах в зависимости от степени экспрессии этого маркера.

Ключевые слова: легкие, пищеварительный тракт, маркер Ki-67, пролиферация клеток, индекс пролиферации.

Relevance of the study. Chemical burns of the digestive tract are still a common disease in the world, especially in young people, with a relatively high incidence rate and an increase in the number of complications and disabilities that arise as a result. The lack of information on morphological changes in lung tissue in various degrees of burns of the digestive tract in foreign and domestic sources remains one of the topical areas of this topic.

Purpose of the study: to determine the level of expression of the Ki-67 marker in morphological changes in lung tissue in experimental chemical burns of various degrees of the digestive tract.

Materials and methods of the study: For the study, 30 white outbred rats of both sexes aged 1-3-6 months were isolated and experimental digestive tract burns were induced in them under the influence of low (6%) and high (70%) concentrations of acetic acid. For immunohistochemical study of lung tissue samples from white-bred rats, 40 prepared histological preparations were isolated. After cutting the tissue sections obtained for immunohistochemical staining at a thickness of 4-6 μm using a microtome, they were placed on a slide and covered with a coverslip. The obtained tissues were subjected to the avidin-biotin immunoperoxidase method using the method of dehydration and deparaffinization of sections. To block endogenous peroxidase, the preparation was placed in a 3% hydrogen peroxide solution for 10 minutes. After washing the preparation with a solution of tris-NaCl-buffer pH 7.6, the cells were stained with the Ki-67 marker to determine their proliferative activity and stained using the DAB+ chromogenic method to determine their expression. The stained preparations were examined under a microscope. To evaluate the immunohistochemical results, morphometric examinations were performed in 5 fields of view at 200-400x magnification using QuPhat 4.4.0 software. The

percentage of positively expressed cells in the selected field was calculated relative to the total number of cells in the total field. Expression was assessed as 20% (low expression), 20-60% (moderate expression), and more than 60% (high expression).

Research results. Determination of Ki-67 indicates tumor cells in the division phase of the cell cycle. This allows us to understand how actively and rapidly tumor cell division occurs, and therefore the growth rate of the tumor, assess the risk of metastasis, determine the tactics of therapy and the possible response to it, and the prognosis of the disease.

The proliferative activity of a cell depends on the different phases of the cell cycle. The cell cycle is the period of life and existence of a cell, which lasts from the moment of its emergence from the mother cell to the end of its life. This phenomenon can be explained by considering the period from the emergence of the cell to its death. The cell cycle can be divided into the following phases: presynthetic phase (G1), synthetic phase (S), postsynthetic phase (G2) and the period of cell division, i.e. mitosis. The presynthetic phase lasts longer and in this phase the cell grows, develops, in which RNA is synthesized and organelles are formed. The synthetic phase (S) is during this period DNA replication takes place. In the (G2) phase, the cell prepares for division and the proteins and ATP necessary for division are synthesized. The mitotic phase is the period from the cell's division to the next division. In addition, the immunohistochemical marker Ki-67 is also used to assess the proliferative activity of cells in tumor processes. This marker is evaluated in percentages and indicates the degree of cell division activity.

Conclusion 15 white outbred rats aged 1-3-6 months were selected for the study and in order to determine the changes that occur in the lung tissue after the digestive tract was burned under the influence of 6% and 70% concentration of acetic acid, the immunohistochemical results of micropreparations isolated from 15 white outbred rats with the Ki-67 marker

were studied. The results obtained revealed the expression of the immunohistochemical Ki-67 marker in the dermis and hypodermis layers of the skin.

In the study, the expression of the immunohistochemical Ki-67 marker in the lung tissue of 6-month-old white outbred rats after the digestive tract was burned under the influence of 70% concentration of acetic acid gave the highest indicator, this indicator was 20.17% (medium expression).

LIST OF REFERENCES

1. Блинова С.А., и др. Морфофункциональные особенности нейроэпителиальных телец в респираторном отделе легких // Вестник науки и образования. - 2020. № 10 (88). Часть 3. - С. 82-85.
2. Ермаченкова Е.И., и др. Эндоскопическая диагностика и лечение химических ожогов желудочно-кишечного тракта и дыхательных путей // НМП. 2012. №3. С.64-68
3. Зотов П.Б., и др. Уксусная кислота среди средств суицидальных действий // Суицидология. 2020. №1 (38).
4. Казачкосмертива А.А. Химико-токсикологический анализ отравления уксусной кислотой //Актуальные вопросы фармацевтических и естественных наук. – 2020. – С. 116-118.
5. Константинова Д. А., и др. Морфологические изменения в различных тканях человека при отравлении уксусной кислотой // Вестник новых медицинских технологий. Электронное издание. 2012. №1.