

STATEMENT



Subject: academic position of "Associate Professor" in "Pharmacognosy and Phytochemistry" at the Department of Pharmacognosy and Pharmaceutical Chemistry of the Faculty of Pharmacy, Medical University of Plovdiv, announced in the State Gazette, issue 59/11.07.2023.

Reviewer: Assoc. Prof. Niko Joseph Benbasat, PhD - Department of Pharmacognosy and Pharmaceutical Chemistry, Faculty of Pharmacy, Medical University of Plovdiv.

By order № P 3080/24.10.2023 of the Rector of MU-Plovdiv I am appointed as a member of the scientific jury in a competition for the academic position of "Associate Professor" in Pharmacognosy and Phytochemistry, area 7. Health and Sport, professional field 7.3. Pharmacy, at the Department of Pharmacognosy and Pharmaceutical Chemistry for teaching in Bulgarian and English in the discipline "Pharmacognosy and Phytochemistry", announced in the State Gazette, issue 59/11.07.2023.

Two candidates have been admitted to the competition - chief asst. prof. Diana Karcheva-Bahchevanska, PhD and chief asst. prof. Paolina Kancheva Lukova-Katsarova, PhD, both of them are members of the Department of Pharmacognosy and Pharmaceutical Chemistry, Faculty of Pharmacy, MU-Plovdiv.

I. Analysis of candidates' career profile

1. The candidate chief asst. prof. Diana Karcheva-Bahchevanska, PhD graduated from secondary education in 2003 at the Secondary School "St. Kliment Ohridski", Plovdiv - natural sciences profile with intensive study of English and higher education in 2006 in the specialty "Assistant Pharmacist" with acquired degree "Professional Bachelor" in Medical College at MU-Plovdiv. She completed her higher education in the specialty "Pharmacy" with the degree "Master of Pharmacy" in 2012 at the Faculty of Pharmacy at MU-Plovdiv. In 2018, she successfully defended her PhD in the Pharmacognosy and Phytochemistry PhD program on the topic "Study of functional properties of polyphenolic extracts in species of the genus *Vaccinium* L. on enzymes of carbohydrate metabolism". In 2019, she obtained a specialty in "Medicinal plants and phytopharmaceuticals". The candidate Diana Karcheva-Bahchevanska worked as an assistant pharmacist in a pharmacy in the interval 2006-2011 and as a master pharmacist in the period 2012-2016, she was a researcher at the "Center of Technology" at the University of Plovdiv "Paisii Hilendarski" - 2015-2018. Since 2012 she has held the academic position of "Assistant" and since 2018 - "Chief Assistant" at the Department of Pharmacognosy and Pharmaceutical Chemistry at MU-Plovdiv, where she works today.

2. The candidate chief asst. prof. Paolina Kancheva Lukova-Katsarova, PhD graduated from secondary education in 2006 at the Language School "Ivan Vazov" - Plovdiv with intensive training in Spanish, German and Russian and higher education, specialty in Pharmacy in 2012 with an acquired degree of Master Pharmacist at the Faculty of Pharmacy, Medical University of Plovdiv. In 2018 she successfully defended her PhD in Pharmacognosy and Phytochemistry on the

topic "Study of prebiotic potential of polysaccharides in some *Plantago* L. species distributed in Bulgaria". In the same year, 2018, she obtained the specialty "Medicinal plants and phytopharmaceuticals". The candidate Paolina Kancheva Lukova-Katsarova worked as a Master Pharmacist in a pharmacy in the interval 2012-2017. Since 2012 she has held the academic position of "Assistant" and since 2018 - "Chief Assistant" at the Department of Pharmacognosy and Pharmaceutical Chemistry at MU- Plovdiv, where she works today.

II. General description of the materials submitted to the competition.

Both candidates participating in the competition are chief assistant professors and hold a PhD degree and specialty in the scientific field of Pharmacognosy and Phytochemistry. They both have presented monographs and have also participated in national scientific and educational projects. They have an established scientific and creative authority. They report contributions of scientific and applied nature.

1. The candidate chief asst. prof. Diana Karcheva-Bahchevanska, PhD participated in the competition with: a monograph and a total of 30 publications, of which 20 are in scientific publications, refereed and indexed in Scopus, and 16 of them are in journals with Clarivate Analytics impact factor. The total number of points for the candidate in Group D (concerning publication activity) is **338.43** points, of which **217.43** points are from refereed publications. The total number of citations and reviews of the candidate is 141, of which 100 in scientific journals refereed and indexed in Scopus and Web of Science. The candidate has participated in 10 national research projects (2 of which were funded by the Bulgarian National Science Fund) and 2 educational projects with European funding. He is a reviewer of 8 scientific articles in refereed scientific journals, 7 of them with IF.

2. The candidate chief asst. prof. Paolina Kancheva Lukova-Katsarova, PhD participated in the competition with a total of 34 scientific papers, 21 of which in scientific journals, refereed and indexed in Scopus and Web of Science, and 18 of them are in journals with Clarivate Analytics impact factor. The total number of points for the candidate in Group D (concerning publication activity) is **329.84** points, of which **187.09** points are from refereed publications. The total number of citations and reviews is 278, of which 238 are refereed and indexed in Scopus. She has participated in 4 national research projects (1 of which was funded by the Bulgarian National Science Fund) and 3 educational projects with European funding.

III. Evaluation of the candidates' scientific works for the overall academic development

The candidates Karcheva-Bahchevanska and Lukova-Katsarova participate in the competition with a total of 9 joint publications with the numbers respectively:

- of the candidate **Karcheva-Bahchevanska** from the "List of publications in scientific journals, refereed and indexed only in Scopus and/or Web of Science, respectively 7, 8, 14, 15, 16, 17, 18, 19 and 20.

- of the candidate **Lukova-Katsarova** from the "List of publications in scientific journals refereed and indexed only in Scopus and/or Web of Science", respectively 9, 10, 12, 16, 17, 18 and from

the "List of publications in non-refereed peer-reviewed journals or published in edited collective volumes", respectively publications 11, 12 and 13.

I accept that the participation of both candidates in the above publications is equal.

III. 1. Evaluation of publication activity:

1. To the Candidate of chief asst. prof. Diana Karcheva-Bahchevanska, PhD:

Publications in scientific journals, refereed and indexed in Scopus and/or Web of Science only:

Excluding the joint publications of the two candidates, I accept and highly value publications 1-3, 5, 6, and 9-13, which are in significant scientific journals with high overall IF.

Publication 4. *Kozhuharov, V.R., Ivanov, K., Karcheva-Bahchevanska, D., Prissadova, N., Ivanova, S. Development and Validation of Gas Chromatography-Mass Spectrometry Method for Quantification of Sibutramine in Dietary Supplements. Processes 2023, 11, 2337.*

I believe it is related to research in another area of pharmaceutical science. For this reason, I am not reviewing it.

Of the publications in non-refereed peer-reviewed journals or published in edited collective volumes, after reduction of the publications common to both candidates, I assess publications numbered 1-6 as significant and relevant to the subject matter of the announced competition.

2. To the Candidate of chief asst. prof. Paolina Kancheva Lukova-Katsarova, PhD

Publications in scientific journals, refereed and indexed only in Scopus and/or Web of Science:

Excluding the total publications of the two candidates, I accept and value highly publications 4, 5, 11, 13-15 that are in significant scientific journals with high overall IF.

For publications 1-3 and 6-8, without underestimating their scientific weight, I believe that they are related to research in other areas of pharmaceutical science, they lack or are too limited in the pharmacognostic part and have no direct relevance to the announced competition in Pharmacognosy and Phytochemistry, therefore I do not review them.

Publication 1. *Lukova P, Apostolova E, Baldzhiyeva A, Murdjeva M, Kokova V. Fucoidan from *Ericaria crinita* Alleviates Inflammation in Rat Paw Edema, Downregulates Pro-Inflammatory Cytokine Levels, and Shows Antioxidant Activity. Biomedicines. 2023; 11 (in press).*

The publication does not contain a phytochemical section, only plant material is provided that was previously collected and was the subject of a study described in another paper. I consider that the article has weight in another direction.

The same applies to publications:

Publication 2. *Lukova P, Katsarov P. Contemporary Aspects of Designing Marine Polysaccharide Microparticles as Drug Carriers for Biomedical Application. Pharmaceutics. 2023;15(8): 2126.*

It concerns the manufacture of dosage forms with commercial products - excipients and does not contain a pharmacognostic part.

Publication 3. *Lukova P, Katsarov P, Pilicheva B. Application of Starch, Cellulose, and Their Derivatives in the Development of Microparticle Drug-Delivery Systems. Polymers. 2023; 15: 3615*

The publication is entirely technological and has no pharmacognostic part.

Publication 6. *Cabrera-Barjas G, Becherán L, Valdés O, Giordano A, Segura R, Bravo-Arrepol G, Durán-Lara EF, Cea J, Berg A, Castaños J, Rodríguez-Llamazares S, Fuentes G, Katsarov P, Lukova P, Delattre C. Effect of cellulose nanofibrils on vancomycin drug release from chitosan nanocomposite films. European Polymer Journal. 2023; 197: 112371.*

In the publication in question, commercial fucoidans were used for technology studies, without the pharmacognostic part.

Publication 7. *Penkov D, Lukova P, Manev H, Dimitrova S, Kassarova M. Polymer Tablet Matrix Systems for the Controlled Release of Dry Betula pendula Leaf Extract. Polymers. 2023;15(17): 3558.*

The publication, in its minimal pharmacognostic part, discusses the preparation of extracts by the method of spray drying, which is generally known as a fact.

Publication 8. *Jafari S, Khodaensaf F, Delattre C, Bazargan V, Lukova P. Mesoporous Starch Cryoaerogel Material as an Emerging Platform for Oral Drug Delivery: Synthesis and In Vitro Evaluation. Gels.*

I consider this publication to be entirely in the field of Pharmaceutical Technology and not in the field of Pharmacognosy and Phytochemistry.

The candidate's other publications are of serious scientific weight, and I highly appreciate them on merit.

Of the publications in **non-refereed** peer-reviewed journals or published in edited collective volumes, after reduction of the publications common to both candidates (11-13), I evaluate publications numbered 1, 5-10 as significant and relevant to the topic of the announced competition.

For the same reasons stated above, I do not referee works from the list of:

"Publications in non-refereed peer-reviewed journals or published in edited collective volumes", namely publications numbers 2, 3 and 4, as they are not in the scope of the competition and I do not evaluate them.

Publication 2. *Simeonov P, Lukova P, Pilicheva B. Pectin-based Drug Formulations for Gastrointestinal Targeted Delivery. Science and Youth. 2023; 109-115. ISSN 2683-0922 -10*

The publication is entirely in the field of pharmaceutical technology, some facts are discussed in the field of pharmacognosy.

Publication 3. *Tsormpatzian A, Lukova P, et al. Recent Advances in the Formulation of Polysaccharide-based Microparticles Using Jet Break-up and Microfluidic Techniques. Science and Youth. 2023; 116-121. ISSN 2683-0922.*

Publication 4. *Lukova P. Utilization of pectin as a polysaccharide microcarrier for drug delivery. World Journal of Biology Pharmacy and Health Sciences. 2023; 15(02): 253-262*

Published chapters in collective monographs - 3 pcs.

III. 2. Analysis of candidates' scientific activity

1. chief asst. prof. Diana Karcheva-Bahchevanska, PhD

The scientific activity of the candidate Karcheva-Bahchevanska can be summarized on the basis of an overall analysis of the scientific papers - a total of 30, of which 1 is in a different field from the topic of the competition and as a result of the reduction made 19 are in scientific journals, refereed and indexed in Scopus, and 15 of them are in journals with IF according to Clarivate Analytics (sum-marized impact factor IF = 51.45). The total number of citations and reviews of the candidate is 141, of which 100 - in scientific journals refereed and indexed in Scopus and Web of Science. H-index (Scopus) = 6. The scientific results have been presented at a total of 9 international and 9 national forums. There are also serious contributions of scientific and applied nature, as well as a monograph.

2. chief asst. prof. Lukova-Katsarova, PhD

The scientific activity of the candidate Lukova-Katsarova can be summarized on the basis of an overall analysis of the scientific papers - 34 in total, of which 6 (of the refereed) and 3 (of the non-refereed) papers are in a different field from the topic of the competition. As a result of the made reduction, I report a total impact factor IF = 39.781 The total number of citations and reviews of the candidate, revised according to the correction and not accepting the citation from the article (Katsarov PD, Pilicheva BA, Manev HM, Lukova PK, Kassarova MI. Optimization of Chitosan Microspheres Spray Drying via 32 Full Factorial Design. Folia Med (Plovdiv) 2017;59(3):310- 317.) are 266, of which 226 citations and reviews in scientific journals refereed and indexed in Scopus and Web of Science. The scientific results have been presented at a total of 11 international and 13 national forums. There are also major contributions of scientific and applied nature, as well as a monograph.

In the presented table are summarized the overall scientific metrics of the candidates by total number of points obtained from publications in refereed, non-refereed scientific journals and chapters in collective monographs.

Candidate:	Referenced publications (number)	Total IF/Total points	Unrefereed publications number/points	Chapter in collective monograph.	Total no. points
Karcheva-Bahchevanska	19	51.45/205.43	10/121	-	326.43
Lukova-Katsarova	12	39.78/97.09	10/91	4.25	192.34

According to the regulations (indicator 'G') of the Medical University of Plovdiv, the minimum points must be 210. According to this indicator, respectively, chief asst. prof. Diana Karcheva-Bahchevanska, PhD received 326.43 points, and chief asst. prof. Paolina Kancheva Lukova-Katsarova, PhD - 192.34 points. The points of chief asst. prof. Lukova-Katsarova, PhD in this indicator do not correspond to the minimum national requirements and the requirements of MU-Plovdiv.

III. 3. Participation in national scientific and educational projects

1. Candidate Karcheva-Bahchevanska has participated in **12** projects (10 national research projects, 2 of which were funded by the National Research Fund and 2 educational projects with European funding). The candidate is the leader of one of the scientific projects.
2. Candidate Lukova-Katsarova has participated in **7** (4 national research projects, 1 of which was funded by the Bulgarian National Science Fund and 3 educational projects with European funding).

III. 4. Scientific achievements (scientific authority)

I believe that both candidates have strong scientific and creative achievements, and on this point I consider them equal.

IV. Evaluation of monograph

Both candidates are entering the competition with a monograph.

Chief asst. prof. Karcheva-Bahchevanska, PhD is an independent author of the monograph "HPTLC - application and possibilities in the analysis of compounds of plant origin".

Chief asst. prof. Lukova-Katsarova, PhD presents in co-authorship with Plamen Katsarov a monograph "Polysaccharide microcarriers for drug delivery".

I believe that both monographs of the participants in the competition have serious scientific contributions, which is evident from the excellent evaluation of the reviewers, so I evaluate them with equal weight for both candidates.

V. Reflection (citation) of the candidate's publications in national and foreign literature (publication image)

1. chief asst. prof. Karcheva-Bahchevanska, PhD provides reference for:

- total number of citations, referenced and indexed in Scopus and Web of Science: 92×15 points = 1380 points;

- Citations in monographs and collective volumes with scientific peer review $5 \times 10 = 50$ points;

- Citations in non-refereed peer-reviewed journals $36 \times 5 = 180$ points;

Reviewer of 8 scientific articles in refereed scientific journals, 7 of them with IF $8 \times 15 = 120$ points.

2. chief asst. prof. Lukova-Katsarova, PhD provides reference for:

- total number of citations and reviews, refereed and indexed in Scopus and Web of Science: 238×15 points = 3570 points;

From this list, I subtract citations of a publication that is not in the subject of the competition, and after the reduction of citations, I accept 226 citations and reviews for 15 points - a total of 3390 points.

It is highly impressive that only one review article has been cited more than 100 times, but in co-authorship with other scholars, where it is difficult to assess Lukova's personal contribution, given that she is neither the first nor the last author.

- Citations and reviews in Unrefereed peer-reviewed journals $37 \times 5 = 185$ points.

- Citations in monographs and collective volumes with scientific peer review $3 \times 10 = 30$ points.

Candidate	Citations in ref. in Scopus and Web of Science:	Cited in monographs and collec. vol. with scientific peer review	Citations in non-ref. journals	Total number of points from citations
Karcheva-Bahchevanska	$100 (92+8) \times 15 = 1500$	$5 \times 10 = 50$	$36 \times 5 = 180$	1730
Lukova-Katsarova	$226 \times 15 = 3390$	$3 \times 10 = 30$	$37 \times 5 = 185$	3605

VI. Complex, qualitative evaluation of the teaching and learning activities, including scientific guidance of students, doctoral students, postgraduate students

1. **The candidate chief asst. prof. Karcheva-Bahchevanska, PhD** actively teaches in the specialty, and for the last 3 academic years has a teaching load exceeding the norm almost 4 times. Karcheva has also been a supervisor of one intern Mathias Bon from Polytech Clermont, France.
2. **The candidate chief asst. prof. Lukova-Katsarova, PhD** has been on maternity leave and unpaid leave in the last three years.

An accurate qualitative and quantitative assessment of the two candidates is presented in Tables.

Candidate	Teaching workload by year in hrs.			Total h.	Total points for the last 2 academic years (0.5 points per hour)
	2020/21	2021/22	2022/23		
Karcheva-Bahchevanska	1256	1200	1170	3626	1069
Lukova-Katsarova	-	-	-	-	-

VII. Critical comments and recommendations

VII.1. To the chief asst. prof. Diana Karcheva-Bahchevanska, PhD

I recommend the candidate to increase the publication activity, to be actively involved in supervising more graduate students and postgraduates. Participate actively in more international projects and increase international exchange.

VII. 2. To the chief asst. prof. Paolina Kancheva Lukova-Katsarova, PhD

After a long absence from the department, due to objective reasons, I recommend to actively participate in the teaching process, in the training of pharmacy students, as well as assistant

pharmacists. I recommend to direct the scientific and experimental work to pharmacognosy and phytochemistry, where she determined has great opportunities.

VIII. Overall assessment of the applicant's compliance with the mandatory conditions and the mandatory quantitative criteria and science metrics according to. Regulations for academic positions at MU-Plovdiv, in sections IV.-VI.

A thorough study of the materials provided by both candidates, in accordance with the requirements set out in the Regulations on the Conditions and Procedures for the Acquisition of Scientific Degrees and the Holding of Academic Positions at MU-Plovdiv, shows that both candidates fully meet the minimum requirements for holding the academic position of Associate Professor.

IX. Conclusion

After a careful analysis of the publication activity, citations, participation in scientific and educational projects and the teaching and learning activities of both candidates, I believe that **chief asst. prof. Diana Karcheva-Bahchevanska, PhD** participates in the current competition with more points in indicators D, F and G. She participates with more hours of classroom employment for the last 2 years, according to the Rules and Regulations for Academic Development at MU-Plovdiv, art. 111 (2)., while **chief asst. prof. Paolina Lukova-Katsarova, PhD** participated with more points only in indicator E.

In accordance with the above, I recommend to the esteemed members of the scientific jury to award to **chief asst. prof. Diana Karcheva-Bahchevanska, PhD** the academic position "Associate Professor" in the field of higher education 7. Pharmacognosy and Phytochemistry, at the Department of Pharmacognosy and Pharmaceutical Chemistry.

X. Proposal for ranking

- 1. chief asst. prof. Diana Karcheva-Bahchevanska, PhD**
- 2. chief asst. prof. Paolina Lukova-Katsarova, PhD**

19.12.2023

Plovdiv



Prepared by:

/ Assoc. Prof. Niko Benbasat, PhD/