Appendix 12b

REPORT

of dissertation for the acquisition of:

educational and scientific degree " **doctor** "	X
scientific degree **"Doctor of Science"**	
	the true is indicated by the sign "X"

Author of the dissertation:

		Dilyana	Vasileva	Dimitrova	UCTM
academic position	scientific degree	name	middle name	last name	workplace

Topic of the dissertation:

SYNTHESIS AND BIOLOGICAL ACTIVITY OF TEMPORIN ANALOGUES

Scientific area:

5	Technical sciences
code	name

Professional area:

5.11	Biotechnology
code	name

Scientific specialty:

Technology of biologically active substances

The report was written by:

Assoc. prof.	PhD	Dilyana	Petrova	Nikolova	Sofia University “St. Kliment Ohridski”
academic position	scientific degree	name	middle name	last name	workplace

1. Meeting the minimum requirements under the Regulations:

A) The candidate meets the minimum requirements	20 points	X
B) The candidate doesn’t meet the minimum requirements	0 points	
		one of the answers given is marked with the sign "X"

It is mandatory to fill in if answer B is marked. The publication activity of the candidate is analyzed. The response of the results achieved (quoted) is analyzed.
The candidate for the acquisition of the ONS Doctor in Professional area 5.11 Biotechnology Dilyana Dimitrova has presented a Dissertation and a total of 3 scientific publications, which are in scientific journals,

referenced and indexed in the world databases with scientific information. The total number of points for the publication, according to the requirements of the national legislation is 33.3(3). The required minimum of 80 points has been met, with a total number of 83.3(3) points.

2. The relevance of the topic of the dissertation:

A) The topic is relevant and new (there are no known results on the topic by other authors)	8 points	
B) The topic is relevant and results from other authors are known	6 points	X
C) The topic is not relevant, but results from other authors are known	2 points	
D) The topic is not relevant and no results from other authors are known	1 point	
E) The topic does not correspond to the level of dissertation	0 points	
		one of the answers given is marked with the sign "X"

The evaluation of the relevance of the dissertation must be substantiated
The topic addressed in this dissertation is highly relevant, as it involves the study of biologically active substances from the peptide group that serve as alternatives to widely used antibiotics. The research and development of new analogues of such bioactive substances are a key focus of contemporary scientific research due to widespread antibiotic resistance and the emerging need of alternatives. An interesting group of biologically active peptides as temporins has been selected, which have been the subject of intensive research over the past 10–15 years. The work investigates temporin A, its existing and newly obtained analogs, with respect to key biological activities such as antimicrobial activity, cytotoxicity, phototoxicity, and antiproliferative activity. The topic of the dissertation is considered highly relevant and is based on previous research.

3. Type of research:

A) Theoretical	4 points	
B) Applied	4 points	X
C) Theoretical with application elements	4 points	
D) It does not correspond to the level of dissertation	0 points	
		one of the answers given is marked with the sign "X"

The level of research must be substantiated if answer D is marked.
Research on antimicrobial peptides and their newly synthesized analogs has significant practical applications, involving the identification, characterization and assessment of the potential for use of new compounds with antimicrobial and other related activities.

4. Objectives of the research:

A) Realistic and of scientific and / or applied interest	8 points	X
B) Realistic, but not of scientific and / or applied interest	3 points	
C) Unattainable (unrealistic)	0 points	

		one of the answers given is marked with the sign "X"

Objectives must be specified. The type of the set objectives must be justified.
The aim of this dissertation is to synthesize new structural analogs based on the antimicrobial peptide temporin A with potential antibacterial activity and to investigate their biological properties. To achieve this objective, the following tasks have been set: obtaining a series of newly synthesized peptides that are analogs of temporin A; determination of their stability under simulated physiological conditions; evaluation of their antimicrobial activity, cytotoxicity, phototoxicity, and antiproliferative activity, and analyzing the relationship between structural changes and biological activities. The research objectives and tasks are based on a detailed review of the scientific literature, and corresponding experimental results have been obtained and published in high-impact scientific journals. This confirms that realistic goals have been set for the dissertation, and the results achieved may be of significant scientific and applied interest.

5. Contributions of the dissertation:

A) With lasting scientific and / or applied response, they form the basis for new research and applications	20 points	
B) They are of significant scientific and / or applied interest, complete and / or summarize previous research	16 points	
C) They are of scientific and / or applied interest	12 points	X
D) Lack of significant contributions	8 points	
E) Lack of contributions	0 points	
		one of the answers given is marked with the sign "X"

Contributions must be specified. The type of results achieved must be justified.
In the dissertation 9 conclusions and 4 main contributions, with the fourth contribution comprising three elements were identified. The defined contributions are both scientific and applied in nature and were related to the obtaining of 9 newly synthesized analogs of the antimicrobial peptide temporin A and 3 newly synthesized analogs by incorporation of natural amino acids. An important scientific and applied contribution is the determination of the stability and biological activities of the obtained peptides and the assessment of their application potential. The fourth contribution significantly overlaps with some of the conclusions, and a more specific definition of the the applied nature of the results obtained is recommended. Overall, the achieved results and contributions are part of research related to the search for alternative bioactive substances, complementing and expanding upon previous studies on bioactive peptides.

6. Conclusion

A) The evaluation of the dissertation is **POSITIVE**	This evaluation is assigned to a total number of at least 40 points	X (50 points)
B) The evaluation of the dissertation is **NEGATIVE**	This evaluation is assigned to a total number below 40 points	
		one of the answers given is marked with the sign "X"

To be filled in at the request of the member of the scientific jury

The present dissertation addresses an actual topic, the achieved results and the publications fully meet the requirements of the Act for the Development of the Academic Staff in Republic of Bulgaria for the award of the academic degree “Doctor”. Therefore, I would recommend that the academic jury award Diliana Vasileva Dimitrova the academic degree of “Doctor” in Professional area 5.11 Biotechnology, scientific specialty Technology of Biologically Active Substances.

04.06.2026	The report was written by:	
date		signature