



## FEEDBACK

of foreign scientific consultant DSc., Professor Pavel Drašar from University of Chemistry and Technology, Prague for the dissertation (PhD) work of Kishkentayeva Anarkul Serikovna on the topic: “Development of a pharmacologically active substance technology based on Grosheimin and its standardization” submitted for a PhD degree (PhD ) on the specialty 6D074800 - Technology of pharmaceutical production

The thesis work of Kishkentayeva Anarkul is devoted to an urgent and priority task - the development of pharmaceutical science and industry in the Republic of Kazakhstan is a search for approaches to more fully utilize their own resources of wild-growing and cultivated plant raw materials and the creation on its basis of original herbal remedies that are affordable, at the same time same in quality as their competitive counterparts.

Under my leadership, PhD student Kishkentayeva Anarkul completed research work on the technology of sesquiterpene lactone of grosheimin extraction from vegetable raw material of the *Chartolepis intermedia* Boiss. using ultrasonic extraction. She experimentally selected the optimal conditions for ultrasonic extraction of *Chartolepis intermedia* Boiss., and also based on the selected grossheimin a number of new derivatives were obtained, the structure of which was established on the basis of mass, NMR <sup>1</sup>H, <sup>13</sup>C spectra.

The author of the dissertation personally carried out all the experimental work on the development of the technology for the isolation of grosheimin from vegetable raw materials of *Chartolepis intermedia* Boiss. and the standardization of a pharmacologically active substance based on grosheimin.

Kishkentayeva A.S. completed the full amount of planned research dissertation work. Novelty and practical significance does not cause doubts in the results of this work. She has established herself as a promising, responsible and qualified specialist.

The results are published in foreign scientific journals included in the Scopus and Web of Science database.

The work has practical implementation and complies with the requirements for dissertations for the degree of Doctor of Philosophy, and the author of the dissertation is to be awarded the degree of Doctor of Philosophy (PhD) in the specialty 6D074800- “Technology of pharmaceutical production”.

**Supervisor, Prof. RNDr. Pavel Drasar, DSc., FRSC, CSci, EurChem**

