

## STATEMENT OF OPINION

**by Assoc. Prof. Stanislava Dimitrova Ivanova, PhD**  
Department of Pharmacognosy and Pharmaceutical Chemistry  
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on dissertation work for awarding the educational and scientific degree "Doctor"  
professional field 7.3 Pharmacy  
higher education field of 7. Healthcare and Sport  
doctoral program Pharmaceutical chemistry

**Author:** Ivelin Rosenov Iliev

Department of Pharmaceutical Chemistry, Faculty of Pharmacy. Medical University – Varna

**Form of dissertation:** regular form of education

**Department:** Pharmaceutical Chemistry

**Thesis:** "Synthesis, characterisation and toxicity studies of bexarotene esters"

**Scientific supervisors:**

Assoc. Prof. Dr. Svetlana Fotkova Georgieva, MScBiotech, PhD, Department of Pharmaceutical Chemistry, Faculty of Pharmacy. Medical University – Varna

Assoc. Prof. Yana Koleva Koleva, PhD, Department of Chemistry, Faculty of Natural Sciences, University "Prof. Asen Zlatarov" - Burgas

### 1. General introduction of the procedure and the doctoral student

The presented materials on paper and electronic carrier completely correspond to the Regulations for Academic Development in the Medical University - Varna, 2018, Art. 69 and include the following documents:

- Order for checking off with the right of defence - P-109-114/09.02.2023;
- A dissertation work in 1 paper copy and 1 electronic copy;
- A summary of dissertation in Bulgarian and English in paper and electronic PDF carrier;
- A curriculum vitae in European format signed by the doctoral student;
- A list of publications and research papers related to the dissertation topic;
- Copies of the publications and research papers related to the dissertation topic;
- A list of participations in scientific forums;

- A list of registered citations;
- A record for passed exam of the doctoral minimum;
- A copy notarially attested higher education diploma;
- A declaration for originality and reliability of the applied documents;
- A certificate for credits received from the common curriculum of the Doctoral School of Medical University of Varna;
- Other documents related to the procedure.

The presented dissertation is written on 171 pages. It is structured according to the standard model including Introduction, Theoretical review, Aim and tasks, Experiments, Results and discussion, Conclusions, Contributions, References, and Appendixes. It is illustrated with 37 tables, and 61 figures. Ivelin Rosenov Iliev has included 4 scientific articles.

## **2. Relevance of the subject**

The topic of the project-dissertation is up-to-date. It is related to the synthesis, analytical characterisation and biological activity of bexarotene derivatives. Bexarotene is a molecule that finds application in the treatment of advanced stage cutaneous T-cell lymphoma. The studies described in this work would help future research about the potential of the novel synthesised compounds.

## **3. Problem analysis**

In forming the *Theoretical review*, it is noteworthy that Ivelin Iliev used 213 literary sources. The in-depth and detailed knowledge of the scientific problem is evident both from the detailed and well-structured literature review, and from the analysis of the presented facts and the conclusions made. The *aim* is well-defined and the studies associated with the six tasks are carefully designed.

## **4. Evaluation of the research publications and personal participation of the doctoral student in the dissertation**

Ivelin Iliev is the first author in the attached 1 of 4 *scientific publications* on the topic of the dissertation. The total number of points of the doctoral student by group of indicators D is 31. The minimum required points for group of indicators D for obtaining the scientific degree "Doctor" in area 7. Health and Sports, according to the Act for the Development of the Academic Staff in the Republic of Bulgaria (ADASRB), are 30. I am fully convinced that the personal participation of Ivelin Iliev, in the experimental part, is indisputable.

## **5. Recommendations and remarks**

I have several remarks about this work. My first remark is about the presented figure of the

performed thin layer chromatography (TLC) - it is not a high quality figure. My recommendation is to optimise and validate this TLC method.

My second remark is about the presented HPLC method. A number of flaws are detected that makes the method not suitable for qualitative and quantitative analysis: there is a lack of data on the peak resolution, efficiency and selectivity that this method provides. Some of my observations include: figure 17 shows an asymmetric peak about 3 minutes wide (a peak with similar characteristics is not acceptable), figures 20 and 21 also show asymmetric peaks, some with wide bases.

My recommendation is that Ivelin Rosenov Iliev should optimise and validate the described method. My remarks do not underestimate this work.

## **6. Evaluation of the professional and personal qualities of the doctoral student**

The *Experiments* and *Results and Discussion* sections follow good logical sequence. The detailed description of some of the methods allows to be reproduced by other scientists. The contribution and the significance of the conducted research and the obtained results are systematised in the conclusions made, and the contributions formulated by the PhD student.

## **CONCLUSION**

Ivelin Rosenov Iliev has successfully developed a dissertation in the scientific specialty "Pharmaceutical chemistry". The dissertation consists of scientific and scientific-applied results, which are original contributions to science and correspond to the Act for Development of the Academic Staff in the Republic of Bulgaria (ADASRB), the Regulations for the Academic Development in MU-Varna, 2018.

The dissertation shows that the PhD student has in-depth theoretical knowledge and professional skills in the scientific specialty "Pharmaceutical Chemistry".

**I propose to the honourable scientific jury to award Ivelin Rosenov Iliev the educational and scientific degree Doctor** in the doctoral program Pharmaceutical chemistry, professional field 7.3 Pharmacy, Higher education field 7. Healthcare and Sport.

07.04.2023

Reviewer: .....

**Assoc. Prof. Stanislava Ivanova, PhD**

