

REVIEW OF THE SCIENTIFIC ADVISER

*on the applicant **Abzhaparova Balzhan Seidehanovna**, who has carried out the dissertation work: 'The role of genotypes and subgenotypes of hepatitis B virus and hepatitis D virus in the progression of chronic viral hepatitis in Kazakhstan', submitted for the degree of Doctor of Philosophy (PhD) in the speciality 6D110100- 'Medicine':*

It gives me great pleasure writing review of this dissertation work. This dissertation work aimed at determining the prevalence of genotypes and subgenotypes of hepatitis B and B with delta agent in patients with chronic viral hepatitis B and D at different stages of liver fibrosis and their impact on the clinical course, allowing to improve the diagnosis of progression to cirrhosis and the development of hepatocellular carcinoma in patients in this category.

During the period of work on the thesis she showed herself as a responsible, purposeful, initiative, and able to clearly define the goals and objectives of the researcher. Balzhan Seidekhanovna has sufficiently mastered the ability to analyse and summarise the obtained data, methods of statistical processing of the obtained data and scientific information search. All the material was collected and processed by the applicant independently.

The thesis is set out on 149 pages of typewritten text and standardly consists of normative references, definitions, notations, and the main part, description of materials and methods of research, conclusions and list of used sources. The introduction fully discloses the relevance of the topic. At the analysis of the dissertation work it is established that doctoral student Abzhaparova B.S. clearly defined scientific novelty and the main provisions put forward for defense, thus used modern methods in the decision of the set tasks allowed to formulate conclusions and conclusions argumentatively and with a greater measure of evidence. The validity and reliability of the research results are confirmed by a sufficient amount of analysed both theoretical and practical materials.

Balzhan Seidehanovna constantly improves her qualification level, underwent training abroad (Tashkent Medical Academy) and took part in international conferences.

Abzhaparova B.S. had published 4 printed works, including: 3 publications in periodicals of Kazakhstan, recommended by the Committee on quality assurance in the field of education and science MES RK, 1 article in the indexed in the information base Scopus Citoscore with a percentile of 61%, 7 publications in the materials of international and domestic conferences. 1 monograph was published on the subject of the thesis. 1 author's certificate was received: "Algorithm of patient management and recommendations before and after liver transplantation". No. 19064 from '29' June 2021.

Abzhaparova B.S. is disciplined, responsible, executive, demanding to herself and to others. Due to her benevolence, responsiveness, responsible approach to her duties, purposefulness, initiative she deservedly enjoys respect in the team.

On the basis of the data of the dissertation work, my personal knowledge of the candidate, academic achievements and personality of the scientist, I think that Mrs Abzhaparova Balzhan Seidehanovna is ready to defend this dissertation.

Sincerely,

Assoc. Prof. Tomas Vanagas, MD, PhD

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